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CONTRACTIONS OF TITLES.

The following is a list of the contractions and the corresponding full titles of Journals from which abstracts are most frequently prepared for the "Pharmaceutical Journal." The titles prefixed by an asterisk (*) are those of official Journals.

Amer. Journ. Pharm. = American Journal of Pharmacy. Philadelphia. Monthly.

Annalen = Justus Liebig's Annalen der Chemie. Liepzig. Monthly.

* *Apot.-Zeit.* = Apotheker-Zeitung. Organ of the Deutsche Apotheker-Verein. Berlin. Twice a week.

* *Apot. Zeit. Rep.* = Repertorium der Pharmacie. Supplement to the Apotheker-Zeitung.

Archiv = Archiv der Pharmacie. Berlin: J. Greiss. Monthly.

* *Berichte* = Berichte der deutschen chemischen Gesellschaft Berlin. Once or twice a month.

* *Brit. Med. Journ.* = British Medical Journal, London. Weekly.

Bull. com. = Bulletin commercial. Supplement to L'union pharmaceutique. Paris: Pharmacie centrale de France. Monthly.

* *Can. Pharm. Journ.* = Canadian Pharmaceutical Journal. Toronto. Monthly.

Chem. News = Chemical News. London. Weekly.

Chem. Zeit. = Chemiker Zeitung. Cöthen. Twice a week.

Chem. Zeit., Rep. = Chemisches Repertorium. Supplement to the Chemiker Zeitung.

* *Comp. rend.* = Comptes rendus des séances de l'Académe des Sciences. Paris: Gauthier-Villars. Weekly.

Deuts. Am. Apot. Zeit. = Deutsch Americanische Apotheker Zeitung. New York.

Int. Photo. Monats. = Internationale Photographische Monatschrift fur Medzin. Düsseldorf. Monthly.

* *Journ. Chem. Ind.* = Journal of the Society of Chemical Industry. Monthly.

* *Journ. de pharm.* = Journal de pharmacie et de chimie. Paris: G. Masson. Twice a month.

Journ. Pharm. Elsass-Loth. = Journal der Pharmacie von Elsass Lothringen. Strassburg. Monthly.

Journ. Zahnheil. = Journal für Zahnheilkunde. Berlin.

Med. Press = Medical Press and Circular. London: A. A. Tindall. Weekly.

Mod. Med. = Modern Medicine and Bacteriological Review. Battle Creek, Mich., U.S.A. Monthly.

Mon. scient. = Moniteur scientifique. Paris. Monthly.

Münch. med. Woch. = Münchener medicinische Wochenschritt, Munich. Weekly.

Nouv. rem. = Les nouveaux rémèdes. Paris. Twice a month.

Pediat. = Pediatrics. London and New York. Weekly.

Petit Mon. Pharm. = Petit Moniteur de la Pharmacie. Paris. Fortnightly.

Pharm. Centralh. = Pharmaceutische Centralhalle. Dresden. Weekly.

Pharm. Post = Pharmaceutische Post. Vienna. Weekly.

Pharm. Woch. = Pharmaceutische Wochenschrift. Berlin. Weekly.

Pharm. Zeit. = Pharmaceutische Zeitung. Berlin: J. Springer. Twice a week.

Pharm. Zeits. für Russ. = Pharmaceutische Zeitschi te für Russland. = St. Petersburg. Weekly.

Photo. Arch. = Photographisches Archiv. Düsseldorf. Monthly.

* *Proc. Chem. Soc.* = Proceedings of the Chemical Society. London. About twice a month.

Répertoire = Répertoire de pharmacie, archives de pharmacie, et journal de chimie médicale réunis. Paris. Monthly.

Scient. Amer. = Scientific American. New York. Weekly.

Schweiz. Woch. = Schweizerische Wochenschrift für Chemie und Pharmacie. Zurich. Weekly.

Therap. Monats. = Therapeutische Monatshefte. Berlin.

Union Pharm. = L'union pharmaceutique. Paris: Pharmacie centrale de France. Monthly.

Wien. Klin. Rund. = Wiener Klinische Rundschau. Vienna: A. Hölder.

Zahn. Rund. = Zahnaertliche Rundschau. Berlin.

Zahntech. Reform. = Die Zahntechnische Reform. Berlin: R. F. Funcke.

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THE

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Oil of Jatropha Curcas Seeds. The oil of purging nuts has been examined by O. Klein (*Zeitsch. für angew. Chem.*), who finds that it consists of glycerides of stearic and palmitic acids with possibly a little myristic glyceride. It has the following constants. Specific gravity 0 9199 to 0·924; refraction index 1·4681 to 1·4689; saponification number, 197 to 203·5; free acid number, 0·57 to 4·96; volatile acid number, 5·5 to 7·1. These figures were obtained from both hot and cold pressed, ether extracted and commercial (hot pressed) oils.—*Pharm. Zeit.*, xliii., 793.

Production of a Dextro-terpinel from Linalol. K. Stephen finds that when linalol is acted upon by acetic anhydride, a strongly dextro-rotatory crystalline terpineol is formed, which melts at 35° C. The so-called "licarhodol" obtained by Barbière by saponifying the acetylised products of linalol, is stated to be nothing but this terpineol, with linalol and geraniol. Glacial acetic acid only acts upon linalol when heated, with the formation of this dextro-terpineol; concentrated formic acid converts lævo-linalol into dextro-terpineol, and dextro-linalol (coriandrol) into lævo-terpineol.—*Journ. Prakt. Chem.*, 58, 109, through *Chem. Repert.*, xii., 253.

White Calcium Carbide. When calcium carbide is perfectly pure, in which condition H. Moissan has recently prepared it, by reducing pure calcium hydride in a bed of pure amorphous carbon, it is quite white, and forms white scales which are seen to be transparent when viewed through a lens. The presence of the least trace of iron is sufficient to colour them; the brownish colour of commercial calcium carbide is due to traces of this metal.—*Comptes rendus*, cxxvii., 917.

Polymeric Metallic Oxides. The oxides of the rare earths, and particularly ceresoceric oxide, C_3O_4, are found by G. Wyrouboff and A. Verneuil to become polymerised with great facility, and to form among themselves complex combinations which are also polymerised, and which differ in reaction from the simple oxides. Normal ceresoceric oxide is said not to exist in the free state, and several polymers are shown to exist, varying in their molecular formulæ according to the method and temperature of their preparation. It is suggested that the so-called basic salts of these and other metals, such as those of bismuth, lead, and iron, are, in reality, salts of successively polymerised molecules of the corresponding oxides.—*Comptes rendus*, cxxvii., 863.

Displacement of Metals by Hydrogen. Further evidence of the metallic attributes of hydrogen arc brought to light by the recent researches of Colson. He finds that this element will replace metals in many combinations; in some cases even at ordinary temperatures, in others, not until a somewhat high temperature is reached. For instance, yellow tribasic silver phosphate when exposed to an atmosphere of hydrogen gradually darkened in colour, and in three months was found to have absorbed a considerable amount of the gas. The silver salt had become acid in reaction, and on analysis, the amount of black reduced silver found was directly proportional to the amount of hydrogen absorbed. On increasing the temperature, the displacement took place much more rapidly, but the liberated silver was white. Copper sulphate, like silver sulphate, was not acted upon at normal temperatures, but a considerable amount of the metal was quickly displaced by hydrogen on heating.—*Comptes rendus*, cxxvii., 961.

New Crystalline Neutral Principle in Wormwood. After removing absinthin from the alcoholic extract of *Artemisia absinthium* and then treating it with amylic alcohol, Adrian and Trillat have isolated a new crystalline body, which forms fine straw-yellow needles, free from bitterness and without physiological action. The formula is given as $C_{53}H_{51}O_{20}$ or $C_{52}H_{51}O_{20}$. The crystals melt at 165° C., are insoluble in water or in ether, but dissolve in warm amylic alcohol, chloroform, and acetone. The new body does not reduce Fehling's solution. When heated with acetic anhydride it gives a compound separating in foliaceous crystals, which melt at 162-163° C. When distilled with lime the original substance affords homologues of phenol.—*Comptes rendus*, cxxvii., 874.

The Active Principle of Insect Powder. The active principle of insect powder is not, according to Cæsar and Loretz, an alkaloid. They find that the ethereal extract of pyrethrum flowers, when mixed with an inert powder, has a powerful toxic effect on flies. The same ether extract was washed out with acid solution to remove any alkaloid. This acid washing was made alkaline and washed out with ether. The ethereal residue from this was found to be inert, while the original extract remained as toxic to insects as before.—*Pharm. Cent.*, xxxix., 727.

Essential Oil of Pyrethrum Flowers. H. Hacnsel states that the flowers of *Pyrethrum cinerarifolium* yield about 0·39 per cent. of brown concrete oil of pleasant odour, somewhat resembling that of elder flowers. The oil liquefies at 28° C.—*Pharm. Zeit.*, xliii., 760.

Savin Oil. Fromm finds that savin oil contains the esters of an unsaturated alcohol, sabinol, $C_{10}H_{15}OH$, which, in the oil, is combined with acetic acid and another acid of higher boiling point.—*Chem. Zeit.*, xxii., 789.

THE NEW AND OLD EXAMINATION SCHEDULES.

The following notes embody the result of a careful comparison of the new schedule for the Minor and Major examinations of the Pharmaceutical Society (see page 18 *et seq.*), which comes in force in October next, with the schedule at present in force. The alterations in the Major syllabus, as will be seen, are not extensive, consisting mainly in an increase of the requirements with regard to the candidate's knowledge of the classification of plants, and his ability to make and deal with microscopical preparations illustrating the structure of plants and the distinctive histological features of crude drugs. A similar expansion of the syllabus is indicated in the part of the new schedule referring to the Minor examination in botany, but so far as the other subjects are concerned, the changes tend more in the direction of rearrangement and simplification than of expansion; greater definiteness being the prevailing feature of the new schedule. Coming to details, attention will first be devoted to the alterations in the syllabus of the

MINOR EXAMINATION.

Botany.—All that a Minor candidate is at present required to know with regard to the classification of plants is sufficient to enable him "to refer any flowers that may be shown to him to their class and sub-class." In future, however, he must in addition be familiar with the most important characteristics of eight natural orders—Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Umbelliferæ, Compositæ, Solanaceæ, Liliaceæ—and be able to describe flowering plants in technical language. The additions to the list of plants for recognition are *Brassica nigra*, *Prunus lauro-cerasus*, *Sambucus nigra*, *Quercus robur*, *Ulmus campestris*, *Salix alba*, *Pinus sylvestris*, *Juniperus communis*. The omissions from the list now in use are *Æthusa cynapium*, *Achillea millefolium*, *Borago officinalis*, *Arum maculatum*. The names of two plants are altered, *Hordeum vulgare* becoming *H. distichon*, and *Triticum sativum* becoming *T. vulgare*. The requirements in morphology, anatomy, and physiology are not increased except so far as the use of the microscope is concerned. At present the candidate is only expected to be able "to recognise, by means of the microscope, sections of stems of dicotyledonous, monocotyledonous, and cryptogamic plants; spiral, reticulated, and scalariform vessels; as well as the simpler structures, such as stomata, pollen grains, and hairs." In future he must be able to recognise, by means of the microscope, and describe sections illustrating certain specified plant structures—cells, tissues, and the "roots, stems and leaves of flowering plants and ferns."

Chemistry and Physics.—The requirements in chemistry and physics differ but slightly from those specified in the older schedule. The list of metals in paragraph (*d*) is extended by the addition of strontium, nickel, cobalt, and the compounds of all the metals referred to in the paragraph are not now those only that are described in the British Pharmacopœia. In paragraph (*e*) the list of compounds is increased by the addition of other cyanides, ferrocyanides, and ferricyanides than those of potassium. Additions to the list of compounds, the chief methods of preparing which must be familiar, are ethane, acetylene, methyl alcohol, formic aldehyde and acid, acetamide, olein, glycerol, benzene, phenol, nitro-benzene, aniline, benzoic acid, salicylic acid. Several of those compounds, however, were formerly included in the syllabus of the practical examination in chemistry. Spirit of nitrous ether and amyl nitrite are now omitted from the list.

Chemistry (Practical Examination).—An addition to the syllabus of the practical examination is the requirement "to analyse a mixture containing not more than two metals and two acid radicles." Judging by analogy from what appears in the Major syllabus, the sentence quoted implies ability to analyse mixtures containing two metallic salts, and that view appears to be supported by the President's remarks at the Council meeting in December last (see p. 617 of last volume). At the same time, there is nothing in the actual wording of the syllabus to prevent other substances than metallic salts being present. The organic compounds to be identified by chemical tests are hydrocyanic acid, cyanides, ferrocyanides, ferricyanides, oxalates, acetates, tartrates, citrates, salicylates; starch, cane sugar, grape sugar, salicin; quinine, morphine, strychnine, and their salts. According to the old schedule, the list includes cyanogen, hydrocyanic acid, potassium cyanide, ferrocyanide and ferricyanide; oxalic, tartaric, and citric acids; marsh gas, ethylene, alcohol, aldehyde, acetic acid, ethyl acetate, spirit of nitrous ether, amyl nitrite, chloral hydrate, chloroform, iodoform, ether, starch, cane and grape sugar, salicin, quinine, morphine, strychnine. Another addition in the new schedule is the requirement that the candidate should "understand the principles of volumetric analysis" and be able "to prepare, standardise, and use volumetric solutions," as well as perform those volumetric determinations which are described in the Pharmacopœia. The quantitative determinations required at present are limited to those of the total alkaloids in cinchona bark, and in the tincture and extract of nux vomica, and of the morphine in opium. In future, the list of assays will also include those of official preparations of cinchona, belladonna, ipecacuanha, and jalap. Spirit of nitrous ether is now omitted from the list of organic compounds mentioned in the concluding paragraph of the syllabus.

Materia Medica.—The list of crude drugs is extended by the addition of the rhizome of *Veratrum viride*; the barks of *Nectrandra rodiæi*, *Canella alba*, *Cinchona calisaya*, *C. lancifolia*, *Pinus larix*, *Quercus robur* and *Rhammus frangula*; the leaves of *Aconitum napellus*, *Piper angustifolium* and *Nicotiana tabacum*; the herbs *Lactuca virosa*, *Ruta graveolens*, *Juniperus sabina*; the flowers of *Rosa centifolia*; the fruit of *Ægle marmelos*; the seeds of *Theobroma cacao* and *Hordeum distichon*; the hairs and glands of *Mallotus philippinensis*; Cape and Natal aloes, gutta-percha, mastiche, elemi, *Cetraria islandica* and *Mylabris phalerata*. Most of these are only apparent additions, the drugs having been official in the 1885 Pharmacopœia. A similar reason, *i.e.*, the inclusion of drugs formerly in the list in the 1898 Pharmacopœia, accounts for the disappearance of several names from the list in the new schedule. The omissions are the root of *Bryonia alba*; the rhizome of *Allium sativum*; the barks of *Cinnamodendron corticosum*, *Simaruba amara*, *Quillaia saponaria*, and *Prunus serotina*; the herbs *Tussilago farfara* and *Spigelia marilandica*; the fruit of *Capsicum annuum*; the vague "juices of *Aloe spicata*, etc.," curare, Chian turpentine, amber, sponge, and cuttlefish bone. Shellac is now classified as a resin, and not as an animal substance. Additions to the schedule are the requirements to be able to recognise the "principal commercial varieties" of all the crude drugs, to indicate their morphological nature or mode of formation, to describe the drugs and to point out their diagnostic characters. The candidate must also know the proportion of the chief active constituents present in good samples of the more important drugs, and possess a practical knowledge of any pharmacopœial tests or processes of assay applied to crude drugs or their official products. The words in the older syllabus requiring the candidate to name the officia

preparations into which the drugs enter are now omitted from the schedule.

Pharmacy.—The pharmacy syllabus reads almost word for word the same as in the existing schedule. According to paragraph (*c*) the candidate is in future to be able to show a "general" rather than a "practical" knowledge of the processes for making official preparations. The practical knowledge will still be required, however, as reference to the section headed "Practical Pharmacy and Dispensing" will show, the requirement concerning ability to conduct the operations mentioned being dealt with there. No alteration is made in the requirements with regard to the candidate's knowledge of the poison regulations.

Practical Pharmacy and Dispensing.—What is apparently new in this part of the schedule is in reality transferred from the previous section, as already mentioned.

Prescriptions.—There is no alteration whatever in this section, not even a verbal one.

MAJOR EXAMINATION.

Botany.—As in the case of the Minor syllabus in this subject, the chief alteration is to be found in the knowledge of the classification of plants required. The list of natural orders, of which the characteristic features must be familiar is increased by the addition of the orders Caryophyllaceæ, Geraniaceæ, Saxifragaceæ, Valerianaceæ, Boraginaceæ, Primulaceæ, Ulmaceæ, Urticaceæ, Myricaceæ, and Cyperaceæ. The leading English authorities, by the way, make the Ulmaceæ a sub-order or tribe of the Urticaceæ. Three natural orders are omitted from the list—Cucurbitaceæ, Convolvulaceæ, and Coniferæ, whilst eight are transferred to the Minor syllabus. The leading genera of the specified natural orders, which the candidate is at present required to be able to distinguish practically, are not referred to in any way in the new schedule, and the candidate is not in future to possess a knowledge of the system of Linnæus. Doubtless the statement that he will be expected to show "a competent practical knowledge" of "the characteristic features" of the specified natural orders, may be taken to cover the requirement in the older schedule "to refer to their respective orders or genera such specimens included in the schedule as may be shown to him." The requirements of the new schedule in morphology and physiology do not cover more ground than the older ones, though they are stated much more definitely, but there will be more practical work in future. At present the candidate is only required "to have a practical acquaintance with the use of the microscope, and by means of it to recognise the various tissues found in the plant, the reproductive organs of the cryptogams and phanerogams, and the more important cell contents." The making and mounting of sections and the application of microchemical tests are now added to the requirements.

Chemistry and Physics.—The only addition in this section is a knowledge of the most important facts connected with the interference of light. With that exception, the syllabus remains verbally identical with what it is at present.

Chemistry (Practical Examination).—As additional practical tests the candidate may be asked to use the Kjeldahl process for determining the nitrogen in organic compounds, to perform processes of gas analysis which can be carried out in a nitrometer, and to detect methyl alcohol in tinctures, liniments, and other preparations.

Materia Medica.—The only alteration in this subject is in connection with the use of the microscope, the candidate being expected in future to make and describe microscopical preparations, to point out distinctive histological features in the same, and to discover obvious adulterations present in powdered drugs. Authentic material will be available for comparison in examining the powdered drugs, so this new test will not be an unduly severe one. In view, however, of the expansion of the syllabus in practical botany and materia medica, it is well to bear in mind the fact that the time at present allowed for the practical work in botany and materia medica is only three hours altogether.

RECENT WORK IN BOTANY.

CHANGES IN OILY SEEDS DURING GERMINATION.—M. L. Maquenne has made a series of experiments for the purpose of determining whether the constituents of oily seeds are transformed directly into carbohydrates during germination. He finds the result to vary in different cases. In *Arachis*, the arachidic acid, $C_{20}H_{40}O_2$, appears to contribute but very slightly to the production of sugars; while in the castor oil plant, ricinoleic acid, $C_{18}H_{34}O_3$, an incomplete acid-alcohol, plays an important part in this reaction. The difference is attributed to differences in the arrangement of the molecules in the two acids.—*Comptes rendus*, cxxvii., p. 625.

DORMANT LIFE IN BULBS AND TUBERS.—As is pointed out by M. Leclerc du Sablon (*Comptes rendus*, vol. cxxvii., p. 671), the resting period of underground bulbs and tubers is not the winter, but the summer season, their growth commencing again in the autumn. It is more important, therefore, that they should be able to protect themselves against drought than against cold. The reserve carbohydrates are chiefly starch, inulin, dextrose, and accharose; glucose is comparatively rarely present, but is the most abundant carbohydrate in *Allium* and *Asphodelus*. During the period of repose changes of a chemical nature are going on in the reserve material without any corresponding external change in form. Digestion has commenced, and the bulb and tuber is brought into a state fit for germination; diastases or soluble ferments, which were almost entirely absent at the commencement of that period, have been gradually formed.

TEMPERATURE OF TREES.—Herr F. Schleichert records the result of some interesting observations on the temperature of the trunks of trees. In the species on which especially the observations were made, *Pavia rubra*, the temperature at a depth of 12 Cm. below the surface was found to be in the main dependent on that of the surrounding air some hours previously, attaining its maximum about midnight, and its minimum between noon and 3 p.m. To a less extent it is influenced by the temperature of the soil and of the ascending current of sap, and by the amount of exposure of the leaves to direct sunshine. The temperature of the leaves is stated to be in some cases below that of the surrounding air, though only to a small extent, about 0·7° C., owing to transpiration; but in other cases, especially with thick-leaved plants, as the aloe and cactus, it was considerably higher, 28·5°, as compared with 20°. This is not due to a development of heat in the leaf, but to the absorption of heat from the air.—*Naturwissenschaftliche Wochenschrift*, 1898, October 2.

REGULATIONS RELATING TO THE SALE OF POISONS IN GERMANY.

According to the law passed in 1895 as applicable throughout Germany, the control of the sale of poisons was placed in the hands of the local police authorities and made subject to the following regulations. Infringement of any of these regulations renders the offender liable to prosecution by the police authorities, and, on conviction, to a penalty, not exceeding seven pounds ten shillings, or a corresponding term of imprisonment.

1. The drugs, chemical preparations, and pharmaceutical preparations enumerated in the accompanying schedule are poisons within the meaning of the regulations.

The sale of poisons for technical purposes is subject to the regulations stated in paragraphs 2 to 18.

2. The stock of poisons must be systematically arranged, separately from other articles, and no poison may be kept over or near to any article of food.

3. Poisons must be kept in solid closed vessels fitted with solid well-fitting covers or stoppers.

Pigments—as well as other articles in Part II. or Part III. of the Schedule—which do not deliquesce or evaporate on exposure to the air may be kept in drawers, provided the drawers are covered and so constructed that the contents cannot be spilt.

No poison may on any account be kept otherwise than in the vessel proper for storing it.

4. The stock vessels must be marked "Poison," and with the name of the contents as given in the Schedule, besides which, only the local name of the article may be attached in smaller letters. In the case of poisons in Part I., the local name is to be written distinctly and durably, in white letters on a black ground—the names of poisons in Part II. and III. in red letters on a white ground. Stock vessels for mineral acids, alkaline lyes, bromine, or iodine, may have the names cut or etched upon a white ground.

This regulation does not apply to the stock vessels used in wholesale warehouses, provided that other effectual means are adopted for preventing mistakes by substitution. But when stock is taken from such a warehouse for retailing by its owner, the stock vessel used for that purpose must be labelled in conformity with the regulation as stated above.

5. The poisons in Part I. of the Schedule must be kept in a room (poison chamber), closed on all sides by solid walls, and in which no other articles but poisons are kept. If the poison chamber is constructed of wooden partitions, it must be erected in a place separated from the shop where sales are conducted.

The poison chamber must be so arranged that sufficient daylight for the conduct of work to be done there has access, and on the outside of the door the word "Poison" is to be distinctly and durably inscribed.

The poison chamber is to be entered only by the proprietor of the business or by persons acting under his direction, and it must be kept locked at all times when not in use.

6. Inside the poison chamber the poisons in Part I. of the Schedule must be kept in a locked-up cupboard.

This poison cupboard must have distinctly and durably marked on the outside of the door the word "Poison."

Near the poison cupboard there must be a table or shelf adapted for weighing out the poisons.

Large stocks of the several poisons in Part I. may be kept outside the poison cupboard provided they are in closed vessels.

7. Phosphorus, or preparations containing it, must be stored outside the poison cupboard, and locked up, whether inside or outside of the poison chamber, in a place free from frost in a fire-proof receptacle, white phosphorus being kept under water. Phosphorus pills are an exception.

Potassium and sodium are to be kept immersed in a non-oxygenated medium (paraffin oil, rock oil, etc.), and locked up in a place protected from water and fire.

8. Special appliances (scales, mortars, spoons, etc.) are to be provided for exclusive use respectively with the poisons in Part I. and Parts II. and III., and they are to be distinctly and durably marked with the word "Poison" in the colours indicated in Paragraph 4. In every receptacle used for storing a poisonous pigment there must be a special spoon. These appliances must not be used for any other purpose, and with exception of the spoons used for poisonous pigments, they are to be always kept clean. The appliances to be used for poison kept in the poison cupboard are also to be kept in it. These regulations do not apply to the weights used in weighing.

The use of special scales is not requisite when large quantities of a poison are to be weighed into the stock vessels or into those used for retailing.

9. In reference to the storage of poisons in pharmacies, the following deviations from the regulations 4, 5, and 8 are allowed :—

In reference to 4 the regulations apply to pharmacists only in so far as relates to the vessels for mineral acids, lyes, bromine, and iodine. In other respects the designation of vessels is to be in accordance with the special regulations applying to pharmaceutical practice.

In reference to 5, the poison chamber may be constructed of lattice work when it is placed within a store room. Small stocks of poisons in Part I. may be stored in special receptacles, situated in the shop or in a suitable adjoining room, locked up and distinguished distinctly and durably with the word "Poison," or "Venena," or "Tabula B." If the need for poison be so small that the entire stock can be kept in that way, there is no obligation to erect a special poison chamber.

In reference to 8, the regulations as to using special appliances in manipulating poisons in Part. I. are to hold good in respect to the small stocks of poison to which the previous passage relates. For poisons in Part II. and III.—except morphine, its compounds and preparations—the use of special appliances is not requisite.

10. Poison may be supplied only by the proprietor of a business or by the persons authorised by him to do so.

11. In the supply of poisons in Parts I. and II. a record of each transaction is to be made in the poison book, under consecutive numbers, according to the following form :—

No.	Reference to Permit Note.	Date of Sale.	Poison. Name. Quantity.	Purpose for which Poison is to be used by Purchaser.	Purchaser. Name. Address. Occupation.	Received by. Name. Address. Occupation.	Name of Seller.	Signature of Receiver.

The entries must be made, immediately after delivering the articles sold, by the person selling them and always in immediate sequence to the entry next preceding. The poison book is to be preserved for ten years after the date of the last entry.

These regulations do not apply to the supply of poisons by wholesale dealers to retail dealers, to manufacturers, or to

institutions of the State for purposes of research or education, provided that such a record be kept that the destination of the poison so supplied can be ascertained.

12. Poison may be sold only to such persons as are known to be trustworthy and when the purpose to which it is to be applied is lawful, either for industrial, economical, scientific, or artistic use. If the vendor has no certain knowledge in regard to those points he must not supply poison except on the authority of special permission obtained from the proper authorities.

Permit notes may be issued by the local police authorities after due examination and according to the form below.

PERMISSION TO OBTAIN POISON.

Name.....

Address.....

Firm .....

desires to be supplied with

quantity and name of poison.....

in order to .....

After inquiry no objection to this demand has been ascertained.

Date.....

Signature of Authority.

Seal.

This document does not do away with the necessity for a poison ticket, according to Paragraph 13. It is valid only for fourteen days from the date of issue unless the contrary be especially indicated.

Such a permission is generally to refer to a specified quantity, and exceptionally it may also apply to the purchase of particular poisons during a period of not more than one year. It is not available after the lapse of fourteen days from the date of issue unless the contrary is stated upon the document.

Poisons must not be supplied to children under 14 years of age.

13. The poisons in Part I. and Part II. of the Schedule may be supplied only in return for a receipt note from the person to whom thoy are supplied. If the poison is fetched by a messenger the vendor has also to obtain from him an acknowledgement of having received it.

POISON RECEIPT.

I hereby acknowledge that, commissioned by the.....

I have received: Quantity.....Name of Poisons.....

properly secured and labelled.

Being well aware of the danger arising from careless use of the poison, I will be careful that it does not pass into improper hands and that it is used only for the purpose intended.

The poison is to be fetched by.....

Residence ....Purchaser's sigrature in full.....

Date.....Occupation.....

Addition in case the poisen is fetched by another person :—

By order of..... .....I have received the poison above mentioned, and promise to deliver it safely to my employer.

Signature..... ....

Date ....

The receipts are to be endorsed with the number of the corresponding entry in the poison book, and they are to be preserved for ten years.

The certificate of the person supplying the poison has also to be entered in a column of the poison book.

In the case referred to in the second passage of Paragraph 11 a poison ticket is not required.

14. Poisons must be supplied in strong well-closed vessels—for solids that are not deliquescent or volatilisable on exposure to the air, and included in Parts II. or III., durable wrappers of any kind are sufficient, provided they do not admit of the contents being spilt or shaken out.

The vessels, or the wrappers used in their place, must be marked, as indicated in Paragraph 4, and with the name of the vendor. In the case of the solid poisons that are not deliquescent or volatilisable on exposure to air, in Part III., the word "Caution" may be substituted in place of the word "Poison."

In supplying retailers, manufacturers, or institutions of the State, any other mode of labelling that will effectually prevent mistake will be sufficient.

15. The supply of poisons in drinking vessels or culinary utensils is forbidden, or in such bottles or jugs as may by their form or customary application lead to the danger of confounding their contents with articles of food or drink.

16. In regard to the supply of poisons for medicinal purposes by pharmacists, the regulations 11 to 14 do not apply.

17. The regulations in paragraphs 2 to 14 do not apply to paint mixed ready for use and consisting of oil-resin or lac colours, unless they are arsenical. The exception also holds in regard to other pigments prepared for use in the form of sticks, paste, or cakes, or inclosed in tubes, provided that upon each piece, or upon its container, the word "Poison" or "Caution" is distinctly marked, together with the name of the pigment or a designation making the kind of poison contained in it recognisable.

18. In the supply of articles for the destruction of vermin, in the preparation of which poisons are used, every packet is to bear an indication of the danger attending incautious use of such articles. The mode of expression to be adopted for that purpose may be prescribed by the various local authorities.

Arsenical fly-paper must not be supplied or kept in stock for sale. Other arsenical vermin killers may be kept for sale, or supplied, only when mixed with a green pigment soluble in water, and they may only be supplied on presentation of a permit to that effect in accordance with Paragraph 12.

Vermin killers containing strychnine may be kept for sale or supplied only in the form of impregnated corn containing, at the utmost, half per cent. of strychnine nitrate and coloured permanently dark red.

The above limitations may, at times, be set aside when and in so far as it may be desirable to adopt, under police supervision, extraordinary measures for the destruction of noxious animals, etc., such as field mice.

19. Persons make how a business of the destruction of vermin must keep their stock of poison in conformity with the regulations in paragraphs 2, 3, 4 and 7. So far as they do not carry with them a stock of poison for the practice of their trade, they must keep it in locked receptacles, accessible only by themselves or by persons acting under their directions. They must not supply the poisons or the vermin killers to any other persons.

SCHEDULE OF POISONS, IN FORCE IN GERMANY.

PART I.

Aconitine, its compounds and preparations.
Arsenic, its compounds and preparations, also arsenical pigments.
Atropine and its compounds.
Brucine, its compounds and preparations.
Curare and its preparations.
Hydrocyanic acid, potassium cyanide, other cyanides and their solutions, with the exception of Prussian blue and potassium ferrocyanide.
Daturine, its compounds and preparations.
Digitalin, its compounds and preparations.
Emetine, its compounds and preparations.
Erythrophlein, its compounds and preparations.
Hydrofluoric acid.
Homatropine, its compounds and preparations.
Hyoscine (Duboisine), its compounds and preparations.
Hyoscyamine, its compounds and preparations.
Cantharidin, its compounds and preparations.
Colchicin, its compounds and preparations.
Coniine, its compounds and preparations.
Nicotine, its compounds and preparations.
Nitro-glycerin solutions.
Phosphorus (also red phosphorus containing the yellow form) and the articles prepared with it for destruction of vermin.
Physostigmine, its compounds and preparations.
Picrotoxin.
Mercurial preparations and pigments, except calomel and vermilion.
Scopolamine, its compounds and preparations.
Strophanthin.
Strychnine, its compounds and preparations, excepting corn containing strychnine.
Uranium salts (soluble), as well as uranium pigments.
Veratrine, its compounds and preparations.

PART II.

Acetanilide (Antifebrin).
Adonis herb.
Ethylene preparations.
Agaricin.
Aconite—extract—root—herb—tincture.
Amylene hydrate.
Amyl nitrite.
Apomorphine.
Belladonna—leaves—extract—tincture—root.
Henbane—herb—seed—extract—tincture.
Bitter almond oil containing hydrocyanic acid.
Nux vomica—extract—tincture, as well as vermin killers.
Tartar emetic.
Bromine.
Ethyl-bromide.
Bromalhydrate.
Bromoform.
Butyl chloral hydrate.
Calabar bean—extract—seed—tincture.
Cardol.
Dichlor-ethyliden.
Chloral formamide.
Chloral hydrate.
Chloracetic acid.
Chloroform.
Chromic acid.
Cocaine, its compounds and preparations.
Convallamarine, its compounds and preparations.
Convallarin, its compounds and preparations.
Elaterin, its compounds and preparations.
Erythrophleum.
Euphorbium.
Digitalis—leaves—vinegar—extract—tincture.
Gelsemium—root—tincture.
Lactura virosa lactucarium—extract—herb—juice.
Rhus toxicodendron—leaves—extract—tincture.
Gatiola officinalis—herb—extract—tincture.
Gamboge, its solutions and preparations.
Indian hemp—extract—tincture.
Hydroxylamine, its compounds and preparations.
Jalap—resin—rhizomes—tincture.
Cherry laurel oil.
Codeine, its compounds and preparations.
Cocculus indicus.
Cotoin.
Croton oil.
Morphine, its compounds and preparations.
Narceine, its compounds and preparations.
Narcotine, its compounds and preparations.
Hellebore (green)—extract—tincture—root.
Hellebore (black)—extract—tincture—root.
Nitrobenzene (mirbane oil).
Opium and its preparations, except opium plaster and opium water.
Oxalic acid.
Paraldehyde.
Pental.
Pilocarpine—its compounds and preparations.
Cevadilla, extract—fruit—tincture.
Savin tips—extract—oil.
St. Ignatius beans—seed—tincture.
Santonin.
Scammony—resin—root.
Hemlock—herb—extract—gant—tincture.
Mustard oil (ethereal).
Spanish flies, their alcoholic and ethereal preparations.
Stramonium leaves—extract—seed—tincture—except for smoking or fumigation.
Strophanthus—extract—seed—tincture.
Sulphonal and its derivatives.
Thallin, its compounds and preparations.
Urethane.
Veratrum (white hellebore)—tincture—root.
Water hemlock—herb—extract.
Colchicum—extract—rhizome—seed—tincture—wine.

PART III.

Antimony chloride, solid and in solution.
Barium compounds, except heavy spar (barium sulphate),
Bitter almond water.
Basic lead acetate.
Sugar of lead.
Ipecacuanha root—extract—tincture—wine.
Pigments containing antimony, barium, lead, chromium, gamboge, cadmium, copper, picric acid, zinc, or tin, with exception of barium sulphate, chromium oxide, copper, zinc, tin and their alloys in the form of metal colours, cadmium sulphide, zinc sulphide, tin sulphide (mosaic gold), zinc oxide, tin oxide.
Gold salts.
Iodine and its preparations, except saccharated ferrous iodide and iodine sulphide.
Iodoform.
Cadmium and its compounds, including bromide and iodide.
Caustic potash solution containing more than 5 p.c. KHO by weight.
Potassium.
Potassium bichromate.
Potassium binoxalate—salt of sorrel.
Potassium chlorate.
Potassium chromate.
Potassium hydroxide (caustic potash).
Carbolic acid, also the crude acid, as well as solutions containing more than 3 per cent. by weight of carbolic acid.
Cherry laurel water.
Caffeine, it compounds and preparations.
Colocynth—extract—tincture.
Creosote.
Cresol.
Copper compounds.
Lobelia—herb—tincture.
Squill—extract—tincture—wine.
Sodium.
Sodium bichromate.
Sadium hydroxide (caustic soda, soap stone).
Caustic soda solution, containing more than 5 p.c. NaHO by weight.
Phenacetin.
Picric acid and its compounds.
Calomel.
Nitric acid.
Hydrochloric acid, containing more than 15 per cent. HCl.
Carbon bisulphide.
Sulphuric acid, containing more than 15 per cent. H_2SO_4.
Silver salts, except silver chloride.
Staphisagria—seeds.
Zinc salts, except zinc carbonate.
Tin salts.

OPENING OF A CHEMICAL AND PHARMACEUTICAL LABORATORY AT RAJKOTE KATHIAWAR, WESTERN INDIA.

A laboratory has been erected in Rajkote, the seat of the Government in the Province of Kathiawar, Western India. It consists of pharmaceutical and chemical laboratories, lecture theatre, director's room, assistants' and clerks' office, distillation and store rooms. At the entrance of the laboratory there is a marble tablet inscribed as follows :—

LAXMON MERAM CHEMICAL LABORATORY.
Constructed at a cost of Rs 30,000,
generously provided by
AZAM WALA LAXMON MERAM,
Chief of Thana Deoli.
Opened by
H. E. LORD SANDHURST, G.C.I.E., Governor of Bombay,
On November 29, 1898.

The staff consists of Director Mr. H. L. Lee (formerly lecture assistant in the Pharmaceutical Society's School), two native assistants, and a clerk.

The Chiefs of Kathiawar requested H. E. Lord Sandhurst, whilst touring in Kathiawar, to formally open the Laboratory.

In the grounds of the Laboratory, a large marque was erected where the chiefs and their attendants, political officers, a number of European residents and native gentlemen were present.

On behalf of Azam Laxmon Meram, his Karbhari addressed H. E. and others as follows.

"Your Excellency, chiefs, ladies and gentlemen, the objects of the present assembly at which your Excellency has so graciously consented to preside, is to open a chemical laboratory. The object of this laboratory is to teach the native medical men or vaidyas the proper method of preparing drugs from our Indian herbs, to investigate more carefully the properties of those in use, and to discover the virtues of others, which, though used locally by herbalists, are not yet known to Western science.

"When I heard that the political agent was considering the ways and means of founding and maintaining this institution I offered to provide the necessary funds for the Laboratory and Director's quarters, which have now been erected under the able supervision of the agency engineer, Mr. R. B. Booth, C.E. These, I am sure your Excellency will find, have been constructed in the manner best adapted to the work which is to be carried on here with a view to securing the aims of the institution, and our thanks are due to Mr. Booth for his able assistance in the matter. My contribution to medico-chemical research, however, would have been sterile had not my fellow-chiefs come forward to adopt the Laboratory as one of our central institutions, and to provide the funds for a competent director and necessary staff. The total cost of the building. quarters, and outhouses will be Rs. 30,000, while the chiefs have voted Rs. 7500 for the apparatus and an annual grant of Rs. 8628 for the maintenance of the institution. The staff of the Laboratory has been engaged, and they have already got through one term's very satisfactory work.

"We have secured, through the kind assistance of Mr. Savory, of Bond Street, London, the services of Mr. H. L. Lee as Director of the Laboratory, who has already been giving lectures since August last to a class of twenty-one students, composed mostly of vaidyas or practitioners of Indian medicine. To the three most successful at the recent term examination your Excellency will be asked to kindly give prizes.

"For the maintenance of these twenty-one students, thirteen scholarships have been provided by different States. The remaining eight are private students studying at their own expense. Mr. Lee reports to us the result of the first term's examination that the students have, on the whole, made good progress, and take great interest in their work, and it is evident that under Mr. Lee's careful and conscientious direction the institution will fulfil its aims.

"The investigations conducted by Mr. Lee have already demonstrated to the vaidyas the valuable facts that many of the medicines they prepare from plants contain little active ingredient mixed with much inert substance, while the European system aims at eliminating all the inert substances, leaving the active ingredient of the drug, and that some of the most favourite mineral preparations now administered by the natiue vaidyas are absolutely useless, on account of their insolubility.

"The realisation of these facts cannot fail to be of the greatest benefit to suffering humanity in India, but it is hoped that the work will not stop here, but result in valuable scientific facts connected with bacteriology, sanitation, and other branches of science on which the health of the people depends. In the name of the chiefs assembled I ask your Excellency to be good enough to open this Laboratory with this key and oblige us by keeping it as a memento of the occasion."

After distributing the prizes to the students his Excellency said :—

"Your Highnesses and chiefs, ladies and gentlemen.—This is another of the many institutions in Rajkote for which we are indebted to the open-handedness of an individual chief. The building is the gift of Azam Laxmon Wala, who contributed Rs. 30,000 for this purpose, and its equipment has been provided from the State Joint Fund. This is an interesting occasion for I know of no similar institution having the same objects in view in India. It gives opportunities for inquiry, experiment, and thought, the results of which, while they cannot fail to be of interest must also be fertile in usefulness. As you have heard, the object for which this building has been primarily founded is for improving the practice of native medicine and for making known valuable Indian remedies to Western science, and also to ascertain which native herbs may be made more adaptable to Western science, and it is hoped that eventually it may further the progress of bacteriology and sanitary science. I am glad to see this effort made. The States have progressed in their administrations, great strides have been made in their judicial revenue and educational departments in places various works have been carried out and institutions built for the welfare of the people and now the States themselves enter in the field of science.

"Certain States have already with commendable alacrity shown themselves anxious to take advantage of the opportunities afforded by this institution, and are paying for students to attend, while it is to be noticed that there are students defraying their own expenses, which points to the recognition of and the interest in the study. The practice of medicine on the European system has hardly got beyond a few large towns, and probably the great majority of the population in the country still depends on the native vaidya and hakim.

"The systems followed by those practitioners have a long history and a considerable literature, and amongst a good deal that to Western notions may seem empirical or even foolish there must be included a large amount of valuable knowledge, especially as regards the properties of indigenous drugs, which may still be imperfectly known to Western men of science. One of the Kathiawar chiefs, the Thakor Sahib, of Gondal, has taken a leading part in the effort to throw light upon the subject, but there is certainly room for inquiry and experiment of the kind for which this laboratory will give the first opportunities. This is a new departure in the field of research, and in this direction I look for opportunities for immense development owing to a scheme which is under consideration, and which owes inception to the great munificence of Mr. Jamsetjee Tata, of Bombay. The way in which this particular scheme was started, was very business-like. While the building was under construction, the director was employed, and classes formed, and a term's good work has been got through. I congratulate the States on being pioneers in this direction, and express our gratitude to the donor for his generous gift."

His Excellency was then presented with "Pan and attar," and garlanded by Azam Laxmon Meram, after which his Excellency formally opened the Laboratory and inspected the building, where the chemical and pharmaceutical apparatus exhibited was explained by the Director.

The proceedings then terminated.

ACTION OF FORMOL ON DIGESTION.—In order to determine the degree of interference which formol may exert upon the process of digestion, Linossier has experimented with that body and the various organic ferments which exists in the human body. He finds that it exerts a certain retarding action with all, but except in the case of the digestion of albuminoids by the pancreatic secretion, the action is very slight. The action of the saliva, of the gastric secretion, and of amylolytic ferment of the pancreas is not sensibly affected except by larger quantities of formol than would be introduced into the digestive system to produce antisepsis.—*Bull. Gen. de Therap.*, CXXXV., 81.

FORMULÆ, METHODS, AND REACTIONS, KNOWN BY THE NAMES OF THEIR AUTHORS.

(Supplementary List.)*

Bruecke (Berlin Blue Injection Mass).—The precipitate resulting on adding an aqueous solution of ferric chloride (5 p. c.) to an aqueous solution of potassium ferrocyanide (10 p. c.) is washed until the water begins to run off blue, then dried. Or, solutions of ferric chloride (10 p. c.) and potassium ferrocyanide (20 p. c.) are separately mixed with twice their volume of a cold saturated solution of sodium sulphate, then mixed as before. In either case a concentrated solution is made of the washed and dried Berlin blue, and just sufficient gelatin added to form a jelly when cold. The injection should be used at 60° C., and the injected material must be hardened in alcohol 94 p. c. Clear sections from the material with resinous turpentine, prepared by exposure to air in large vessels, stain with carmine if desired, and avoid glycerin for mounting.

Brueeke (Proteids).—Boiling 10 p. c. potassium iodide solution is saturated with freshly precipitated mercuric iodide, and filtered when cold; in solutions acidulated with hydrochloric acid, proteids are precipitated on the addition of this reagent. Compare Tanret's reagent and Oliver's test paper.

Brueeke (Red Injection Fluid).—A concentrated solution of potassium ferroeyanide is followed by a similar solution of eopper sulphate.

Bruecke (Urea).—A erystalline deposit is produced on heating the alcoholic extract with a little amylic alcohol, filtering and adding a solution of oxalic acid in amylic alcohol.

Brunner (Nitrobenzol).—A red colour is produced on adding potash solution, alcohol and a little sulphur to nitrobenzol.

Brunner (Picric Acid).—A woollen thread immersed in a liquid containing picric acid, then rinsed lightly in water and extracted with ammonia, is coloured red with potassium cyanide solution.

Brunner (Sulphur).—A reddish colour is produeed on mixing ulphur with potash solution and adding a few drops of nitrobenzol and alcohol.

Buehheister (Olive Oil).—This test depends upon the colour reactions following the addition to olive oil of equal parts of nitric and sulphuric acids. See also Boudet's test.

Buehner (Jalap-Scammony).—On dissolving jalap and scammony resins in diluted potash or soda solution, then heating and filtering the product, no preeipitate and only a slight opalescence should be produced on adding dilutcd sulphuric acid in excess.

Budge (Asphaltum Injection Mass).—Cover asphaltum with benzene, and allow to stand for several days, then preserve for use. Before injecting, add 30 to 50 p. c. of benzene, and filter. Chloroform or turpentine may be used instead of benzene.

Bunsen (Phosphoric Acid).—The presence of phosphoric acid in minerals is indicated by the formation of phosphoretted hydrogen on fusing the minerals with sodium and moistening with water.

Buseh (Decalcification of Bone).—Dilute 1 volume of pure nitric acid (s.g. 1·25) with ten volumes of water, for decalcifying large and tough bones; for young bones dilute to 1 p. c. The bones are treated with 95 per cent. alcohol for 3 days, then in the nitric acid for 8 or 10 days, the latter being changed daily. As soon as decalcification is complete, wash for 1 or 2 hours in running water, then immerse in 95 p. c. alcohol, which should be changed after a few days. Young and fœtal bones may be treated first with a solution containing 1 p. c. of potassium bichromate and 0·1 p. c. of chromic acid; then decalcified with 1 or 2 p. c. nitric acid, to which 1 p. c. of potassium bichromate or 0·1 p. c. of chromic acid has been added. Then place in spirit.

Buseh (Staining Bone).—Sections of decalcified bone are stained for 5 or 10 minutes in a weak aqueous solution of eosin, which may be preceded or followed by hæmatoxylin, then dehydrated in absolute alcohol, and mounted without cleaning in benzene-balsam.

Busse (Bombay Mace).—Strips of white filter paper are immersed in an alcoholic extract of the mace for 30 minutes, then plunged in saturated baryta water which has been quickly heated to boiling; they are then removed and dried on filter paper. With Bombay mace the dry strips assume a bright red colour; true Banda mace gives a brownish-yellow tint, the under side of the paper being pale reddish-brown. Papua mace gives colours resembling the Banda variety, but less intense.

Busse (Celloidin Solutions).—The three successive baths are prepared by dissolving 10 parts of celloidin in 150, 105, and 80 parts respectively of a mixture of equal parts of ether and absolute alcohol. See Elsching's solution.

Cadet (Arsenic).—The eharacteristie odour of kakodyl ean be detected on heating with sodium acetate.

Caillian (Glucose).—On shaking urine with half its volume of chloroform, and allowing to stand, any glucose present will be found in the upper layer.

Cailletet (Tartaric and Citric Acids).—A saturated solution of potassium bichromate is poured upon a crystal of the acid. Pur eitric acid slowly develops a brownish zone, while if tartaric acid be prosent the colour is violet or black.

Calvert (Fixed Oils).—Characteristic colour reactions are produced on shaking fixed oils with one fifth their bulk of nitric or sulphuric acid of varying strengths, and putting aside for five or ten minutes. A mixture of the strong acids (equal parts) may also be used, and when nitric acid is used alone, an excess of soda solution may or may not be used subsequently. Other variations of the test involve the use of syrupy phosphoric acid, nitro-hydrochloric acid, followed by excess of soda solution; a mixture of equal volumes of water, nitric acid and sulphuric acid; or 1 volume of soda solution may be added to 4 volumes of oil, prior to boiling.

Camoin (Sesame Oil).—This reaction is identical with Baudoin's test.

Campani (Copper).—A yellow to orange-red precipitate is thrown down if copper be present on adding a mixture of solution of glucose with lead subacetate solution.

Campani (Manganese).—Ashes containing manganese are exhausted with hot water and boiled with a mixture of nitric acid, 85 volumes, and phosphoric acid, 15 volumes. On evaporating the clear liquid to dryness, taking up the residue with hydrochloric acid, and again evaporating to dryness, an amethyst colour is produced.

Campani (Potassium Salts).—This is bismuth-sodium-thiosulphate. It is obtained by dissolving bismuth subnitrate, 1, in the smallest possible quantity of hydrochloric acid, and adding sodium thiosulphate, 1. In aqueous solution potassium salts give with this reagent a yellow precipitate insoluble in alcohol.

Capranika (Guanine).—With solutions containing guanine, picric acid gives yellow, concentrated potassium chromate an orange red, and potassium ferricyanide a brown precipitate.

Cappagnoli (Glucose).—In this test, according to Wilder, a blue colour is produced on adding a solution of copper hydroxide in potash solution.

* After Wilder, Schneider, Altschul, etc. Continued from last volume p. 593.

Carey Lea (Hydrocyanic Acid and Cyanides).—This reagent consists of a solution of ferrous-ammonio-sulphate, 1 ; uranium nitrate, 1 ; in water, 240 or 250. It gives a purple red coloration or precipitate with hydrocyanic acid or its salts. Add 2 drops of the suspected liquid, on a porcelain slab, to 2 drops of the test solution, so that the two liquids just touch each other.

Carey Lea (Gelatin).—A red colour is produced with acid solution of mercuric nitrate.

Carey Lea (Iodine).—A bluish colour is produced on adding starch paste, stirring well, then adding a drop of dilute solution of potassium bichromate and a few drops of hydrochloric acid.

Carey Lea (Hyposulphites).—A rose-red to scarlet colour is produced on boiling with a few drops of a solution of ruthenium chloride in presence of ammonia.

Carnoy (Hardening Solution).—This consists of chromic acid solution (2 p.c.), 45 ; osmic acid solution (2 p.c.), 16 ; acetic acid, 3.

Caro Fischer (Sulphuretted Hydrogen).—This reagent is para-amido-dimethylaniline sulphate. To the fluid to be tested 1/50th of its weight of strong hydrochloric acid is added and a few particles of the sulphate, followed by a few drops of dilute ferric chloride solution. In the presence of a sulphuretted hydrogen methylene blue is formed, which is at once evident from its characteristic colour.

Casali (Biliary Matter).—Various colours are produced on precipitating urine containing biliary matter with solution of lead acetate and ammonia, extracting with ether and hydrochloric acid, evaporating the ethereal layer and adding oxidising agents.

Casamajor (Glucose).—Methyl alcohol causes a cloudy appearance.

Casoria (Water in Alcohol).—Absolute alcohol does not affect the colour of dehydrated copper sulphate, but if water be present the salt turns blue.

Cazeneuve-Cotton (Methyl Alcohol).—Distil several fractions of the suspected spirit and add to each 1 C.c. of potassium permanganate solution (0·5 p. c.). If free from methyl alcohol only the first two fractions immediately reduce the colour.

Chantard (Acetone in Urine).—Distil 200 C.c. of urine and test the first 15 C.c. with decolorised magenta solution, made by mixing 30 C.c. of magenta solution (1 in 1000), 20 C.c. of saturated sodium bisulphite solution, 3 C.c. of strong sulphuric acid, and 200 C.c. of water.

Chancel (Fuchsine).—Wine coloured with fuchsine retains its colour after heating 10 C.c. with 3 C.c. of lead subacetate solution (1 : 20) and filtering. Acidify the red filtrate with acetic acid, take up the colour with fusel oil, and identify.

Chapman-Smith (Tartaric and Citric Acids).—On boiling with a strongly alkaline solution of potassium permanganate, tartaric acid reduces it at once, but with citric acid the green colour remains.

Chatard (Nitrous Acid).—A distinct odour of carbolic acid is apparent on evaporating a solution of nitrous acid nearly to dryness and rubbing with a few drops of aniline sulphate solution.

Chatin-Gaultier de Claubry (Iodine).—A blue to violet colour is produced on adding starch, together with a mixture of nitric acid, 1 volume, and sulphuric acid, 6 volumes.

Chevreul (Ammonia).—The red colour of hæmatoxylin paper is changed to violet by ammonia.

Chiappe (Mineral Acids in Vinegar).—The colour of methyl violet is changed to ultramarine blue on adding to vinegar containing mineral acids.

Ciamician-Magnanini (Skatol).—On heating skatol with sulphuric acid a bright purple red colour is developed.

Clark (Creosote-Phenol).—On boiling with excess of nitric acid till red fumes are no longer evolved, then neutralising with potash solution, carbolic acid forms yellow crystals, but creosote does not.

Claus (Water).—Anthraquinone and sodium amalgam, moistened with alcohol containing water, give a red colour. Absolute alcohol produces a green colour.

Clowes' (Inflammable Gas).—This test serves for detecting and measuring small amounts of inflammable gases or vapours in air, which must be less than the least explosive proportion. A hydrogen flame, 10 Mm. in height, is burnt in the atmosphere under examination ; the "cap" or pale flame surmounting and surrounding the hydrogen flame, and seen in a darkened space against a dead-black background, serves as an indication of gas or vapour ; and the height of the cap can be directly translated into percentages by the tables published by the inventor in his text-book, the 'Detection and Measurement of Inflammable Gas and Vapour in the Air.'

Codina-Laenglin (Olive Oil).—Characteristic colour reactions are produced on adding to 3 Gm. of olive oil, 1 Gm. of dilute nitric acid—prepared by diluting acid of s. g. 1·33 with one-third its bulk of water—and heating on a water bath.

Cohen (Albumin).—This is a solution of bismuth-potassium-iodide. It precipitates albumin and alkaloids from acid solutions (see Dragmendorff's reagent).

Cohen (Culture Solutions).—One form of culture solution for bacteria consists of water, 200 C.c. ; ammonium tartrate, 2 Gm. ; potassium phosphate, 2 Gm ; magnesium sulphate, 0·1 Gm. ; tricalcic phosphate, 0·1 Gm. Another formula (Cohen's normal solution) consists of distilled water, 200 C.c. ; potassium acid phosphate, 1 Gm. ; magnesium sulphate 1 Gm. ; ammonium tartrate 2 Gm., and calcium chloride 0·1 Gm.

Conroy (Cottonseed Oil).—In this modification of Bechi's test the test solution contains silver nitrate, 5, nitric acid (s. g. 1·42), 1, rectified spirit, 100. Melt the lard, pour 10 Gm. into a dry tube, add 2 C.c. of the test solution, and immerse the tube in a beaker of boiling water for 5 minutes. Pure lard remains white, but a brownish coloration is given with as little as 1 p. c. of cottonseed oil.

Conroy (Olive Oil).—Heat 9 volumes of the oil with 1 volume of nitric acid (s. g. 1·42), and note the colour and consistence of the mixture.

Corne (Iodates).—On adding starch and water, in which phosphorus has been kept, to iodides containing iodates, a blue colour is produced.

Cotton (Brucine).—A violet to green coloration is produced on adding excess of sodium sulphydrate solution to a warm solution of brucine in nitric acid.

Cotton-Cazeneuve (Methyl Alcohol).—See Cazeneuve-Cotton.

Couerbe (Narcotine).—A blood-red colour is produced on heating with sulphuric acid.

Cresti (Copper).—Place a zinc-platinum element, formed of two wires, in the liquid suspected to contain copper ; on removing the platinum wire, rinse with water and expose for a moment to the action of hydrobromic acid and bromine vapours, produced by heating potassium bromide with sulphuric acid. A deposit of copper becomes violet.

Crismer (Glucose).—This is a 1 per mille solution of safranin. In testing urine, equal volumes of the urine and normal alkali solution and safranin solution are added. In the presence of sugar the safranin is decolorised. Since each 0·1 per cent. of glucose in urine will discharge the colour from an equal volume of this

safranin test solution the method may be used for approximate quantitative determinations.

Crismer (Indicator).—The indicator for alkalimetry, known as Reazarin, is obtained by adding 45 drops of nitric acid, sp. gr. 1·25, saturated with nitrous acid, to a solution of resorcin, 4 grms., in anhydrous ether, 200 C.c. After standing for two days the crystals which have formed are separated and washed with ether until the washings are coloured blue with ammonia. It gives a red colour with acids and blue with alkalis.

Crismer (Tartaric Acid).—If a trace of tartaric acid be added to a weak solution of ammonium molybdate, followed by one or two drops of hydrogen peroxide, or a trace of sodium peroxide, and the mixture be warmed to 60° C., at first a green colour will develop, which will change to blue.

Crolas and Ducker (Uranium Salts).—A mixture of cochineal, 10, and alum, 10, is macerated with alcohol 60 p. c. for 48 hours, then filtered off. The solution gives a green colour with uranium salts. Malot suggests that it may be used as an indicator for the titration of phosphoric acid.

Crook (Butter).—Pure butter yields a clear liquid on melting 10 grains in a test-tube, adding 30 minims of carbolic acid (Calvert's No. 2, diluted with one-eighth its weight of water), shaking, warming till clear, and allowing to stand. Most other fats form two layers.

Cross and Bevan (Cellulose Solvent).—This is a solution of zinc chloride, 1 part, in concentrated hydrochloric acid 2 parts.

Cunisset (Biliary Matter).—A yellow colour is imparted to chloroform shaken with urine containing biliary matter.

Curtman (Potassium Salts).—A yellow precipitate is produced on adding to a solution of a potassium salt, a solution of 1 part of cobalt nitrate in 10 parts of saturated sodium nitrate solution, acidified with acetic acid.

Czumpelitz (Alkaloids).—Characteristic colour reactions are produced on treating alkaloids with a solution of zinc chloride, 1 Gm., in 60 C.c. of a mixture containing equal parts of hydrochloric acid and water.

BACTERIOLOGICAL NOTES.

The British Institute of Preventive Medicine, a full account of which recently appeared in these columns, has changed its name, and henceforth will be known as the Jenner Institute. The Jenner Memorial Committee decided last Autumn to transfer the funds collected to the Institute, and the Council, in view of this and to permanently commemorate Jenner and his work, agreed to alter the title, the necessary legal formalities for which have now been completed. Mr. Sydney Rowland, M.A., has been elected an assistant-bacteriologist *vice* Mr. Foulerton, who has resigned. In connection with the Jenner Institute, Lord Iveagh's princely gift of £250,000 to its funds cannot be passed over in silence. This amount will establish the Institute on a firm basis, and it is proposed that the building shall be at once enlarged and the original scheme completed, that the sadly inadequate salaries of the staff be increased, and that valuable scholarships and studentships be established. The latter should prove a great incentive to original investigation, and it may be hoped that the Jenner Institute will now take its proper place among similar institutions on the Continent and elsewhere, and that it may become the national home of bacteriology, not only for the British Isles, but for the Empire. Lord Iveagh deserves the gratitude of all men of science.

Some Important Investigations have been made during the past year by Martin and Cherry on the nature of the antagonism between toxin and antitoxin. This antagonism has usually been regarded as a biological one, the cells and tissues being in some way rendered insusceptible to the toxin by the action of the antitoxin. Martin and Cherry now conclude that the interaction between toxin and antitoxin is a chemical one, but that a certain amount of time is necessary for the reaction to be completed. The investigations were carried out by means of a special filter devised by Professor Martin. The pores of a Chamberland filter candle are filled with gelatin; under high pressure it is found that water, salts, sugar, and toxins pass through this filter, whereas proteids, such as albumin and globulin, to which "antitoxin" belongs, do not. By mixing toxin and antitoxin, allowing them to interact, and then filtering through this filter, the filtrate was found to be innocuous, whereas, since toxin passes through, it would have been toxic had not a chemical neutralisation occurred.

The Death of Professor Kanthack, recently announced in the Journal, took place at the early age of 35, and is greatly to be regretted. Professor Kanthack had already won for himself a reputation as a pathologist and bacteriologist, and his loss is a great one. He succeeded Professor Roy in the chair of pathology at Cambridge only last year.

Bacteriology of the Mouth.—Goadby contributes an interesting paper on this subject to the *Transactions of the Odontological Society* (xxx., No. 8, p. 171). A streptococcus, the *S. brevis*, is almost constantly present in the mouth, the diplococci, which are so apparent in cover-glass preparations, developing into this organism on cultivation. A chromogenic bacillus, *B. fluorescens liquefaciens* (*motilis*) was frequently noticed, and a red pigment-producing motile bacillus on five occasions. Micrococci are constantly met with in unclean mouths, the commonest variety being the *M. pyogenes albus*, next the *M. pyogenes citrens*, and least frequent the *M. pyogenes aureus*. The latter being present in only about 7 per cent. of the cases. The mouth bacteria were found to grow best on alkaline media containing gelatin, the amount of alkalinity being 1 per cent. of normal caustic soda solution (*i.e.*, 10 c c. to the litre). By the use of a potato gelatin the author was able to isolate and cultivate the well-known spirillum of the mouth *Spirillum sputugenum*. This medium was made by extracting one kilogram of raw potato with a litre of water for two hours, adding gelatin (presumably 10 per cent.), and boiling, clearing with white of egg, neutralising and adding 1 per cent. of normal caustic soda. So isolated this spirillum has many points of resemblance to the Koch spirillum of cholera. It is very motile and possesses a single terminal flagellum, gives the cholera-red reaction and slowly liquefies gelatin. It clots milk and produces a considerable amount of acid in the course of its growth. Another organism, the *Bacillus maximus buccalis*, was also isolated and studied, and is perhaps identical with the *Leptothrix buccalis maxima* of Miller. It forms thick jointed rods 1-1·5μ broad and 10-20μ long. The individual segments average 1·4μ long; it stains by Gram's method, is motile, possessing two terminal and four lateral flagella, and forms spores. It forms on agar a brownish-grey streak, with regularly defined wavy edges and ground glass appearance. Gelatin is rapidly liquefied. Incidentally it was noted that potassium sulphocyanide up to 0·5 per cent. had no inhibitory action on the growth of the organisms of the mouth. This observation is of some interest, as potassium sulphocyanide is a normal constituent of the saliva and an antiseptic action has been attributed to it.

NEW TONING BATH FOR GELATINO-CHLORIDE PAPER.

Since gelatino-chloride paper was introduced it has gone a long way towards upsetting the supremacy of the albuminised paper print for the ordinary work of the commercial photographer, and it has completely taken the place of it with amateurs. The superiority of gelatino-chloride over albuminised paper in most respects is undoubted, but in one respect, at least, albuminised paper more than holds its own, and that is in the tone of the finished print. The word tone is here used in its photographic sense, and refers to the tint or gradation of tints which the reduced silver of the image takes under the action of the toning bath.

That prints on gelatino-chloride are occasionally to be met with in which there is nothing to complain even in this direction is true, but they are very few and far between. When that extremely offensive condition which we know as "double toning" is absent there is generally something in the colour of the image which strikes a jarring note. As often as not the lighter tones of the print are distinctly blue, and that is fatal. If the professional fails there is no difficulty in understanding how it is the amateur manages to produce such startling results, and the suggestion of any method of working that shows a prospect of giving us better results is worthy of consideration.

It should be pointed out that double toning is not peculiar to gelatino-chloride paper. Any silver paper toned with gold is liable to it, but next to gelatino-chloride paper it is most frequently observed with albuminised paper, but even in that case it is but rarely found to a marked extent. One has only to examine critically a first-rate albumin print, however, to realise that the lighter half tones and the shadows are not the same tint, the half tones are cooler in colour than the shadows and the gradation is from warm or cool grey to brown-purple or black. Double toning is not a defect in itself. It becomes so when it is sufficiently marked to be obtrusive.

Even with a slight modification of ordinary methods, double toning may be greatly reduced. Using the sulphocyanide bath, for instance, if salt be added to the bath, say 3 gr. to 300 C.c. of bath, and the prints to be toned be plunged in without washing, there will be but little tendency to double toning, though practically the best way in practice is to soak the prints in a preliminary bath of salt and water until the tendency to curl is removed, and thence remove them to the toning bath. A still further improvement in practice is to add to the toning bath potassic-chloro-platinite, to the extent of one-tenth of the gold chloride present. With a matured bath prepared this way it seems almost impossible to get double tones. Salt is to be used as before. The platinum salt in this bath may be presumed to have no toning action whatever. Its action is as a reducer of gold.

A new toning bath, which it is the purpose of this article to describe, was introduced at a recent meeting of the London and Provincial Photographic Association. After recounting the disadvantages of existing methods of toning, Mr. A. L. Henderson said his process was based upon the use of soda formate, and it might be applied either to a combined fixing and toning bath, or separate baths might be used. He found he obtained pure whites, and there was a complete absence of double tones. For separate baths he had tentatively fixed the formula at 20 grains formate of soda and 1 grain chloride of gold to 10 ozs. of water. The bath was made slightly alkaline with carbonate of soda. He immersed the prints in salt and water, rinsed them in plain water, and placed them in the toning bath. A modification, in which the gold was replaced by the same quantity of bichloride of platinum, was also successfully used, the bath in this case being made slightly acid with formic acid. A considerable number of prints were passed round, and they were admirable. At the same meeting Mr. A. Haddon, who has witnessed some of Mr. Henderson's experiments and had subsequently experimented on his own account, showed some of his results, both with gold and platinum toning. He had adhered to the formula for gold, but had compounded his platinum bath 30 grs. formate of soda, 1 grain gold, 10 ozs. of water, with 6 or 8 drops of formic acid added. His results, too, were very fine. It must be added that, at a subsequent meeting, Mr. Henderson stated that he had found that with a bath of formate of soda and hypo.—no gold or platinum being present—he could tone prints, but that is simply an argument against the use of the combined bath.

Others have since succeeded, working on the same lines, but before any process can be pronounced a success it must be tried on a wider basis than an experimental one. If this process bears out its promise—and it promises exceedingly well—and if the good results that have been obtained are due as much to the process itself as to the skill of those who have so far been the only experimenters, and who would succeed in any process where success is possible, Mr. Henderson deserves the gratitude of photographers for so freely giving to the world the results of his labours.

FIXING AND IMBEDDING LICHENS.*

BY GEORGE J. PIERCE,

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For many years lichens have been studied by descriptive and systematic botanists mainly. Although a few morphologists and physiologists have made important contributions to our knowledge of these interesting associations of organisms, the great number of problems in plant morphology and physiology to which the study of more rapidly growing, larger, and simpler structures promised a speedier solution, have caused the lichens to be more or less ignored by investigators. When any attempts to study them have been made, various technical and other difficulties have tended to discourage the investigator. The excessively slow growth of lichens not only tries one's patience, but it also very greatly increases the danger of culture experiments becoming failures through the invasion of the more prolific bacteria and moulds.

Even the study of their microscopic anatomy is attended with unusual difficulty, and comparatively seldom, if at all, have modern histological methods been applied to them. Yet the careful study of their minute structure would not only settle the disputed points as to the nature of the lichen association and the reproductive parts, but would suggest and prepare the way for physiological studies of no slight importance. Since De Barry and Schwendener convinced botanists (and even the "lichenologists") that lichens are composed of two very different kinds of plants, green or blue-green algæ, capable of manufacturing their own food from inorganic materials, and fungi, absolutely dependent upon already prepared food, there has been no agreement as to whether, as Reinke claims, these associations are sufficiently intimate and independent to justify their being autonomous; or whether, as many believe, they are composed of two kinds of plants mutually benefited by being associated; or, again, whether the association is simply that of host and parasite. Careful study of the structure of these associations, and culture of experiments upon the component organisms, will settle the question.

For the study of lichen structure, I have found proper fixing and careful imbedding to be indispensable. I have been most successful with a concentrated (or saturated) solution of corrosive sublimate in 35 per cent. alcohol. This I use hot, which secures very rapid penetration, killing, and fixing, during and after which no contraction need take place. If the lichen material is air dry, but still alive, it should be thoroughly wetted and kept moist for two or three days, and then small pieces only should be put into the hot fixing agent, in which they will promptly sink to the bottom, where they may be left for a suitable length of time (from five minutes to half an hour). Slow dehydration in the alcohols, using five or six grades and comparatively large volumes in proportion to the size of the objects, will secure the removal of the last traces of corrosive sublimate.

After absolute alcohol, alcohol-xylol (equal parts), and pure xylol (xylene), imbedding may be begun. For many lichens a harder grade of paraffin must be used than for most vegetable structures. A mixture of hard and soft paraffin, which melts at about 60° C., is to be recommended. To the pure xylol in which the material has already become clear, small pieces of paraffin may be added, keeping the dish warm at the same time, both to increase the solvent power of the xylol and also gradually and finally to evaporate it all. By this means the material is slowly warmed and penetrated with paraffin. After remaining in melted paraffin absolutely free from xylol for three hours, the objects may be imbedded. The sections should be very thin, and before cutting the block should be chilled to somewhat below 20° C. The microtome knife or razor must be very hard, sharp, and rigid, for the material is now brittle to a greater degree than most plant tissues. Staining on the slide by any of the usual methods is easy and the results satisfactory.

* From the *Journal of Applied Microscopy.*

THE STUDENTS' PAGE.

EXPLANATORY NOTES ON THE B.P. 1898.*

Hypodermic Injections.—Distilled water collected and stored without special precautions is never sterile. It contains micro-organisms derived from the air and the appliances with which it is brought in contact. These organisms increase very slowly or not at all in good distilled water, owing to the scanty amount of nutrient materials available for their development. Even here, however, they sometimes increase in number, forming colonies or mycelia, which give the water a cloudy appearance and bad odour. Their increase takes place rapidly if organic substances capable of being used for their nourishment are dissolved in the water. Weak solutions of sugar, or organic salts, alkaloids, and particularly complex organic mixtures, like extract of ergot, favour their development. This is, of course, accompanied by destruction of the added organic substances, and the formation of metabolic or excretory substance, derived therefrom, having in many cases an injurious or irritant action on the tissues when injected hypodermically. Even if the injurious effects are not marked, the strength of such solutions will have been diminished by the consumption of the dissolved substances. The micro-organisms in distilled water prepared under ordinary laboratory conditions will (except in extremely rare cases where infection with specific disease organisms may have taken place) belong to the non-pathogenic class; hence the comparatively small number to be found in a few minims of freshly distilled water are not of much importance. A hypodermic injection made with such water is, however, liable to the deterioration already described. For this reason it is desirable to destroy the organisms present in the water before using it as a vehicle for injections, and protect the finished product from the access of fresh organisms during the time it is kept. In order to sterilise the water (*i.e.*, to kill the micro-organisms contained in it) used for preparing the four official hypodermic injections, the Pharmacopœia directs that it shall be previously boiled. No time is stated for the duration of the boiling, but three to five minutes is practically sufficient. The best plan to adopt is to place in a flask considerably more water than is required for the actual volume of injection to be prepared. The neck of the flask should be plugged with cotton wool uniformly and fairly tightly packed to the depth of about one inch. During the ebullition the plug allows steam to escape, and prevents the entry of organisms from the air during the subsequent period of cooling. All the utensils, after being thoroughly cleansed in the ordinary way, as well as the bottle intended for the reception of the injection, should be rinsed with some sterilised water taken from the flask, in order to diminish the risk of infection as much as possible. An injection prepared in this manner will be found to remain good much longer than one prepared without the precautions indicated. Unavoidable opportunities of infection will of course occur each time the containing vessel is opened. Antiseptic substances, which are either toxic or have an irritant action upon the subcutaneous tissues, can obviously only be applied here to a limited extent for preservative purposes. Note carefully the alterations in the strengths of injections of morphine and apomorphine.

Linimentum Sinapis.—The term "compositum" has been removed and the ethereal extract of mezereon omitted from the formula.

Linimentum Hydrargyri.—The solution of ammonia has been replaced by an equivalent quantity of the strong solution.

Linimentum Saponis.—Hard soap is replaced by soft soap.

Liquor Pancreatis.—The pancreas contains probably several distinct ferments. Pancreatic extracts possess a three-fold action. They convert starch into sugar, saponify fats, and digest proteids. Although ferments are insoluble in strong alcohol, the *weak* alcoholic menstruum adopted in the Pharmacopœia is capable of yielding an active product. The proportion of alcohol present acts as an antiseptic, and the preparation keeps well if made and stored carefully. The pancreas is sometimes called "sweetbread," but, in obtaining it from the slaughter-house, care should be taken lest there be confusion of terms. The "sweetbread" which is eaten as a table delicacy is the organ known to anatomists as the "thymus," and the butcher distinguishes it as the throat-sweetbread, or more shortly as throat-bread, while the pancreas is called the body-sweetbread. Owing to its tough and stringy nature, the pancreas is of inferior value to the thymus as a food substance. Its disintegration in making the liquor is assisted by adding gritty substances. The distinguishing feature of pancreatic as compared to peptic digestion is the reaction of the digestion fluid, pancreatic requiring an alkaline medium, while peptic digestion is only manifested in an acid medium. This property of pancreatin makes it valuable as a digestive agent for milk. Milk is "curdled" by the addition of acids, the curds being composed not only of the casein, but also the fat-globules. The official test of the activity of liquor pancreatis depends upon the peptonisation of the milk. The casein should be converted into peptones or allied bodies which are not precipitated by acids.

Liquor Thyroidei.—In preparing this the utmost cleanliness is required to obtain a liquor which will keep sweet. The official menstruum is much inferior in keeping properties to one composed of equal volumes of glycerin and water, and containing 1 in 400 of chloroform. The thyroid is composed of two dark plum-coloured lobes lying close to the trachea, one on each side, and connected by a narrow bridge of similar tissue. In excising them it is usually more convenient to remove the lobes separately, hence the necessity for the reference in the official directions—"for each entire gland (consisting of two lobes)." Do not confuse the thyroid with the thymus (*vide supra* notes on Liquor Pancreatis). When making the liquor the hands of the operator should be well scrubbed with a liberal supply of soap, and the utensils employed may be cleansed by well rinsing them with freshly boiled water or sterilised by immersion for a few minutes in boiling water, afterwards allowing them to cool just before they are required.

Liquor Picis Carbonis.—The aromatic substances extracted by strong alcohol from coal tar, and to which the antiseptic and germicidal effects of this liquor are chiefly due, are mostly precipitated when the alcoholic solution is diluted with water. The precipitate is at first milky, but soon collects into drops and separates from the water. If, however, the extraction be made with tincture of quillaia, the liquor diluted with water *remains* milky, the saponin of the quillaia emulsifying the precipitated substances. This is important, since liquor picis carbonis is used diluted with water as a lotion.

Liquor Ethyl Nitritis.—Ethyl nitrite boils under normal pressure at 17° C., hence the necessity for preparing it at low temperature. Alcohol and sulphuric acid are diluted with water, and the mixture cooled in ice or ice and salt. A solution of sodium nitrite also previously cooled is added very slowly, the reaction vessel being surrounded by a freezing mixture. The ethyl nitrite rises to the surface of the fluid, since its specific gravity at 15·5° C. is 0·900. The ethereal layer is separated, washed with a little water, and dried by contact (still at a low temperature) with calcium chloride. The product is then weighed, or measured, and its weight calculated from its specific gravity, and added to the necessary quantity of the solvent mixture of alcohol and water.

$$\text{(i.)}\ NaNO_2 + H_2SO_4 = NaHSO_4 + HNO_2.$$
$$\text{(ii.)}\ HNO_2 + C_2H_5OH = C_2H_5NO_2 + H_2O.$$

Ethyl nitrite in contact with water or alcohol containing water undergoes hydrolysis.

$$C_2H_5NO_2 + H_2O = C_2H_5OH + HNO_2,$$

hence the selection of a solvent as free as possible from water in making the liquor. Owing to the low boiling point of ethyl nitrite the liquor should be kept as cool as possible and in small bottles to avoid the loss which results each time the containing vessel is opened. From the following equation the student should verify for himself the statements concerning the proportion of ethyl nitrite contained in the liquor:—

$$C_2H_5NO_2 + H_2SO_4 + KI = C_2H_5OH + KHSO_4 + NO + I.$$

The equation shows that 22·32 litres of nitric oxide measured at 0° C. and 760 Mm. pressure, will be obtained from 65 grammes of ethyl nitrite. The Pharmacopœia requirements are that each C.c. of liquor, weighing 0·82 gramme, shall yield 7·6 C.c. of nitric oxide at 15·5° C. and 760 Mm. pressure.

* Note.—This series of articles should be read in conjunction with the series referring to the 1885 B.P., and published in the *P.J.* during 1897-8.

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POISON REGULATIONS.

PREVENTION of the danger of poisoning being such a prominent feature of the Pharmacy Act, 1868, the provisions of Sections 1 and 15 prescribing regulations for the keeping, dispensing, and selling of poisons, and as to the observance of such regulations, may reasonably be regarded as indicating an intention on the part of the Legislature to enable the Pharmaceutical Society to exercise control over the conduct of that part of the business of legally qualified chemists and druggists. From the further provision enabling all persons in that position to become associated with the Society, the inference may also be drawn that, as regards the entire body, the intention was that the control so exercised might take the form of self-government. In that respect British pharmacists have potential advantages far greater than those of any other country, though unfortunately they have not hitherto been turned to account, and the evils now experienced are the consequence of that neglect. Arguments might be adduced in favour of such a mode of regulating the practice of pharmacy in various respects, with advantage to all concerned, and even a system of inspection might be attended with beneficial results, out-balancing the prejudice with which such a proceeding has generally been regarded. The renewed consideration of the subject of poison regulations at the special general meeting to be held next week will therefore be an important matter, and though it would be unbecoming to take a partisan position in regard to the diversity of opinion on the subject, or to attempt in the least degree to anticipate the result of that meeting, it is nevertheless desirable to direct attention to some differences between conditions existing at the present time and those which prevailed when this subject of regulations was last under consideration, inasmuch as those altered conditions may have a more or less important bearing upon the question to be determined.

In the first place the position of chemists and druggists as persons specially qualified for the exercise of their business is now very different from that held by them shortly after the passing of the Act. The number of persons on the Register of Chemists and Druggists in the year 1871 was nearly thirteen thousand; most of them had been in business on their own account before 1868, and, consequently, they were registered in recognition of their established interest thus acquired. The number of those who had then passed the statutory examination, conducted under supervision of the Privy Council for the purpose of certifying qualification to keep open shop for retailing, dispensing or compounding poisons, and to use, in connection with that business, the title of chemist and druggist, was less than two thousand. Since that time the relative proportion of persons qualified by examination has been very considerably altered, for the total number of persons who had passed the examination up to the end of 1897, was 12,031, and out of the total number of 15,215 persons on the Register at the end of 1897, only 3680 chemists and druggists then appeared on the Register as having been in business before 1868. But, notwithstanding this considerable increase in the relative number of examined chemists and druggists, the intended limitation of the business to such legally qualified persons has meanwhile been very largely counteracted by the formation of companies which, being incorporated under the Limited Liability Act, are held to be outside the scope of the Pharmacy Act and able, on that account, to carry on business as chemists and druggists throughout the country without qualification. Other differences presented by existing conditions, as compared with the past, have been brought about by recent judicial interpretations of various provisions of the Pharmacy Act. Thus it is now held that the legal qualification for selling, dispensing, or compounding, and even for keeping open shop for those purposes, in the sense of actually conducting the business operations, is essentially a personal qualification. It is also held that, so far as ownership of a business is concerned, qualification is necessary only for an individual, but not for a combination of individuals incorporated under the Limited Liability Act. The present signification of the Poison Schedule also differs in some particulars from that formerly accepted; thus, in consequence of the ruling that the sale of a preparation containing a scheduled poison is to be regarded as a sale of that poison, some alteration of procedure is necessary in labelling, etc. Moreover, medicinal preparations containing poison cannot now be made the subject of letters patent, and secret remedies of the kind, improperly called "patent medicines," are now held to be poisons within the meaning of the Act, when they contain a scheduled poison as an ingredient in their composition. Consequently they are lawfully saleable only by a legally qualified person even in a shop belonging to a qualified individual.

These changes, considerable as they have been, were to a great extent unexpected, and they suggest questions of some importance at the present time, as to the extent to which the adoption of compulsory regulations for the keeping, dispensing, and sale of poisons would affect companies of unqualified persons carrying on business under the designation of "drug stores" or "cash chemists." That the adoption of such regulations would be binding upon all legally qualified chemists and druggists is a matter of certainty, and if a business carried on by a company of the kind referred to, is to be held in any way compatible with the object and policy of the Pharmacy Acts, it would be a strange anomaly if regulations did not also apply to the "drug stores" and "cash chemists," held out to the public as the establishments

of legally qualified chemists and druggists. The chief question, perhaps, is as to the mode of operation; whether a company itself would be liable like the qualified proprietor of a chemist's shop, or held exempt on the same principle that a company has been held not to come within the scope of the Pharmacy Act in regard to the sale of poison, also whether the persons actually conducting the business and, in that sense, "keeping" the shop, would not be individually liable to penalty for failure to conform with regulations. In that connection, however, it will be useful to recall the dictum of Lord Blackburn that on the principle of *Qui facit per alium facit per se*, a corporation is not to be held entirely and altogether out of the Act. According to that view a company would be liable for infringement of the Act by any of its agents. If that were not the case the absurdity of the position, as pointed out by the Lord Chancellor and by Lord Herschell, would be so apparent that, as Dr. Symes said at the last Council meeting, there would be good ground for asking the Government to assist in the attempt to obtain a suitable amendment of the law.

THE NEW EXAMINATION SCHEDULE.

A new schedule for the Minor and Major examinations of the Pharmaceutical Society was adopted by the Council at its meeting in December last, and is now published in full (see p. 18), after being edited by the President. A detailed comparison of the old and new schedules will also be found in this week's issue, at page 2 *et seq.* The new schedule will come into force for the October examinations and will not, of course, affect the examinations to be held in April and July next. It will be found that the only changes of importance are in botany, practical chemistry and materia medica, and that many of the alterations are only such as are rendered necessary by the issue of a new Pharmacopœia. At the same time, the standard of the Minor examination will be appreciably raised after September next, approximating more to what that of the Major has been. Apart from everything else, however, the new schedule is much more definite throughout than the existing one, and the requirements of the Boards of Examiners are expressed therein so explicitly by comparison, that the labours of candidates should be considerably lightened in future. It may be considered, therefore, that the alterations, taken as a whole, tend in the direction of simplicity and greater efficiency, particularly as regards the qualifying examination.

In botany a much more thorough acquaintance with classification will be required of Minor candidates, including a practical knowledge of the main divisions of the vegetable kingdom and their most important characteristics, also of the sub-classes of the Angiosperms and of eight natural orders which have been now included in the Major syllabus. Eight plants are added to the list for recognition, but four that appear in the older list are omitted. The knowledge required of the morphology, anatomy, and physiology of plants will not be in excess of that which candidates are expected to possess at present, but the requirements are much more definitely expressed. The use of the microscope will be extended, candidates being expected to recognise and describe sections illustrating the various forms of cells, tissues, etc., and the characteristic anatomical features of roots, stems, and leaves. The requirements in chemistry and physics will remain practically as at present in the Minor examination, the additions to the syllabus being very slight. But more important changes will be effected in the practical chemistry examination. Thus, each candidate will be expected to analyse a mixture containing not more than two metals and two acid radicals; the list of organic compounds to be identified by chemical tests has been revised, and, besides performing volumetric determinations, it will be necessary "to understand the principles of volumetric analysis, and to prepare, standardise, and use volumetric solutions." The quantitative determinations which candidates may be called upon to perform will include those of preparations of belladonna, cinchona, ipecacuanha, jalap, nux vomica, and opium. The new materia medica syllabus is also much more definite than the present one, and the list of crude drugs for recognition has been revised so as to include many that have been but are not now official, whilst several comparatively unimportant drugs are omitted. In connection with pharmacy, dispensing, and prescription reading there is no alteration in the schedule to record, except that the operations candidates will be required to conduct in practical pharmacy are more specifically stated.

The botany of the Major examination will also differ in important respects from what it is at present. Ten natural orders are added to those of which "the characteristic features" must be known, and three are omitted from the existing list, whilst eight, as already stated, have been transferred to the Minor syllabus. No reference is made, as at present, to the fact of candidates being expected to distinguish practically the leading genera of the specified natural orders. Presumably, therefore, they must be acquainted with all the genera. Ability to make and mount microscopical specimens illustrating vegetable structure will be essential, and candidates must also be able "to apply micro-chemical tests for cellulose and its modifications as they exist in the cell-wall, and for the chief products which are formed in plant cells." The chemistry of the Major will be varied only in the practical examination. For example, the candidate must be able, in addition to what is required at present, to determine nitrogen by the Kjeldahl process, to perform processes of gas analysis which can be carried out in a nitrometer, and to detect methyl alcohol in tinctures, liniments and other preparations. The materia medica syllabus of the Major is altered only to the extent of specifying what will be required so far as the use of the microscope is concerned. Candidates must be able "to make and describe microscopical preparations of any organised vegetable drug official in the British Pharmacopœia, and to point out distinctive histological features in the same." They will also be expected "to discover obvious adulterations present in powered drugs, from comparison with authentic material."

Surveying the new schedule as a whole, it will be seen that the alterations undoubtedly tend in the direction of making the qualifying examination a more satisfactory test of fitness for registration as a chemist and druggist. Not that it has ever been other than a satisfactory test, for the schedule in force at any given time has always sufficed for the public needs of that time, but the necessity for raising educational standards at regular intervals is to be seen on every hand. In the present instance, the raising of the standard is for the most part, imperceptible, but both teachers and students will doubtless be glad to be relieved, by better definition, of a certain measure of anxiety with regard to the actual intentions underlying parts of the old schedule that have appeared unnecessarily vague and indefinite.

ANNOTATIONS.

At the Beginning of a New Year it has been customary for the past quarter of a century to review at length in the Journal the work of the previous twelve months in pharmacy and allied subjects. But as this wonderful century has waned the bulk of material requiring treatment has increased to such an extent that our space has yearly been more and more encroached upon, until at length it has been felt undesirable to perpetuate the annual summary any longer. The most weighty argument that presented itself in considering the question of abolishing the summary was that the supply of fresh matter of interest to our readers is now so constant and so great as to render it a positive disadvantage to devote practically one whole number to the repetition of information that has previously appeared in the same pages. Due allowance was also made for the fact that the two indexes to the Journal published yearly—the best and most comprehensive of their kind—are now so full as to reduce to a minimum the trouble of finding the record of anything that has been dealt with in our pages. Whilst, therefore, lengthy summaries of the year's work may fittingly continue to find place in publications which are not kept so well supplied with fresh matter or so well indexed as the *Pharmaceutical Journal*, it is hoped that our readers will gladly acquiesce in a change which has for its object the presentation of fresh rather than twice-told tales.

The Popularity of the Annual Summary during so many years has been sufficiently indicated by that imitation which is generally regarded as the sincerest form of flattery. For, like most other good features of modern pharmaceutical journalism, our lead in the direction referred to has been followed by publications which, whatever their shortcomings in other respects, have been shrewdly developed on lines that appeared likely to attract the co-operation of registered chemists in earning profits for the proprietors of those publications. That is to say, the registered chemists have done the co-operating, and the proprietors referred to have reaped the benefit. Meanwhile, however, the only really independent organ of the drug trade in Great Britain—not a "stores" organ or a multi-official weekly, but the *Pharmaceutical Journal*—has developed steadily on the lines laid down by its founder, and in accordance with the desires of its thousands of proprietors, whose interest in it is something more than a merely pecuniary one. It is more widely circulated in pharmaceutical circles in this country than any other publication and, to quote the words of a correspondent, published a fortnight ago, "there is no need for any pharmacist to subscribe to any other trade paper, for it is as complete as any truly comprehensive pharmacist can wish." Not that the conductors of the Journal entirely endorse Mr. Slinn's remarks, for they have ever before them the desire and intention of doing much more before they regard the paper as even approaching completeness. It is hoped to make it still more useful as a record of pharmaceutical progress, and a greater help in the everyday affairs of the pharmacist's life.

The Year's Programme is not arranged too far ahead, but the bacteriological notes in this week's issue may be referred to as an entirely new feature, and many other special features originated in the Journal will be continued as regularly as the ever-increasing pressure on our space permits. The "Students' Page" will be devoted for the present to a continuation of the explanatory notes on the new Pharmacopœia, the articles on practical pharmacography will appear as frequently as the large amount of work involved will permit, and other special articles for elementary and advanced students may be looked for from time to time. For the rest, events must largely decide how the contents of the Journal shall be made up each week, but the correspondence columns will remain as free as ever; and none are more free, for no other journal refuses to find space for so few properly authenticated letters. Readers who require information of any reasonable description need not be afraid of encroaching unduly upon our space and if, in return, any suggestion for improvement is offered to the Editor or any news of general interest is communicated to him, he will gladly consider the one and find space, if possible, for the other. In particular, members of the Pharmaceutical Society are asked to remember that the Journal is their own property—a property which is capable of wonderful development if the numerous opportunities that offer themselves are sufficiently taken advantage of by its owners. Its success as a weekly newspaper in great measure depends upon them, and if each one will but devote to its improvement a fraction of the attention that he regularly devotes to any other important property in which he is interested, that success will be more than assured.

The Adoption of Poison Regulations is the main question that will come before the Pharmaceutical Society for consideration at the special general meeting to be held on Wednesday afternoon next, but more important than that from the registered chemist's point of view, in the event of the main question being answered in the affirmative, will be the question—What regulations should be adopted? The old view, which has prevailed for the past thirty years, is that so far as regulations are required non-mechanical ones are best, devised by each qualified proprietor of a pharmacy to meet his own particular requirements and not of concern to anyone but himself and his assistants. But the regulations indicated in Sections 1 and 15 of the Pharmacy Act of 1868 were undoubtedly intended to be of general application, and virtually to constitute part of the Act. After many years, therefore, Mr. R. A. Robinson proposes that the recommendations agreed to by the Pharmaceutical Society in 1871 should, in that sense, be formally adopted as regulations. But, in several letters published last week and this, various views have been expressed, some advocating regulations, others urging the inadvisability of haste in dealing with the matter, whilst suggestions for modification of the proposed regulations are also offered.

Mr. B. S. Proctor suggests additions to the first and second recommendations, Mr. J. McMillan objects to the second one as it stands, Mr. N. H. Martin upholds the view which prevailed when the idea of adopting regulations was rejected in 1871, and Mr. Hyslop supports the adoption of regulations as a simple means of rectifying a past mistake. Another correspondent, whose letter is not sent for publication, is of opinion that the adoption of regulations, without any provision being made for inspection, would be imperfect, and that, unless the meeting is prepared to agree to some kind of inspection, it would be better to appoint a committee to deal with the matter and report to an adjourned meeting, say, the annual meeting in May, as suggested by Mr. Martin. There appears to be a not unreasonable desire in the minds of many registered chemists that, as there is no power to rescind regulations when once adopted by the Society and approved by the Privy Council, every possible precaution should be taken, for, though they have been told by more than one prominent pharmacist that the adoption of the 1871 recommendations will not make the

least practical difference to anyone, evidently a certain amount of scepticism still prevails which necessarily requires to be removed.

In Germany the regulations relating to the storage and sale of poisons (see p. 4) are made by the Government, and it is the business of the police authorities in the various towns and country districts to see that they are carried out by all persons specially permitted to deal in poisons, as well as by pharmacists, who are also required to observe the more stringent regulations relating to the practice of pharmacy. The extent of the schedule of poisons presents a remarkable contrast to our own, the three parts into which it is divided containing no less than 145 heads, and as many of them relate to a number of different articles, the total number included in the schedule must amount to several hundred. The articles which the apotheker is required to keep under lock and key and with great care, as enumerated in Table B, at the end of the Arzneibuch, are sixteen in number. The articles which have to be kept carefully and apart from other medicinal agents enumerated in Table C are much more numerous. The regulations applying to articles in Table A relate only to the maximum doses.

When Regulations Clash with Other Regulations much inconvenience may be inflicted upon the persons whose affairs are subject to them and, as a recent case shows, there may be positive danger to the public in the observance of ill-considered regulations. For example, regulations exist which deal with the storage, etc., of petroleum, and more recently the London County Council has adopted a bye-law making it compulsory to carry lights on all vehicles after sunset. A carman was charged at one of the London police courts last week with driving a van after sunset without a light attached; the van contained a large number of empty petroleum barrels, and it was stated in evidence that the owners of the van had given strict orders to their carmen not to carry lamps on account of the danger accruing therefrom. Further, it was contended that the London County Council's recently passed bye-law, under which the summons was issued, conflicted with the special Acts of Parliament dealing with the conveyance and use of petroleum. The danger most to be guarded against consists in the highly inflammable nature of the vapour given off by petroleum, and the strictest precautions have to be taken to prevent explosions, whilst empty barrels are even more dangerous than full ones, and many accidents have been caused by children thoughtlessly throwing lighted matches into empty barrels. A suggestion by the magistrate that all danger would be avoided if the firm sent the vans out in the daytime, was met by the statement that matters could not be arranged so that the vans could return from the outlying districts to the refineries before sunset. It was also submitted that the bye-law is expressly or impliedly contrary to the Statute, that it is unreasonable, and that it is bad in part and good in part. Ultimately, Mr. de Rutzen said he should consider his decision, and he suggested that in the meanwhile summonses pending against the firm at other Courts should be adjourned. For the present, therefore, the confusion persists. But the warning as to the possible effects of compulsory regulations is obvious.

A Perfume Industry, which has been established in Birmingham for some eleven years past, is attracting much attention in the daily papers, chiefly, apparently, because of the seeming inappropriateness of the place selected by the manufacturer—Mr. Herbert H. Barnett—for the conduct of his business operations. A spice of romance is imparted to the story of Mr. Barnett's successful operations by the *Birmingham Weekly Post*, which relates how he received "from a gentleman who had been a partner in one of the most celebrated perfumery establishments in the world," first as a pledge and afterwards as a gift, a manuscript volume of recipes for compounding perfumes. Attaching little value to the book, he showed it to a firm of manufacturing chemists in New Zealand and casually enquired what they would give for it. A sum so large was named that the proprietor concluded the book was worth keeping and studying. Experiments were then initiated, capital was raised, and now a large and well-appointed factory exists in Birmingham for the purpose of manufacturing perfumes.

The List of New Year Honours shows that but scanty regard has been paid to the claims of real merit, appointments and promotions for Government officials and military men constituting the great bulk of the list. Sir Charles Hall, K.C.M.G., M.P., the Recorder of London, is appointed a member of the Privy Council; Sir Henry Thompson, F.R.C.S., becomes a baronet, and Dr. Hermann Weber receives a knighthood. Sir Hugh Owen, late Permanent Secretary to the Local Government Board, and Sir Charles Lennox Peel, formerly clerk to the Privy Council, are both promoted to be G.C.B.; Professor William Chandler Roberts-Austen, F.R.S., chief chemist and assayer at the Royal Mint, is promoted to be K.C.B., and Sir Charles Cameron, chief medical officer of health and analyst for Dublin, is appointed to be C.B. The only other name in the list of honours of interest, to our readers, is that of the Director of the Royal Gardens, Kew, who is promoted to be K.C.M.G. Sir W. T. Thiselton Dyer, who is an honorary member of the Pharmaceutical Society, receives this addition to his numerous distinctions in recognition of services rendered to Colonial Governments.

The Old-Fashioned Apprenticeship in Medicine was the subject of some appropriate remarks by Dr. William Ewart, in a lecture delivered before the Harveian Society a fortnight ago. That apprenticeship, he pointed out, was given up long ago without any equivalent as a substitute, and it is impossible we should ever return to it. Nevertheless, it must be acknowledged that it was a thoroughly practical though primitive method of learning as much about medicine as local opportunities allowed. "When the apprentice came to town he was, for his years, a man of practical experience, and in looking back upon his early difficulties and doubts he could appreciate the value of the theoretical knowledge to be gained in the dissecting room and in the wards." Though the student's supply of scientific knowledge was scanty, his practical experience was considerable, but now the distribution of his work has been completely reversed, the present partial sacrifice of the practical professional studies being an unintended result, due to the desire to cultivate a higher science in the service of medicine. Since, for a long period, the teaching of the sciences must be theoretical, the student now spends his early years in studying practical science in an unpractical way, and when he goes into country practice as a qualified man, he has to undergo the apprenticeship in things practical that formerly preceded theoretical study and qualification.

An Improvement in the Construction of Chemical Balances is described by the *Optician* as having been effected on the suggestion of Professor Witter, of the Hamburg Metallurgical Laboratory, by Mr. R. Hase, of Hanover. The object of the improvement is to mark at once the approximate weight of the substance in the pan. An additional pointer occupies an inclined position and plays over a special graduated arc. This pointer is put in gear by means of a button at the top of the balance case. The substance being put

into one pan and weights in the other, the pointer indicates to within a few centigrammes what weights are still required. The rest of the weighing can be performed easily with the help of the rider only, in the usual fashion. The method is said to be particularly convenient for weighing predetermined quantities. For instance, a platinum dish can be filled while standing on the pan, without arresting the balance until the additional pointer indicates that the weight is almost correct. The addition is said not to complicate the construction of the balance, and to make little difference in the price of the instrument.

The Influence of an Impure Atmosphere upon the vital resistance of animals to the micro-organisms of disease has been investigated by Dr. D. H. Bergey, under the supervision of Drs. J. S. Billings and S. Weir Mitchell, and the record of the experiments is published in the Smithsonian Miscellaneous Collections. Rabbits and guinea-pigs were experimented upon; the micro-organisms used were those of anthrax, streptococcus, diphtheria, and tuberculosis. The impurities in the atmosphere inhaled were carbon dioxide and other products of respiration. The experiments are as yet incomplete, but in the summary of results so far obtained it is stated that though animals had their vitality lowered by inhaling the impure air, they were not thereby rendered more susceptible to the effects of anthrax vaccines, though subsequent inoculation with an attenuated culture of tuberculosis caused the animals to die much earlier than others similarly inoculated but not exposed to an impure atmosphere.

A New System of Incandescent Electric Light, briefly referred to in *Nature*, has been devised by Professor Nernst, of Göttingen, and the light produced is said to require neither vacuum nor tender filaments. The essential point of the invention is that when magnesia is heated above 3000° C. (a temperature far above the melting point of platinum), it becomes a good conductor, and a very weak current is sufficient to keep it in an intensely luminous condition. Either direct or alternating currents may be employed, and the magnesia is little injured by use. The preliminary heating is accomplished by placing the magnesia in the focus of the reflector. On the inner side of the reflector is a spiral wire of platinum, which when brought to incandescence by a current, produces heat sufficient to render the magnesia a conductor; a current is then passed directly through the oxide by the wire, and that in the spiral is shut off. As advantages over the ordinary incandescent lamps, Professor Nernst claims that the same amount of light can be furnished at one-third the cost, and as the magnesia allows of being heated to a much higher degree than a carbon filament a purer light is obtained.

Experimental Chemistry in Board Schools doubtless imparts a great charm to the average boy's scholastic course, but an incident reported by a correspondent, as having occurred this week in a pharmacy in North London, is calculated to cast serious doubt upon the value of the instruction imparted. Of course, it may be that the capacity for assimilation was not properly developed in the hero of the tale. However that may be, the accuracy of the story, as here related, is vouched for. A small boy, ten years of age, attending a Board School in the Islington district, rushed into a chemist's shop greatly excited and asked to be served with a pennyworth of sodium, "Sodium?" queried the chemist, somewhat surprised. "Yes, sir!" "But what are you going to do with it?" "Put it in half a pint of boiling water and set fire to it to make 'Bovril,'" was the prompt reply.

REVIEWS AND NOTICES OF BOOKS.

Notes on Essential Oils. By T. H. W. Idris, F.C.S. Pp. 193. London: Geo. Du Boistel and Co. 1898.

The object of this little work is indicated in the preface. The author in his own laboratory experienced the need for ready reference of some synopsis of the work already done in the chemistry of essential oils, the literature being so scattered in various German, English, and French journals as to be difficult to consult without considerable expenditure of time. The "notes" have, therefore, been prepared with the view of economising the author's own time, and they are published in the hope that they may be useful to other workers at the same subject. The first two chapters relate to the principal constituents of essential oils. Those are arranged under the following heads:—Terpenes, sesquiterpenes, the camphor group, and benzene derivatives. The third chapter is devoted to essential oils, regarded as commercial articles, descriptions being given of their source, physical properties, chemical constituents, methods of analysis and requirements (*i e*, standards of purity).

The first part of the book is exceedingly useful, as it gives a lucid summary of the present state of our knowledge of the chemistry of ordinary essential oils, and the third chapter, comprising two-thirds of the work, will be very handy for reference to the chemist in business and to the aërated water manufacturer who wishes to ensure the good quality of his wares. In comparing the statements of various authorities on the subject of commercial essential oils—*e g*., Schimmel, J. C. Umney, Power, Parry, etc., whose work is duly acknowledged—the author has evidently compared them with the results obtained in his own laboratory, and has expressed an unbiased opinion. Thus he points out, under "Mitcham Lavender Oil," that, although Messrs. Schimmel evidently desire to see the linalyl acetate percentage adopted as a standard of the quality of lavender oil, the Mitcham oil contains much less than the French oil, whilst the Mitcham oil is the more valuable of the two from the perfumer's point of view.

In fact, the book may be regarded as one giving useful practical information on the essential oils, written by a business man for business men, and as such will meet a decided want. Like most books it has a few weak points. In the table of eucalyptus oils the constituents are not so fully given as might have been expected. Thus, the presence of citral in the oil of *Eucalyptus staigeriana* is not mentioned, and the "Table of Constants," which is evidently founded on Schimmel's "Tabelle" in the report of that firm for April, 1897, is by no means so full of information as the latter. The text also evidently needed the oversight of a more careful printer's reader. But the deficiencies referred to by no means invalidate the usefulness of the book, which every chemist in business should add to his desk library.

A Permanent Starch Colour.—The blue coloration obtained in starch with iodine is not permanent. Lagerhelm, therefore, recommends the following process for the preparation of microscopical material. The material is treated with alcohol or eau de Javelle, then well washed and treated with a solution of iodine—composed of water, 15; potassium iodide, 1·5; iodine, 0·5—and again washed out until the blue colour has disappeared. Silver nitrate is now added, the washing repeated, and finally the preparation is immersed in a hydroquinone solution, consisting of water, 100; sodium sulphate, 10; hydroquinone, 2 grammes. One drop of a 10 per cent. carbonate potassium solution for every C.c. is previously added to the solution. The starch should finally be coloured a permanent brown.—*Chemik. Ztg. Repert.*, xxii., 47.

PHARMACEUTICAL SOCIETY.

NEW EXAMINATION SCHEDULE.

At the meeting of the Council of the Pharmaceutical Society, held on Wednesday, December 7, a new schedule for the Minor and Major examinations was unanimously adopted, and it was decided that it should come into force as from September 1, 1899. The text of the new schedule is here given in full and a comparison of the old and new schedules, showing in what the alterations actually consist, will be found at p. 2.

MINOR EXAMINATION.

The following will be the Subjects of Examination after August, 1899 :—

Botany.

The candidate is required to possess a practical knowledge of :—

(*a*) Classification. The main divisions of the vegetable kingdom and their most important characteristics :—Thallophyta, Bryophyta, Pteridophyta, Phanerogamia. The following Subclasses and Natural Orders of the Angiosperms :—Thalamifloræ, Calycifloræ, Corollifloræ, Monochlamydeæ, Petaloideæ, Spadicifloræ, and Glumifloræ ; Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Umbelliferæ, Compositæ, Solanaceæ, Liliaceæ. The description of flowering plants in technical language.

The candidate is also required to recognise any of the plants in the following list :—

*List of Plants for Recognition.**

Aconitum napellus	Datura stramonium	Papaver somniferum
Althæa officinalis	Digitalis purpurea	Pinus sylvestris
Anthemis nobilis	Fœniculum capillaceum	Prunus lauro-cerasus
Aspidium filix-mas	Hordeum distichon	Quercus robur
Atropa belladonna	Hyoscyamus niger	Rosa canina
Avena sativa	Juniperus communis	Rosmarinus officinalis
Brassica alba	,, sabina	Ruta graveolens
,, nigra	Lavandula vera	Salix alba
Bryonia dioica	Matricaria chamomilla	Sambucus nigra
Cochlearia armoracia	Mentha piperita	Solanum dulcamara
Colchicum autumnale	,, pulegium	Taraxacum officinale
Conium maculatum	,, viridis	Taxus baccata
Cytisus scoparius	Menyanthes trifoliata	Triticum vulgare
Daphne laureola	Œnanthe crocata	Ulmus campestris
,, mezereum	Papaver rhœas	Valeriana officinalis

(*b*) Morphology, including Anatomy. The external form of plants :—thallus, stem, root, leaves, inflorescence, flower, fruit. The distinguishing features and common modifications of these structures. Principles of branching and different kinds of branch systems. Phyllotaxis, including vernation. The different kinds of buds and their arrangement on the stem.

A general acquaintance with the elements of plant anatomy ; the vegetable cell, tissues, *e.g.*, merismatic, epidermal, fundamental and vascular. The characteristic anatomical features of roots, stems, and leaves of flowering plants and ferns.

The candidate is expected to recognise, by means of the microscope, and describe sections illustrating the above plant structures.

The method of increase in thickness of stems and roots, and the characters of primary and secondary tissues. The characters of the flowers. The methods of pollination ; self- and cross-fertilisation. The formation of the seed and germination.

(*c*) Physiology. The *elementary facts* in connection with the physiology of plants, including the nature and source of the food of plants and the manner in which the raw materials are elaborated. Chlorophyll, its manner of occurrence in the plant ; its functions and the conditions under which it discharges them. Reserve materials, their nature, mode of deposition, and the manner in which they are utilised by the plant. The manner in which plants grow, and the conditions necessary for the growth of a plant The manner in which plants respond to external stimuli, *e.g.*, light, gravity, etc. Sexual and asexual reproduction.

Chemistry and Physics.

The candidate is expected to possess an *elementary* knowledge of the following subjects :—

(*a*) The law of the conservation of energy ; the law of gravitation ; the balance ; specific gravity ; atmospheric pressure ; pressure of aqueous vapour ; the barometer, air-pump, and siphon ; the law of Boyle ; temperature ; thermometers ; the law of Charles ; the law of gaseous diffusion ; V. Meyer's method for determining vapour densities.

(*b*) The chief characteristics of chemical action, the distinction of elements and compounds ; the laws of chemical combination by weight and volume ; the hypothesis of Avogadro ; atomic weight and molecular weight ; chemical formulæ and nomenclature ; valency ; the distinction between metals and non-metals.

(*c*) The general characters of the non-metals ; the chief methods of preparation and the typical reactions of the following non-metallic elements and compounds :—hydrogen, oxygen, ozone, water, hydrogen peroxide ; chlorine, bromine and iodine, and their compounds with hydrogen and oxygen ; fluorine, hydrofluoric acid ; nitrogen, ammonia, the oxides of nitrogen, nitrous acid, nitric acid ; sulphur, hydrogen sulphide, sulphurous and sulphuric anhydrides and acids, thiosulphuric acid ; phosphorus, phosphine, the oxides and oxy-acids of phosphorus, the chlorides of phosphorus ; silicon, silica, fluoride of silicon, silicofluoric acid ; boron, boric acid. The usual impurities in such of the above-named substances as are included in the British Pharmacopœia.

(*d*) The general characters and classification of the metals, and the general methods of forming oxides and salts ; the sources, the usual methods of extracting, and the chief properties of, the undermentioned metals, also the modes of preparation, properties, adulterations and contaminations of their principal compounds—potassium, sodium, ammonium, lithium, barium, strontium, calcium, magnesium, zinc, aluminium, iron, chromium, manganese, nickel, cobalt, arsenium, antimony, tin, copper, bismuth, lead, silver, mercury, gold and platinum.

(*e*) Carbon, its oxides, cyanogen, hydrocyanic acid, cyanides, ferrocyanides and ferricyanides, oxalic acid. The chief methods of preparing methane, ethane, ethylene, acetylene, methyl and ethyl alcohols, formic and acetic aldehydes and acids, ethyl acetate, acetamide, olein, glycerol, benzene, phenol, nitro-benzene, aniline, benzoic acid, salicylic acid, hydrate of chloral, chloroform, iodoform, ether ; the principal properties, reactions, and mutual relations of these compounds. The candidate will also be expected to possess a general knowledge of the methods of estimating carbon, hydrogen, oxygen and nitrogen in organic compounds, and of obtaining molecular formulæ.

Note.—The candidate is expected to solve simple problems relating to the weight and volume, under different conditions of temperature and pressure, of elements and compounds concerned in chemical reactions.

CHEMISTRY.—Practical Examination.

The candidate is required to determine the specific gravity of liquids and solids, and to be familiar with the general construction and use of the thermometer and barometer.

To recognise by chemical tests the more important non-metallic elements and compounds, as well as the metals and salts indicated in the foregoing list ; to detect the chief impurities in those that are included in the British Pharmacopœia ; to recognise by their physical properties those which possess well-defined characteristics. To analyse a mixture containing not more than two metals and two acid radicals.

To identify by chemical tests the following organic compounds : hydrocyanic acid, cyanides, ferrocyanides, ferricyanides, oxalates, acetates, tartrates, citrates, salicylates ; starch, cane sugar, grape sugar, salicin ; quinine, morphine, strychnine, and their salts ; and to detect the impurities in such as are included in the British Pharmacopœia.

To perform those volumetric determinations which are described in the British Pharmacopœia To understand the principles of volumetric analysis, and to prepare, standardise, and use volumetric solutions.

To be familiar with the construction and use of the balance, and to have a practical knowledge of the Imperial and Metric Systems of Weights and Measures.

To quantitatively determine the total alkaloids in cinchona bark, and its official preparations, in the liquid extract of belladonna and its preparations, and in the liquid extract of ipecacuanha ; also the strychnine in the extract, liquid extract, and tincture of nux vomica ; the morphine in opium and its extract, liquid extract and tincture ; and the resin in tincture of jalap.

To have a practical acquaintance with the methods of preparing the more important inorganic substances including the non-

* The list has been arranged alphabetically for convenience of reference. [Ed. *P.J.*]

metals and their compounds, and such metallic compounds as are included in the British Pharmacopœia, and also the following organic compounds:—ether, chloroform, amyl nitrite, ethyl acetate, and hydrocyanic acid, so that he may be able to explain to the examiner the operations involved in their preparation, and, if called upon, to perform the operations or certain stages of them himself.

Materia Medica.

The candidate is required to recognise specimens of any crude drugs mentioned in the British Pharmacopœia or in the annexed list, as well as their principal commercial varieties; to be acquainted with their botanical (or zoological), geographical, and commercial sources, the natural orders to which they belong, as well as the modes of collection and preparation for the market; to indicate the morphological nature of such as are organised, and the mode of formation of such as are unorganised; to correctly describe them, and to point out diagnostic characters either chemical or physical, the latter as far as they can be ascertained by the use of a lens. To name the chief active constituents of official drugs, to know the proportion present in good samples of the more important of them, and to possess a practical knowledge of any pharmacopœial tests or processes of assay applied to crude drugs or their official products.

Animal Substances.

Castoreum
Mylabris cichorii
Mylabris phalerata

Barks.

Berberis vulgaris
Canella alba
Cinchona calisaya
Cinchona lancifolia
Cinnamomum cassia
Coto
Erythrophlœum guineense
Nectandra rodiæi
Pinus larix
Quercus robur
Rhamnus frangula
Ulmus campestris
Ulmus fulva

Cryptogamic Substances.

Cetraria islandica
Chondrus crispus
Fucus vesiculosus
Lycopodium

Flowers.

Arnica montana
Calendula officinalis
Pyrethrum cinerariæfolium, etc.
Rosa centifolia

Fruits.

Ægle marmelos
Cuminum cyminum
Laurus nobilis
Piper longum
Punica granatum
Vanilla planifolia

Gum-Resins.

Euphorbium
Olibanum

Hairs or Glands.

Mallotus philippinensis
Mucuna pruriens

Herbs, etc.

Convallaria majalis
Euphorbia pilulifera
Grindelia squarrosa et robusta
Juniperus sabina
Lactuca virosa
Marrubium vulgare
Ruta graveolens
Solanum dulcamara

Juices, etc.

Aloes (Cape)
Aloes (Natal)
Catechu (black)
Gutta-percha
Lactucarium
Manna

Leaves.

Aconitum napellus
Nicotiana tabacum
Piper angustifolium

Resins.

Dragon's Blood
Elemi. Mastiche
Sandarac. Shellac

Rhizomes, etc.

Acorus calamus
Agropyron (Triticum) repens
Helleborus niger
Iris florentina
Sanguinaria canadensis
Veratrum album
Veratrum viride

Roots.

Alkanna tinctoria
Althæa officinalis
Bryonia dioica
Inula helenium

Seeds.

Amomum melegueta
Areca catechu
Dipteryx odorata
Hordeum distichon
Hyoscyamus niger
Paullinia sorbilis (Guarana)
Pyrus cydonia
Strychnos amara
Theobroma cacao
Trigonella fœnum-græcum

Pharmacy.

The candidate is required to possess a general knowledge of the following branches:—

(*a*) Operations requiring the use of heat. Evaporation, with particular reference to the preparation of extracts and inspissated juices; special characters and modes of preparing the various classes of extracts; influence of surface temperature and pressure upon the rate of evaporation; water, steam and sand baths; distillation, ordinary, fractional and destructive, distinctive characters and objects of each; official preparations illustrating the various kinds of distillation, apparatus employed, the retort and receiver, still and worm, Liebig's condenser, principles on which they are constructed and used. Sublimation; its objects and applications in pharmacy; official products of sublimation, calcination and fusion. Desiccation; temperature best suited for drying particular drugs, loss in drying vegetable drugs, forms of drying ovens, principles on which they are constructed and used.

(*b*) Disintegration of solid substances: cutting, bruising, and pulverisation; apparatus employed, principles indicating which is to be adopted in particular instances; methods for controlling the degree of comminution, sieves and sifting, trituration, levigation, elutriation, granulation, including methods for producing certain chemicals as fine powders, small crystals, scales, etc. Solution; its nature, solvent power of various menstrua, influences of (*a*) temperature; (*b*) state of division of the substance to be dissolved; (*c*) time; (*d*) position of the substance in the menstruum; lixiviation, infusion, digestion and decoction; maceration, percolation and displacement, principles on which the successful performance of these processes depends; form and materials for percolators and other vessels employed. Filtration, objects and methods, filtering media, means of expediting filtration; dialysis, its application in pharmacy, construction and use of the dialyser. Expression; methods of obtaining the juices from plants; recovery of the residual liquids from tincture marcs, etc., screw, hydraulic and other presses. The principles involved in the dispensing of medicines, particularly with reference to the best excipients and methods for forming pill masses, the preparation and nature of emulsions, the most suitable emulsifying agents, and the best means of suspending insoluble substances in liquids.

(*c*) The candidate is also required to show a general knowledge of the processes, and understand the principles of the processes by which the official preparations belonging to the following classes are made: collodions, confections, decoctions, dilute acids, extracts (solid and liquid), glycerins, infusions, juices, liniments, lotions, mixtures, ointments, pill masses, plasters, powders (simple and compound), solutions, spirits, suppositories, syrups, tinctures, vinegars, waters and wines. A knowledge of the proportion of active ingredient or crude material in official preparations containing aconite, antimony, arsenic, belladonna, Calabar bean, cantharides, chloral hydrate, chloroform, caustic potash and soda, colchicum, digitalis, elaterinum, ergot, iodine, iodoform, ipecacuanha, lead, mercury, nux vomica, opium, phosphorus, scammony, stramonium, squill, alkaloids and alkaloidal salts.

(*d*) The candidate is required—

(*α*) To enumerate the poisons contained in Schedule A of the Pharmacy Act, 1868, and those since added therto, in pursuance of the provision contained in Section II. of that Act, viz.:—

Poisons within Part I. of the Schedule.
Poisons within Part II. of the Schedule.

(*β*) To describe minutely the conditions required upon the sale *by Retail* of poisons, both in Part I. and Part II. of Schedule A; and to write the proper entry required, according to Schedule F of the Act, for the sale of a poison coming within Part I. of Schedule A.

(*γ*) To state the conditions imposed on the sale of scheduled poisons *by Wholesale and for Export*, and upon the sale of a scheduled poison when forming an ingredient in a medicine dispensed.

The candidate is also expected to possess a knowledge of the conditions imposed on the sale of Arsenic by the Arsenic Act.

Practical Pharmacy and Dispensing.

The candidate is required—To conduct such operations of the British Pharmacopœia, or such parts of them as may be practicable, involved in the processes for preparing collodions, confections, decoctions, dilute acids, extracts (solid and liquid), glycerins, infusions, juices, liniments, lotions, mixtures, ointments, pill masses, plasters, powders (simple and compound), solutions, spirits, suppositories, syrups, tinctures, vinegars, waters and wines.

To weigh, measure, and compound medicines; to write the directions in concise language in a *neat and distinct* hand; to finish and properly direct each package. [*In awarding marks in this subject the time taken by the candidate in doing the work is taken into account*]

Prescriptions.

The candidate is required to read without abbreviation autograph prescriptions, translate them into English, understand the grammatical construction of the Latin, and render a literal as well as an appropriate translation of the directions for use. To detect errors, discover unusual doses, and have a general knowledge of Posology. To calculate percentages and other quantities occurring in prescriptions; also to render in good Latin ordinary prescriptions written in English.

Candidates must not take into the Examination Rooms or Laboratories any books or any notes or memoranda, whether written or in print.

MAJOR EXAMINATION.

For Registration as Pharmaceutical Chemists under the Pharmacy Act, 1852. Pharmaceutical Chemists are exempt in England and Wales from service on all Juries and Inquests under Juries Act, 1862.

Fee Three Guineas.

The examination in the respective subjects may be oral, practical, or in writing.

Botany.

In addition to what is required for the Minor Examination, the candidate is expected to show a competent practical knowledge of the following subjects :—

CLASSIFICATION.—The general principles of classification; the Natural system.

The characteristic features of the following groups :—

CRYPTOGAMIA.

THALLOPHYTA.
ALGÆ.
FUNGI (INCLUDING LICHENS).

BRYOPHYTA.
HEPATICÆ.
MUSCI.

PTERIDOPHYTA.
FILICINÆ.
Filices
EQUISETINÆ.
LYCOPODINÆ.

PHANEROGAMIA.

GYMNOSPERMÆ.
Coniferæ.

ANGIOSPERMÆ.

Dicotyledones.

Thalamifloræ.
Papaveraceæ.
Caryophyllaceæ.
Violaceæ
Malvaceæ.

Discifloræ.
Geraniaceæ.
Rutaceæ.

Calycifloræ.
Saxifragaceæ.

Corollifloræ.
Dipsaceæ.
Valerianaceæ.
Gentianaceæ.
Scrophulariaceæ.
Boraginaceæ.
Labiatæ.
Primulaceæ.

Monochlamydeæ.
Polygonaceæ.
Euphorbiaceæ.
Ulmaceæ.
Urticaceæ
Cupuliferæ.
Salicaceæ.
Betulaceæ.
Myricaceæ.

Monocotyledones.

Petaloideæ.
Orchidaceæ.
Amaryllidaceæ.
Iridaceæ.

Glumifloræ.
Cyperaceæ.
Graminaceæ.

MORPHOLOGY.—Alternation of generations as illustrated by the life-histories in the several classes of plants; relative magnitude and degree of development of the sporophyte and the gametophyte. The general anatomy of plants, treated more fully than in the Minor examination.

PHYSIOLOGY.—The general physiology of nutrition and growth. The relationships and adaptations of plants to their surroundings.

PRACTICAL WORK.- The candidate is expected to make and mount microscopical preparations illustrating vegetable structure, and to be able to apply microchemical tests for cellulose and its modifications as they exist in the cell wall, and for the chief products which are formed in plant cells.

Chemistry and Physics.

In addition to the subjects indicated by the Schedule for the Minor examination the candidate is expected to possess a knowledge of the most important facts connected with :—

(*a*) The physical constitution of the three states of matter; liquefaction of gases, critical point; the diffusion of gases and liquids, dialysis; methods for determining vapour densities; solution.

(*b*) The dynamical theory of heat; heat and temperature; sources, development, and propagation of heat; radiation, diathermancy, and athermancy, separation of heat from light; latent heat; boiling point, distillation; freezing mixtures; specific heat; calorimeters; relation of specific heat to atomic weight; methods of determining exceeding high and low temperatures.

(*c*) The undulatory theory of light; reflection; refraction; interference of light; propagation of light, the photometer; mirrors and lenses, the microscope; decomposition of white light by a prism; the spectroscope, spectrum analysis; double refraction; polarisation, the polariscope; influence of light in promoting chemical change, the principles of the ordinary photographic processes.

(*d*) The methods of producing magnetism; magnetic induction. Sources of electricity, frictional electricity; the electroscope; electric induction; electric machines; the Leyden jar; voltaic electricity; the principal forms of voltaic batteries; the galvanometer; chemical effects of current; electrolysis; measurement of current, Ohm's law; voltameter; secondary currents, secondary batteries; thermo-electricity, the thermopile; production of heat and light from electricity; electromotors; dynamo-machines.

(*e*) The history of the atomic theory; the hypothesis of Avogadro; the methods by which the standard atomic weights have been determined; dissociation; specific volume; the periodic law.

(*f*) Classification of carbon compounds; rational formulæ; isomerism. The characteristics and constitution of the chief typical organic compounds. The constitution, sources, methods of preparation, properties, reactions, and mutual relations of the following organic compounds: *Cyanogen derivatives.*—Urea, cyanuric acid, uric acid. *Hydrocarbons.*—The principal members of the paraffin, olefine, acetylene, and benzene series; their chief haloid and nitro-derivatives. Theory of isomerism in paraffin and benzene series. *Paraffin derivatives.*—Distinction of primary, secondary, and tertiary alcohols; the chief primary monohydric alcohols; glycol; glycerin (glycerol); mannite; acetaldehyde, chloral; chloral hydrate; acetone; ether; the principal acids of the acetic series; oleic acid; glycollic and lactic acids; oxalic, succinic, malic, tartaric, racemic and citric acids; ethylamine; acetamide; glycocine; cane sugar; grape sugar; milk sugar; maltose; starch and cellulose. *Benzene derivatives.*—Phenol sulphonic acid; phenol; resorcin (resorcinol); aniline; benzaldehyde; salicylaldehyde; benzoic acid; salicylic acid. The principal properties of the terpenes and camphors, essential oils, resins. The characteristics of naphthalene and its derivatives. The processes of alcoholic, acetic, lactic and ammonic fermentation. The properties and decomposition products of the principal glucosides, alkaloids, and other substances of definite chemical composition in the British Pharmacopœia.

Chemistry.—PRACTICAL EXAMINATION.

The candidate is expected to be able :—

To analyse mixtures containing three metallic salts; to estimate the nitrogen in organic compounds by the soda-lime and Kjeldahl processes; to determine melting and boiling points. To perform processes of gas analysis which can be carried out in a nitrometer. To perform the operations (or certain stages of them) necessary for the preparation of cyanogen, artificial urea, ethyl chloride, iodoform, ethylene, ethylene dibromide, acetaldehyde, formic acid, oxalic acid, nitro-benzene, aniline, benzoic acid, the nitrophenols. To recognise by their chemical reactions, and to determine, where necessary, by the Pharmacopœial gravimetric or volumetric methods, the strength and purity of the most important of the inorganic and organic compounds (including crude drugs and galenical preparations) described in the British Pharmacopœia. To detect and separate the most important alkaloids, alkaloidal salts and glucosides, and to separate in the pure state morphine from opium and strychnine from nux vomica. To detect methyl alcohol in tinctures, liniments, and other preparations.

In the practical portion of the Major Examination standard works of reference are provided for the use of candidates, at the discretion of the examiner. No other books or memoranda are allowed.

Materia Medica.

In addition to what is required for the Minor, the candidate is expected to show a practical knowledge of the methods of estimating the value of important drugs, of distinguishing commercial varieties of the same, and of separating such of their active principles as are official in the British Pharmacopœia.

The candidate is also expected to have a general acquaintance with the active constituents of all important drugs, and to possess a general knowledge of the chemical properties of the official alkaloids, glucosides, resins, and essential and fixed oils.

The candidate is expected to make and describe microscopical preparations of any organised vegetable drug official in the British Pharmacopœia, and to point out distinctive histological features in the same. The candidate is also expected to discover obvious adulterations present in powdered drugs, from comparison with authentic material.

EXTRACTS FROM CONSULAR REPORTS.

Coffee Growing in Mexico is reported by Consul A. Chapman to have been a good business in former years, and he sees no reason why it should not continue to be so, provided it has a fair chance. The Mexican crop has the advantage of an early season; labour and expenses are paid in silver, whilst the crop represents a gold value, thus a drop in the value of silver means a profit to the grower. These and other like causes induced the investment of a considerable amount of foreign capital in the business, and the production was greatly increased. But the Federal and State Governments, seeing that much money was being made in coffee, determined to have a share of the profits, and so seized the opportunity to impose taxes on its production and export. The result is that, owing to the increased cost of production, in some districts growers have been compelled to reduce the plantations subject to taxation, while there are indications of a shyness to invest further capital in the industry. The moral adorning the tale told by Consul Chapman is that the taxation of production and the imposition of export duties is as unwise as the killing of the goose that laid the golden eggs.

The Business in Chemicals from England at Barcelona last year, according to the report of Consul J. F. Roberts, was fairly good, but not up to that of past years. With regard to the trade in artificial manures, the farmers, instead of purchasing expensive fertilisers, now buy raw materials and mix them themselves, thus causing a considerable falling off in the imports of prepared manures.

An Influential German Company, it is reported, is erecting a large mill at Fax, situated on the River Ebro, in the Province of Tarragona (Spain), for the purpose of manufacturing by an electrical process caustic soda and other drugs in common use in the country. It is expected that if the venture proves to be successful, it will probably greatly interfere with the importation from Great Britain.

The Large Vanilla Crops of the last two years in the Seychelles Islands caused both exports and imports to greatly exceed those of previous years. During 1897 the exports of vanilla amounted to 61,382 lbs., valued at Rs. 921,065.

A Public Dispensary was opened in connection with the Public Hospital, Mahé, Seychelles, on February 15, 1897. Rs. 1050 were voted for the purchase of drugs, etc., and the amount received from the sales up to December 31 of the same year was Rs. 1700·53. This sum was contributed, in payment for small quantities of drugs, largely by the poor people of the islands, to whom the establishment has proved to be a great convenience.

Perfumery, Drugs, and Chemicals imported into Egypt during 1897 amounted to a total value of £258,517, of which the United Kingdom contributed £31,499. This was an increase of £38,692 on the total imports of 1896, and of £3609 on those from the United Kingdom. Snuff is an article almost exclusively imported from Great Britain.

The Number of Medical Practitioners in Florence (Italy) is reported to be 282, or one for every 690 inhabitants, which is said to be greatly in excess of the wants of the population. The number of foreign doctors is fourteen, of whom three are English. Any foreign doctor who desires to practise in Florence or in any other commune in Italy must exhibit his diploma for inspection by the Office of Hygiene at the Municipality, after which, if satisfactory, he is duly authorised to practise among foreigners. But he is not allowed by law to practise among Italians unless provided with a degree of an Italian university.

The Italian Parliament lately had a proposal brought before it (see *P.J.* [4], vii., 344) on the initiative of the Italian profession that foreign practitioners should be prohibited from practising in Italy, even among their own countrymen, unless they first obtained a diploma in one of the Italian universities. It was even proposed that those physicians already residing in the country should be deprived of the rights they had hitherto enjoyed. An address was, therefore, presented to the Syndic of Florence by the three British medical men practising in that city calling attention to this fact, and pointing out that the diploma held by them, the result of prolonged and laborious studies, had been recognised by the municipal officer of health and duly registered as authorising the holders to practise their profession in Florence. It was further urged that any diminution or withdrawal of the rights now possessed by foreign physicians would diminish the number of English residents, as those English visitors who would go to Florence in quest of health would be deterred from doing so if they knew they could no longer find English physicians there. The Syndic fully appreciated the arguments set forth by the applicants and expressed his concurrence with the substance and bearings of the address, and said that the matter should have his consideration, and if desirable be referred to the Ministry of Public Instruction.

British Medical Men, as Consul-General Chapman points out, generally meet with difficulties on registering their diplomas at the Municipality of Florence in order to obtain the necessary licence, on account of the fact that degrees issued by English licensing bodies bear no testimony as to the holder's competency in the subject of proficiency in which the diploma is issued. He quotes a particular instance in which a London University Degree was objected to because it did not set forth that the holder was qualified to practise medicine, surgery, and midwifery. The same objection was applied to a M.R.C.P. diploma.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

A meeting of the Aberdeen Pharmaceutical Association was held in Robert Gordon's College on Friday, the 30th ult., Mr. James Clark, President, in the chair. The following proposals which were drafted out by a committee appointed for that purpose, were then submitted to the meeting:—

1. That all registered chemists trading under ancient titles shall be required to use the names of present owners in connection therewith.

2. That the usurpation of the titles protected by the Pharmacy Act of 1868 by unregistered persons trading as companies is an infringement of that Act, and detrimental to the interests of legally qualified chemists, and ought to be put a stop to.

3. That the keeping of open shops by companies whose members are unqualified is contrary to the spirit and intention of the Pharmacy Acts, and a source of danger to the public.

4. That, in order to promote uniformity of the law, the exemption granted to executors, administrators, or trustees of the estates of deceased chemists, in Section 16 of the Act of 1868, should be limited to the time necessary to wind up the deceased's estate, and should in no case exceed twelve months.

5. In view of the necessity for legislation to remedy the defects in the existing Pharmacy Acts it is desirable that the Pharmaceutical Society should now be in a position to speak for the whole trade, and embrace them all in its membership. It is resolved, therefore—(*a*) That the free distribution of the *Pharmaceutical Journal* to members should cease, and that its sale in future should be put on a regular commercial basis; (*b*) that the annual subscription to the Society should be reduced to the lowest amount compatible with the due upkeep and efficiency of the Society.

6. That these resolutions be forwarded to the Council of the Pharmaceutical Society, with the assurance that this Association will give them hearty support in their endeavour to promote legislation to remedy the grievances under which we, as a trade, rest; and in any steps which may be taken to rally the trade to their support by broadening the basis on which the Society rests.

There was a good deal of discussion upon the various propositions as they were submitted to the meeting, in which most of the members present took part. Ultimatately,

Mr. Charles Simpson moved the adoption of the proposed resolutions. He said:—The set of propositions submitted are most deserving, and calculated to be of great benefit to the trade. The first four are all meant to strike at company pharmacy. I personally am sorry to give up what is known as the "Widow's Clause," but it has been so much abused and so often referred to as the stumbling-block of the Act that if we are to gain anything by legislation we must also be prepared to sacrifice something. There can be no injustice to anyone in insisting on a proprietary qualification, and there could be no argument against it except a sentimental one. Section 15 of the Act proves conclusively that the titles are reserved for those who have the necessary qualifications. Companies keeping open shop I hold is a distinct infringement of the spirit of the 1st section of the Pharmacy Act. After perusal of the Act by anyone, it must be a natural sequence and a natural conclusion that it is only meant for those who qualify. In conclusion, no matter how we talk and petition and resolve, unless we present ourselves as a united body very little heed will be given to us, but if we can go forward a solid and united body of 10,000 or 15,000 we are bound to make ourselves felt.

Mr. Andrew Craig seconded the proposed resolutions, and they were unanimously adopted.

LETTERS TO THE EDITOR.

The Proposed Poison Regulations.

Sir,—The coming meeting of the Pharmaceutical Society will run the risk of being unsatisfactory from two opposite causes. It would be a pity that the meeting should take place without the benefit of passing some regulations which should be satisfactory to the Privy Council, and it would be equally regrettable that regulations should be passed which would be only half acted upon, or an unnecessary annoyance to the trade. With the view of avoiding these two risks, I offer the following as the smallest alteration of the proposed regulations, which I think would render them satisfactory to pharmacists, and which at the same time should, I think, be satisfactory to the Privy Council and to the Council of the Pharmaceutical Society. I give the regulations as already proposed in the ordinary type, and the additions I think desirable in italics.

That the following be adopted by the Pharmaceutical Society of Great Britain as regulations for the keeping, dispensing, and selling of poisons in accordance with the provisions set forth in Section 1 of the Pharmacy Act of 1868 :—

1. That in the keeping of poisons, each bottle, vessel, box, or package containing a poison be labelled with the name of the article and also with some distinctive mark indicating that it contains poison, *and that this distinctive mark shall be a label, thus*—

2. Also that in the keeping of poisons *named in Part I. of the Schedule, each vessel or package from which dispensing or small sales are to be effected* shall be kept on one or other of the following systems, viz. :—

(*a*) In a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same shop or dispensary ; or

(*b*) In a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same shop or dispensary ; or

(*c*) In a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles.

These regulations not to apply to laboratory or warehouse stock, but may be applied to any dangerous article, whether scheduled or not, which the pharmacist thinks would be better for this protection, and no storage regulations need apply to plasters, ointments, suppositories, antiseptic dressings, proprietary medicines, vermin poisons, or other poisons kept packeted ready for sale with the poison label attached, unless their nature be such as brings them within the first part of the Schedule. Also that poison regulations do not apply to the storage of any preparations of poisons, whether scheduled or not, if the proportion of the poison be such that an ordinary medicinal dose is contained in not less than f. ʒij. if the preparation be a liquid, or in not less than 15 grains if the preparation be a solid.

In regulation No. 3 on the dispensing and selling of liniments, etc., I do not propose any alteration.

The subject is not, with me, a personal matter, as I now have only what may be called a sleeping interest in the progress and prosperity of pharmacy, but the habit of my life has been to do and to say what I conceive to be the right thing for the good of our craft, I can now only give expression to my conclusions, and trust that if they appear reasonable some one more fit for work than myself will put them before the meeting, for I do not entertain any hope of being present, or taking any active part in such work again.

Bradford-on-Avon, December 30, 1898. B. S. Proctor.

Sir,—Well may you remind us (page 700) that the subject of the adoption of poison regulations is "one of the gravest importance not to be dealt with lightly or from the view of personal convenience only." Indeed, sir, it seems to me that, looked at fairly and straight, the too-prevalent giggling tone should yield at once to candid sorrow and shame, that ancient fallacies that have served only too well in misleading the large multitude of less-informed minds should be revived at this juncture as a block to progress once more. Most humiliating, is it not, that on the threshold of the twentieth century—with all that we have gone through as to educational enlightenment and the reforms of which we boast, including what one of your correspondents calls a reform of the Pharmaceutical Society, and certainly a reform of the Journal—that one can take up a number of the same but a week or two old and find in print the chronic error, exploded long since, about those mighty intransitive verbs "may" *v.* "must," as if it were not generally known that in the language of an Act of Parliament "may" = "shall," and certainly "shall" is very near akin to "must"? But many seem getting weary of their mother-tongue, phonetics and volapuk suit better ; let us have a word of the history of the matter.

In the Pharmacy Act, 1868, power was conferred upon the Pharmaceutical Society to frame regulations for the storage of poisons, which, subject only to the approval of Her Majesty's Privy Council, would become compulsory for all whose business it was to handle such dangerous agents. Was this an advantage or not? Was it not the handing over to the pharmacist of the future a full legal right to make for himself uniform regulations for the conduct of his own business so far as scheduled poisons are concerned, and a shutting out of all would-be meddlers, who have often wanted, and still want, to do it for him? Who is not sensible of the dignity of such a public trust? And who is he at this time of day who does not feel that something is due on his part in return? That it is incumbent upon us as a body of artistic—or scientific—workers to show at least a due appreciation of the compliment paid us by assenting to a code of rules combining the maximum of efficiency with the minimum of inconvenience—rules that shall be binding upon the great household everywhere alike !

The causes of the mutiny in olden time are clear enough—for mutiny it really was. The trade admitted *en masse* into the Pharmaceutical Society, as members, had but scanty knowledge of its aims and workings, and very little sympathy therewith ; while seeking readily the honour and the respectability attaching to the status M.P.S., the demands of many were so exorbitant as to grudge the guinea a year, the policy being to get as much out of the Society, with the minimum of revenue, as possible. The Pharmacy Act had been passed recently in the teeth of their opposition, and when their accredited representatives produced in accordance with the provisions of the Act the carefully elaborated regulations as to the storage of poisons, a little misrepresentation and a powerful whipping up was enough to stop the good that was aimed at ; in consequence of which a dangerous defect in the working of the whole concern has ever since confronted us. This defect the contemplated resolution of Mr. Robinson seeks to remedy in the simplest possible way, and it is much to be hoped, for our credit as men of business earnestness, that this rectifying of the mainspring of the instrument, the value of which is becoming more patent from year to year, may be effected with a substantial display of unanimity. It would not be wise to shut our eyes to the fact that a certain amount of obstructiveness to pharmacy progress, chiefly of a very low commercial character, is still to be found amongst us. But of late years, through the indomitable energy of our leaders—within the Council and without—in consequence of their extensive work of a missionary character, and the salutary effect of chemists' associations throughout the country, that little knowledge which is "a dangerous thing" has been put to the right about, and the members of the business everywhere have been brought into line for the intelligent defence of their common interests and the amelioration of their condition as fellow craftsmen. This, which has been the aim of the Society, as represented by its executive from the first, is a slow but steady process, requiring the patience of discipline on our part, the result of full confidence in our leaders, and a consciousness of the justice of our aims.

Marylebone, January 3, 1899. J. C. Hyslop.

Sir,—In your report of the special meeting of the Glasgow and West of Scotland Pharmaceutical Association, held on 21st ult., to consider the proposed poison regulations, it is stated that the motion put to the meeting to this effect—

> That the time has arrived for the Pharmaceutical Society to adopt as regulations the recommendations issued in 1871 for the selling and dispensing of poisons in accordance with the provisions set forth in Section 1 of the Pharmacy Act, 1868—

was unanimously agreed to. This is true in so far as no amendment was proposed, but as a humble member of the Association I would desire to express my protest, and although it was the

finding of the said meeting, it must not be considered as the unanimous opinion of the pharmacists of Glasgow and the West of Scotland. Since the meeting I have spoken on the subject to several who were not present, and I find that I am very far from being alone in the views I hold on the question. It would be interesting to know why this question of poison regulations is being again brought forward. The same regulations, word for word, were before the trade in 1871, and the members of the Pharmaceutical Society were then very much up in arms against them. The bugle call was virtually sounded by Mr. R. Hampson, then of Manchester, in a letter printed in the *Pharmaceutical Journal* of December 17, 1870, and immediately meetings were held all over the country. Our own local association had several meetings, and at a special one held on April 3, 1871, the following motion was submitted and unanimously carried :—

> That this meeting is opposed to the restrictive measures for the sale and keeping of "poisons" recommended by the Council of the Pharmaceutical Society (with consent of the medical officers of Her Majesty's Privy Council) for adoption at the Annual Meeting in May next, as we consider it is highly impolitic to interfere in any way with the conducting of our business, otherwise than as recommendations, and being convinced that the greatest security for the public lies in the education of the dispenser, and such education being now not only improved but made a necessary qualification, is to all intents and purposes a guarantee of our ability to conduct our business for the public safety.

Other resolutions were put to the meeting and unanimously carried, but the above was the key-note, and, I may say, was the key-note of most of the meetings held throughout the country. The result of all this agitation was that the enforcing of the proposed regulations was dropped, and till now we have heard no more of them. Surely, after all these twenty-seven years of educational advancement, there is less call than ever for increased harassing restrictions. We are told that the Privy Council intends insisting on further legislation. What excuse has it for so doing? Has there of late been more apparent carelessness on the part of pharmacists, or have poisoning accidents been more frequent? I cannot learn that either has been more pronounced. I rather think that the tendency is all the other way. Pharmacists are more alive than ever to the serious responsibilities attached to their calling, and take all precautions to prevent any untoward results happening, either through their own mishap or from carelessness on the part of their customers. As regards the proposals Nos. 1 and 3, these are already, I presume, carried out by every person who is a pharmacist. There is really no necessity to enforce them. To enforce them by legislation would lead only to trivial but annoying friction. It is only when we come to No. 2 proposal that we have food for objection. Each pharmacist has his own ideas regarding the storage of his poisons, and these have to be modified according to his environment. All, however, tend towards the one aim, viz., the prevention of accidents. It may be suggested that the proposal which is to be submitted to the meeting on 11th inst., only focusses these individual ideas. But it really does a very great deal more: let us consider that in detail. It is proposed that poisons—and this must, of course, include all preparations containing scheduled poisons—be kept in one or other of the three suggested systems. If under "A" or "B," then besides our ordinary shop bottles containing poisons, every bottle of hypophosphite syrup, Easton's syrup, tabloids, jelloids, and palatinoids containing arsenic or strychnine; pills containing phosphorus, belladonna, strychnine, or morphia; all belladonna, opium, and cantharidine plasters; all proprietary articles such as Fellow's syrup, Powell's balsam, Kay's ess. linseed, chlorodyne, *et hoc genus omne*, "must be tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary," or they must be kept "in bottles or vessels rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary." Then if we elect to carry out suggestion "C" the wonderful cupboard or cupboards—for we will require a number—must be capacious enough to hold *all our stocks* of the aforesaid proprietaries—a dozen box of Fellow's Syrup not in safe keeping might land us in Court. Further, all our Winchesters of lin. belladonnæ, lin. aconiti, jars of laudanum, paregoric, and chloroform water, byno-hypophosphites, double-cyanide and sublimated gauzes, wools, and lints, Hartmann's dressings, sublimated "Gamgee," all hair lotions containing cantharides, all toothache tinctures containing chloroform, oxalic acid, salt of sorrel, all "vermin killers," and "other articles too numerous to mention," must all be restrained in this most extraordinary cupboard. Then the safety of the public will be absolutely guarded and protected (?) by having in this cupboard, or in these cupboards, in necessarily close conjunction, such articles as tinct. opii. and ext. ergotæ liq ; tinct. opii camph. and tinct. aconiti ; liq. morph. mur. and aq. chloroform ; liq. strychninæ and liq. hydrarg. perchlor., etc., etc. Now, these are just the articles which, if the proposal is carried out, we will be compelled to store together, but which at the present moment we keep as far asunder as possible. It may be urged that the proposed regulations are not intended for such articles as I have named. I answer that they are all scheduled poisons, and convictions have followed their sale by unqualified persons. It must not be inferred that I object to all necessary precautions. I hail with satisfaction every safeguard proposed or invented for the safety of our customers and consequently of ourselves ; but what I do object to is the tying us down to a set of regulations which, if attempted to be carried out to the letter, are absurd and impossible, and which, so far as I can see or learn, are quite uncalled for.

Glasgow, January 3, 1899. JOHN MCMILLAN.

Sir,—As a member of the Society and for many years a member of the Council, I shall be glad if you will afford me opportunity of entering my protest against the calling of a special general meeting of the Society for the discussion and decision of such an important subject as the above at a time of the year when it will manifestly be impossible for a considerable number of the members who take an intelligent interest in the subject, and who will for all time be bound by the decision, to be present. Assuming as correct the views held by some members of the Society—that the want of success in accomplishing legislative good for pharmacy is due, as is sometimes stated, to a prejudice excited in influential quarters by an unfulfilled pledge given by a former President of the Society (without the knowledge or consent of his colleagues) to a late official of the Privy Council——that pledge has waited for thirty years, and it may well wait another five months, so that it may be more adequately discussed at the annual general meeting of the Society in May ; or even, better still left, for another election of Council upon the distinct issue of "Mechanical regulations *v.* education" in the management of poisons. With regard to the wisdom of the regulations, I have never met the man who could formulate regulations which would adequately replace the care and watchfulness which becomes an instinct to the educated, trained, and conscientious pharmacist; and as to the moral obligation, let us remember that men who were no whit inferior to us in their high sense of honour, and who were the colleagues of the President who is supposed (rightly or wrongly) to have pledged the Society, did not feel it incumbent on them to redeem the so-called pledge. If I could be present at the meeting on the 11th (which at this moment, I fear is impossible), I should move as an amendment to Mr. Robinson's motion, "That the discussion of the regulations for the keeping, dispensing and selling of poisons be postponed to the annual general meeting of the Society in May." I hope there will be some member present who will do this, and that the meeting will not become an intolerable burden to our successors in pharmacy. I would urge upon every member of the Society who will be present at the meeting on the 11th inst., and who may be tempted to vote for the regulations, in consequence of what he thinks to be their reasonableness, to read and ponder the debates and correspondence—and especially the views which were held as to official inspection—as published in the *Pharmaceutical Journal* in the years immediately following the passing of the Act of 1868; and if he has not done this to secure for himself the opportunity of doing it by postponing the final decision, as I suggest. We have received from our ancestors the watchword "education" as the true safeguard of the public ; let us hand it on to our successors unfettered by any conditions which may be unnecessary in the interests of public safety, and irksome to a body of educated and self-respecting men.

Newcastle-on-Tyne, January 2, 1899. N. H. MARTIN.

Sir,—There is a point in Mr. Morrison's letter in this week's Journal, which I have wished for some time to be clear upon, *i.e.*, the sale of homœopathic tinctures which are poisons, aconite and arsenicum especially. I do not stock them at all, but several of my friends use them, and lately they have had the B.P. tinctures instead. However, they are quite offended when I make them sign

for tincture of aconite; they say Mr. Blank never asked them to do so when they had the homœopathic tinctures. I agree with Mr. Morrison that it is a preparation of aconite, if only 3x, and should be treated as such. If the Pharmacy Act does not apply to companies, I cannot perceive how the proposed poison regulations can be made to do so, in which case we shall be much worse than at present, as we shall be restricted and they will not. I certainly think each chemist should be allowed to use his own discretion. Why cannot the first part of this clause of Section 16, Pharmacy Act, be brought forward against company pharmacy? "Upon the decease of any pharmaceutical chemist, or chemist and druggist, actually in business at the time of his death, it shall be lawful for any executor, administrator, or trustee of the estate of such pharmaceutical chemist or chemist and druggist to continue such business, etc." In almost all the stores the proprietor is living; how can there be an executor or trustee? and that is the only condition upon which a qualified assistant is allowed to conduct a business. I do not think the abolishing of the "Widow's Clause" would meet with much opposition, as a widow would even then be allowed to carry on the business if she did not sell poisons. A short time ago, when it was proposed that a clause should be added to the Pharmacy Acts Amendment Bill to prevent company pharmacy, a large firm of unqualified persons was asked how it would manage if that passed. The reply was that arrangements had already been made that the business would, in each instance, be carried on in the name of the head manager. He would keep his books very carefully, and settle with the shareholders every quarter quietly. If this is the case, what will be the use of a new Act of Parliament unless it gives the Society power to erase from the Register the names of those who continue to "cover" such companies? In conclusion, I would ask every pharmaceutical chemist and chemist and druggist to remember "Ex nihilo nihil fit," and send his subscription to the Society, just for one year. If no good is done, it need not be continued another year, and there are very few who will miss one guinea.

December 30, 1898. NIL DESPERANDUM (163/6).

Sir,—I should like most emphatically to condemn the proposal to adopt poison regulations. Each chemist has his own idea of the storage of poisons and what is most suited to his own pharmacy, and it is well it should be so. Speaking after a business career of thirty-five years, I strongly protest against the necessity of any such alteration. We have got regulations for poison selling, and now it is suggested for poison storage. We might go a step further and get an Act to prevent the sale and storage of poisons altogether. Then I think the public and everybody else ought to be satisfied. Really, sir, I think the proposal quite unnecessary.

Liverpool, January 4, 1899. WALTER A. GRACE.

REASONS FOR PHARMACEUTICAL AGITATION.

Sir,—The force which will impel agitation in any cause is necessarily largely a selfish one, yet where it can be shown that legislation is desirable solely from a consideration for the interests of the public it cannot matter what power it is which originated the movement. A simple understandable Pharmacy Bill is urgently desirable in the interest of the public, because the present state of the law leaves the public at the mercy of ignorance, duplicity, and cupidity in every shape and form. Money is universally employed to exploit the ailing and the imaginary ailing in the most scandalous manner, and with no thought but of gain. There is no body charged with the duty of protecting the public against its acknowledged ignorance. The whole practice of pharmacy outside dispensing is a mockery; ingenuity is brought to bear on every hand to play upon the weakness for physicking and to gull the sick. It is therefore quite time that qualified chemists and the medical profession, the people most familiar with the evils consequent upon the loose laws or rather the absence of law regulating pharmacy, should tell the public the facts. It is high time that both educated and uneducated people should know that the chemist has no exclusive duties and that he possesses no privileges, as they vaguely think he does. It is time they should know that in their own interest the examined and trained chemist should be plainly distinguishable, and should have exclusive duties. The public easily recognises that if a man cannot make a living legitimately he will do it some other way. There is also no difficulty in convincing the public that if the State considers training and examination necessary it should as a corollary give specific duties; in other words, the British public is easy to convince that sound pharmaceutical legislation is urgently required for its own welfare; that it would benefit the present holders of qualification, as against the unqualified, is accepted as a very proper and just consequence. This is simply and truly indicative of lay opinion. The Pharmaceutical Council in the pre-1868 age, as is evidenced by the 'Progress of Pharmacy,' and subsequent history, was guided by sound principle, but the circumstances of the time were adverse, especially in that the chemist had practically to be created. It seems to be taken for granted that we should have even greater difficulties now than in 1868. There is a mighty difference between 1868 and 1899, to which sufficient importance is not attached; over thirty years intervenes, linked to the fact of over three decades of compulsory examination, which makes all the difference in the world in our relation to the public, and suggests the probability that there is only one course open to us from which real good can come, viz., to boldly ask the public and the Legislature to put the practice of pharmacy on a sensible footing without reference to any interest whatever beyond the interests of the people. To quote from Dr. Attfield's address at the Southport Conference in 1883 we may

> put the matter still more broadly. Every civilised State has adopted means for ensuring the supply to the public of trustworthy drugs by professionally educated druggists. Such almost universal action would not have been taken had it not been called forth by universal necessity. The necessity is at least as great in Britain as in any country. Indeed, that necessity has been partially met even in this country by the enactments relating to pharmacy. But those Acts are working incompletely. The health and welfare of every individual in this land calls for a remedy for that incompleteness. The nature of the remedy is simple. . . . It involves no new principle. It consists merely in an extension of the spirit and letter of the existing Pharmacy Act. Under that Act about a score of medicinal substances are deemed poisons within the meaning of the Act, and are to be sold retail, as a rule, only by registered chemists and druggists. *Let that list be considerably extended*, saving all rightful interests of persons who otherwise would be unfairly prejudiced. Let the retail sale in open shop of most of the simple and compound medicines of the British Pharmacopœia be carried on only by qualified druggists. Let the duly educated, examined, and registered druggist alone be permitted to compound the prescriptions of the registered medical practitioner.

British pharmacy is non-existent, though there is a body examined now for over thirty years to do the work. Strong evidence can be adduced that a real practice of pharmacy which would touch the every-day needs of the people is an urgent national necessity. Every chemist in the country knows the need of the public for guidance in the use of drugs, then why not ask that this work shall be entrusted to qualified chemists, the men already to hand, trained and examined? It could not be argued that the Minor examination is insufficient to protect the public against ignorance, whilst competition amongst chemists would afford sufficient safeguard against imposition. On this platform it is not unreasonable to suppose:—

1. Chemists would combine.
2. The medical profession would unitedly support us.
3. The general press would support us.
4. Public opinion, if tested strongly, supports us.

And lastly it is the only intelligible position. It is the only one the public can grasp. That the brickmaker makes bricks, the builder builds, and the architect designs, are accepted as ordinary sense. It is accepted equally that the people who cannot qualify should not exercise the qualification, and that drugs should be sold by the druggist.

Blackburn, January 3, 1899. R. L. GIFFORD.

Obituary.

BATES.—On December 27, 1898, George Bates, Chemist and Druggist, Heage, Derbyshire. Aged 70.

[Answers to Queries are unavoidably held over this week, owing to pressure of space.]

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Acetic Acid as a Menstruum.

Dr. E. R. Squibb points out that, in the proposed substitution of acetic acid for alcohol as a menstruum for extracting and a vehicle for preserving and administering the active principles of drugs, a question arises as to the therapeutic equivalency. No therapeutic objections have been raised to the long-continued use of acetic acid for the extraction of cantharides, colchicum, ipecacuanha, opium, squill, etc., and it is stated that in the extraction of spices and of some drugs for veterinary use, the acid gives extracts practically identical with those made with alcohol. In the small quantities that would be present in the usual doses of fluid extracts, the acid would be practically inert or as nearly inert as the alcohol it would replace. The preservative properties of the acid in such proportions as would be admissible in galenical preparations have not yet been fully tested. Fluid extracts made with acetic acid menstrua contain much more inert extractive matter than those made with alcohol, but in compounding prescriptions they have a slight general advantage over the latter in the amount of precipitation on dilution and on mixing. The precipitates from the acid extracts are more soluble, contain less resin and fat, and probably less of the active principle of the drug. In administration, again, acetic extracts possess similar slight advantages over alcoholic extracts, the dilutions with water at the moment of administration being less muddy and unsightly, whilst the acidulous taste is less disagreeable. The above considerations are held to show that there are no serious therapeutic nor administrative objections to a more extended and more general trial of the proposed substitution. Dealing with the subject from a pharmaceutical point of view and taking the fluid extract of nux vomica as an example, the author shows that by the substitution of an acetic acid menstruum for an alcoholic one, a coarser powder can be employed and a much larger proportion of the alkaloidal constituents of nux vomica extracted, whilst one-half the cost of grinding and five-sixths of the cost of menstruum are saved, an equivalent product being obtained in larger quantity It is proposed next to investigate the effect of acetic acid in the exhaustion of cinchona.—*Am. Journ. Pharm.*, **71**, 1.

Assay of Nux Vomica.

Dr. E. R. Squibb, whilst engaged in the investigation referred to in the foregoing note, has sought to devise a convenient and fairly accurate process of assay for the mixed alkaloids of nux vomica, which should be free from certain objections attaching to existing processes, and he offers the following for consideration :—A fair sample of the drug is ground so as to pass through a No. 9 sieve, and ten grammes of the powder is exhausted, by cold percolation, with 10 per cent. acetic acid. The dry extract obtained by evaporating the percolate on a water-bath is treated in a capsule with 10 C.c. of a mixture of two volumes of 91 per cent. alcohol, one volume of 10 per cent. ammonia water, and one volume of water. Move a stirrer over the smooth surface of the extract for fifteen minutes, then pour the contents of the capsule into a separator of 150 C.c. capacity, and rinse the capsule and stirrer clean with 10 C.c. more of the alcohol and ammonia mixture. Next add to the liquid in the separator 40 C.c. of a mixture of equal volumes of 99 per cent. chloroform and 96 per cent. ether; shake vigorously during five minutes, then allow to separate. When the separation is complete measure the dark upper stratum, draw off the chloroform-ether solution into a tared 100 C.c. flask and immerse the flask in a hot water-bath so that the chloroform-ether may be boiled off by the time another washing is necessary. Meanwhile 40 C.c. more of chloroform-ether should have been added to the contents of the separator, and the shaking, etc., repeated. A third washing may follow if required. If the dark upper layer is found to have increased in depth during the second separation, it is an indication that emulsion has been formed to the extent shown, and after the chloroform-ether solution has been drawn off, the dark liquid should be heated in the capsule, on a water-bath, until all the chloroform-ether is driven off; then return to the separator and wash as before. A very small quantity of emulsion may be ignored. Finally add to the tared flask containing the total chloroform extract 10 C.c. of decinormal sulphuric acid; rinse the sides of the flask with this, and warm the flask by immersion in a water-bath until the soluble alkaloids are dissolved. Add 20 C.c. of hot water to the contents of the flask, and ten drops of logwood indicator, observe the colour by transmitted light and match it by a similar quantity of liquid in another flask. Then drop decinormal potassium hydroxide from a burette until the colour changes slightly to a pinkish tint; the tint should be very distinct when observed by reflected light. The number of C.c. required subtracted from the number of C.c. of acid used gives the number of C.c. saturated by alkaloids, and that number multiplied by the mean of the molecular weight of the two alkaloids (0 0334 + 0·0394 ÷ 2 =) 0·0364, gives the weight of mixed alkaloids obtained from the 10 Gm. of nux vomica, the strychnine and brucine being assumed to be present in equal proportions. Then, as 10 is to the product from 10, so is 100 to the percentage of the mixed alkaloids.—*Am. Journ. Pharm.*, **71**, 10.

Ferment of Digitalis.

Brissemort and Joanne find that the ferment first discovered by Kossmann in digitalis leaves, and considered by him peculiar to that plant, is an oxydase. The authors have detected a similar body in the leaves, stems and green berries of *Solanum dulcamara*, and it is probably analogous to the oxydases isolated from many plants. The authors find that the fresh and recently dried leaves of digitalis are very rich in this ferment, but that on keeping it gradually disappears. Thus, leaves gathered four months previous to the experiment gave marked reaction for its presence; those of last year's crop did so but feebly; while leaves gathered in 1896 gave no reaction.—*Journ. Pharm. Chem.* [6], **8**, 481.

Chemistry of Sassafras Oil.

Dr. C. Kleber is of opinion that the composition of oil of sassafras root bark may be summarised as follows:—Safrol 80 per cent., pinene and phellandrene 10, dextro-camphor 6·8, eugenol 0·5, cardinene (?) and residue 27 per cent. The wood and stem bark contain only traces of oil, and the wood of the root generally less than 1 per cent., but the root bark yields not less than 6 to 9 per cent. The oil, when freshly distilled, is almost colourless, but when exposed to light and air it gradually assumes a yellow, reddish, or even brown colour. Its specific gravity is between 1 07 and 1·08, with an optical rotation to the right, varying from +2° to +4°, the degree of rotation being lower as the specific gravity rises. The fact that the oil consists chiefly of safrol explains the fact that every spring oils possessing abnormal specific gravities appear on the market; if the safrol crystallises from the oil during the winter months, it forms a heavy layer at the

bottom of the vessel on remelting, and this heavy layer mixes with the bulk of the oil only very slowly. Samples drawn from the top of the vessel are, therefore, apt to differ greatly in specific gravity from those drawn from the bottom. An oil of sassafras leaves also exists, but it does not appear in commerce. The yield amounts to only 0·028 per cent. of the weight of fresh leaves used. When fresh this oil has a greenish-yellow colour, which changes to reddish-brown with age. Its specific gravity is 0·872, its optical rotation +6° 25′, and its odour somewhat resembles those of the oils of lemon and citronella. Citral, geraniol, and linalol are said to be amongst the constituents of the leaf oil.—*Merck's Report*, 7, 796.

Emetine Octoiodide.

H. M. Gordin and A. B. Prescott have isolated and analysed one of the two periodides which emetine seems to form with iodine, according as the iodine is added to the alkaloid, or the reverse. They prepared the salt by pouring 200 C.c. of a 0·5 per cent. aqueous solution of Merck's emetine, strongly acidulated with hydrochloric acid, into about 500 C.c. of a solution containing 1 per cent. of iodine and 1·5 per cent. of potassium iodide. The mixture was shaken till the supernatant liquid became perfectly clear, and the precipitate was then separated, quickly washed and dried, first on porous plates and finally in a vacuum over sulphuric acid. The resulting periodide was a dark brown powder, scarcely soluble in benzol, ether, or chloroform, quite soluble in alcohol, and very soluble in a mixture of 4 parts of alcohol and 1 part of chloroform. Chloroform greatly increased the solubility of the compound in alcohol. The periodide has not yet been obtained in a crystalline form, but so far as it has been possible to determine its composition, it is said to correspond to the formula of Lefort and Wurz for emetine—$C_{23}H_{40}N_2O_5$.—*Am. Journ. Pharm.*, 71, 20.

Chemistry of Aloes.

Dr. R. L. Dohme has made comparative assays of Socotrine, Curaçoa and Cape aloes, and finds that they contain approximately the following relative amounts of aloin:—So-called Socotrine aloes (m.p. 103° C.), soft in monkey skins, 7½ per cent.; average of three assays. Curaçoa aloes (m.p. 110° C.), hard and livery and of a light chocolate colour, 18·5 per cent., in three assays. Cape aloes (m.p. 107° C.), hard, glassy, and black in colour, 4·5 per cent., average of three assays. Besides aloin, there is a resin present in aloes, which has not yet been investigated. It is an ester or organic salt—in the case of Barbados aloes a salt of cinnamic acid—and one of the resin alcohols or resinotannols. Tschirch has named it aloeresinotannol. It is a grey-brown powder with the formula $C_{22}H_{26}O_6$, and contains two hydroxyl groups. Cape aloes yield a similar resinotannol but the acid in that case is paracumaric, and not cinnamic. The resin of Socotrine aloes has not yet been dealt with. Another constituent of aloes is emodin, the substance upon which the reaction really depends, and not upon the aloin, in Borntraeger's test for aloes. That reaction is given with Cape, Barbados, and Curaçoa aloes, but not with Natal or with liquid or true Socotrine aloes. Much of the so-called Socotrine aloes of commerce consists largely of Curaçoa aloes mixed with other varieties, and it is urged that inasmuch as Curaçoa aloes is as efficient as, much cheaper than, and often identical with, Socotrine aloes, it should be used in pharmacy in preference to the latter. The presence of emodin in conjunction with aloin is interesting, in view of the fact that the same substance or some similar compound—derived from anthraquinone and homologous or isomeric with emodin—is the cause of the laxative propertics associated with senna, cascara, rhubarb, and buckthorn.—*Druggists' Circular*, 42, 220.

MYRRH AND BDELLIUM.

BY E. M. HOLMES, F.L.S.,
Curator of the Museums of the Pharmaceutical Society of Great Britain.

As previously stated (see last volume, p. 548) the trees found in the districts producing myrrh and bdellium may be conveniently divided into three groups. The first group includes species with

Leaves rarely exceeding 2 centimetres in length; flowers in small lateral clusters.

1. C. MYRRHA, NEES (Fig. 1A).—Central leaflet oblong-lance shaped, toothed near the apex. Lateral leaflets minute, easily overlooked. Leaf-stalk very short. Stone of fruit smooth, ovate, triangular, somewhat compressed, with a fleshy growth at its base. Var. *mol-mol*, Engl. (Fig. 1C): The leaf of this variety does not seem to differ from Nees' plant, but the plant described by Engler under the name of *C. myrrha* (Fig. 1D) has leaf-stalks about as long as the leaves, and the lateral leaflets much larger than in Nees' figure.

The myrrh tree appears to be called "Didthin" or "Didin" by the Somalis, and the product "Mol-mol." Fig. 1A represents th

FIG. 1B.—COMMIPHORA MYRRHA.—Collected by Hildebrandt in Somaliland 1. Branchlet. 2. Leaves. 3. Fruit. One-third natural size. After Bentley and Trimen.

plant figured by Nees von Esenbeck in his 'Beschreib. Off. Pflanz.' (1829), right-hand figure. The plant was collected in Arabia at Ghizan or Gison in lat. 16° 40′. Fig. 1B represents the plant collected by Hildebrandt on the Ahl and Serrut Mountains, west of Cape Gardafui in Somaliland. Fig. 1D is the plant described by Engler as *Commiphora myrrha*, and Fig. 1C is his var. *mol-mol*. It will be observed that whilst Ehrenberg's and Hildebrandt's plants both agree in the shape of the leaf with the var. *mol-mol* of Engler, the typical *C. myrrha* of Engler (from Yemen and Mor in Arabia) has the lateral leaflets much larger, the central leaflet shorter in proportion, and the leaf-stalk longer.

The latter agrees, in fact, fairly well with *Commiphora opobalsamum*, except that it has spiny branchlets and an ovate compressed stone in the fruit. The plant comes near Schweinfurth's specimens from Yemen, called by the natives "Ugge," Fig. 1, which has rather larger leaf-stalks and larger lateral leaflets than 1A and 1D. It may, indeed, possibly be the source of the Yemen myrrh

(which chemically is distinct from Somali myrrh and might well be the produce of a distinct species). It is desirable, therefore, to collect ample specimens of the Yemen plant and the Somali plant in order to determine if they yield respectively the two varieties of myrrh, known as Somali and Yemen myrrh. It is, however, curiously enough, distinctly stated by Engler that *Commiphora myrrh*, is not aromatic and yields no resin.* If that be so it is difficult

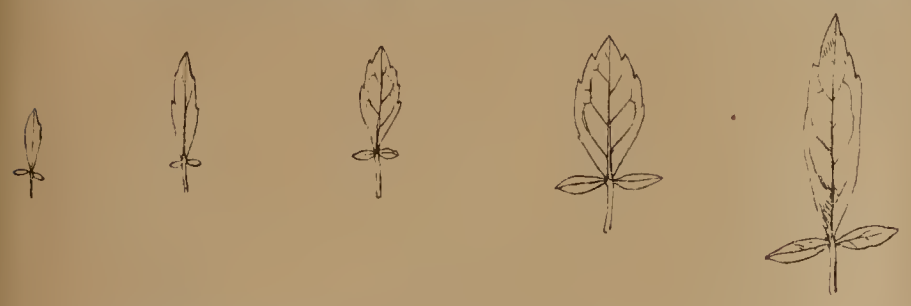


FIG 1c.—COMMIPHORA MYRRHA, VAR. MOL-MOL, ENGLER.—Drawn from material in the Berlin Herbarium.

to understand why he gave it the name *C. myrrha*. It will thus be obvious that there is still considerable confusion concerning the species that yield myrrh.

2. C. PLAYFAIRII, HOOK. f.—Central leaflet not toothed, lateral leaflets very small. Leaf-stalk, hardly any. Stone of fruit smooth,

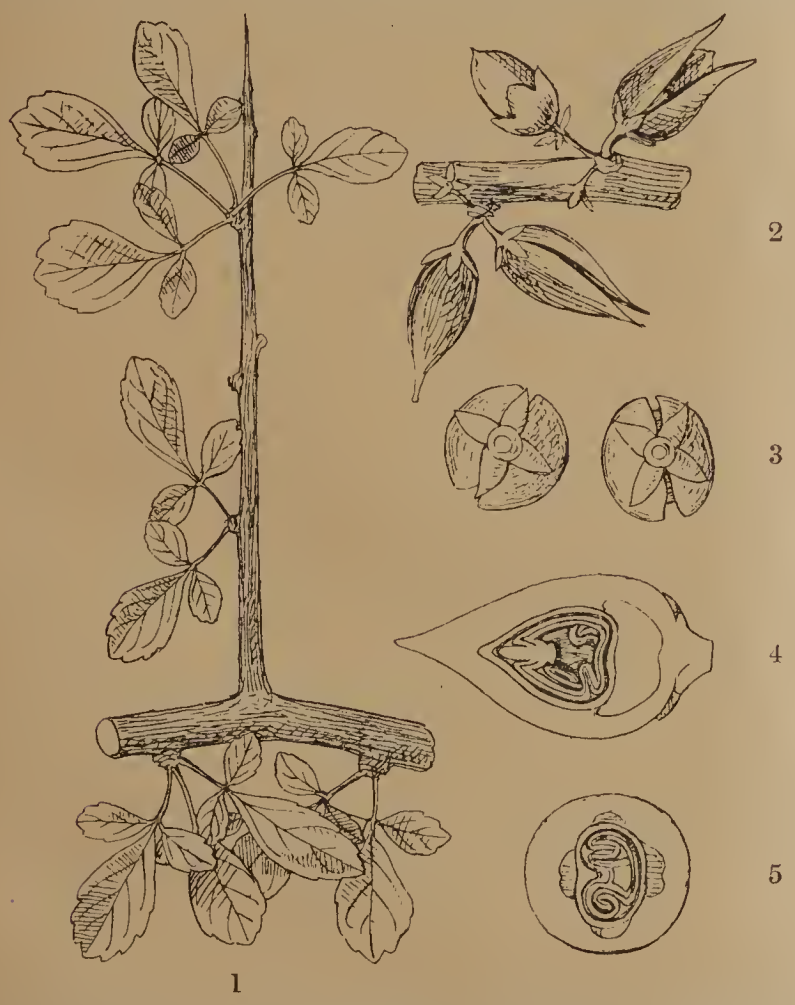


FIG. 1D.—COMMIPHORA MYRRHA, ENGLER.—1. Leafy twig (4 times nat. size) showing thorn. 2. Fruits. 3. Base of Do., showing calyx. 4. Longitudinal section of Do. 5. Transverse section of Do. The twig twice natural size, the fruit sections much magnified. After Engler. (This plant is stated by Engler not to yield any resin.)

convex on one side, and only slightly so on the other, with a slender furrow on the less convex side. A small thorny tree.

There is no doubt that this plant yields the gum resin known as "Hotai," which is used by the Somali women to wash their hair. The specimens of the plant yielding Hotai sent home by Captain Playfair were identified at Kew as a new species, to which the name of *Balsamodendron* (*Commiphora*) *playfairii* was given. It has lately been figured in the 'Icones Plantarum,' plate 2524, having been confused by Engler with his *Commiphora myrrha*. *C. playfairii* does not yield opaque bdellium, as some have supposed, since the latter

FIG. 1E.—COMMIPHORA MYRRHA, ENGLER.—1. Husk removed on one side, showing the stone and fleshy growth at base. 2. Stone, with fleshy growth separated from husk, convex side. 3. Ditto, slightly convex side. 4. Basal view of stone. 5. Lateral view of ditto, the more convex side on the right hand. 6. Stone, natural size. Drawn from authenticated material in the Herbarium of the Pharmaceutical Society.

has a strongly acrid taste, and gives an intense greenish-black colour with tincture of perchloride of iron, which Hotai does not (*P. J.* [3], xi., p. 41). *C. playfairii* grows in the Somali country, near Bunder Murrayeh, according to Vaughan (*P. J.* [2], xii., p. 227). It is a thorny tree growing in the same district as the

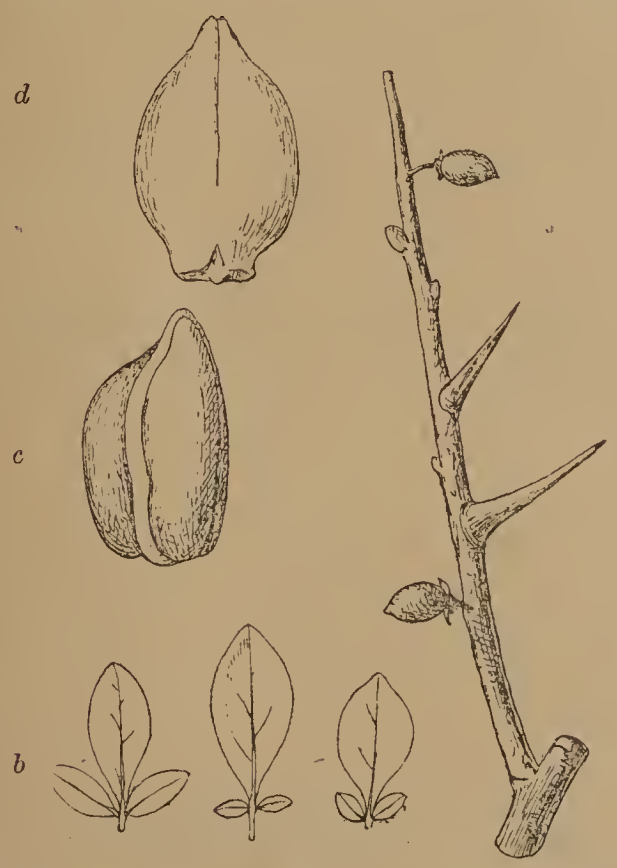


FIG. 2.—C. PLAYFAIRII, HOOK. f.—*a*. Fruiting twig. *b*. Leaves, nat. size. *c*. Stone of fruit enlarged, side view. *d*. Flat side, front view. After Hooker.

myrrh tree, from which it may be distinguished by its thicker leaves, with rather larger lateral leaflets, which are not toothed, and by the almost entire absence of leaf-stalk.

3. C. OPOBALSAMUM, ENGL.—Central leaflet only slightly larger than the lateral leaflets. Stone of fruit elliptical in outline, circular in section, not compressed. Shrub not thorny.

Two or three varieties of this plant exist, one of them (*a. Kunthii*)

* *Die Naturliche Pflanzen-familien*, Lief. 135, p. 254, and *Bot. Jahresbuch*, 1893, p. 95.

having five leaflets instead of three, which are arranged in two pairs with a terminal odd one. The plant also differs from the myrrh tree in not being thorny.

This tree yields the balsam of Mecca or balm of Gilead. On a specimen in the herbarium of the British Museum there is a specimen with a drop of the gum-resin exuded, a particle of which I

Fig. 3.—C. Opobalsamum Engl.—*a*. Showing habit of the plant. *b*. Flowering twig. *c*. Fruiting twig, one-third natural size. *d*. Male flower. *e*. Longitudinal, and *f* transverse section of fruit. After Engler.

was permitted to taste by the former keeper of the Herbarium. It had exactly the lemony flavour characteristic of the true balm of Gilead. This specimen is figured in Bentley and Trimen's 'Med. Plants,' vol. i., pl. 59, fig. 3.

4. C. Quadricincta, Schwf.—The central leaflet is broadly egg-shaped, the lateral leaflets are usually undeveloped, or a minute one is rarely present (Fig. 4). The leaf-stalk is nearly

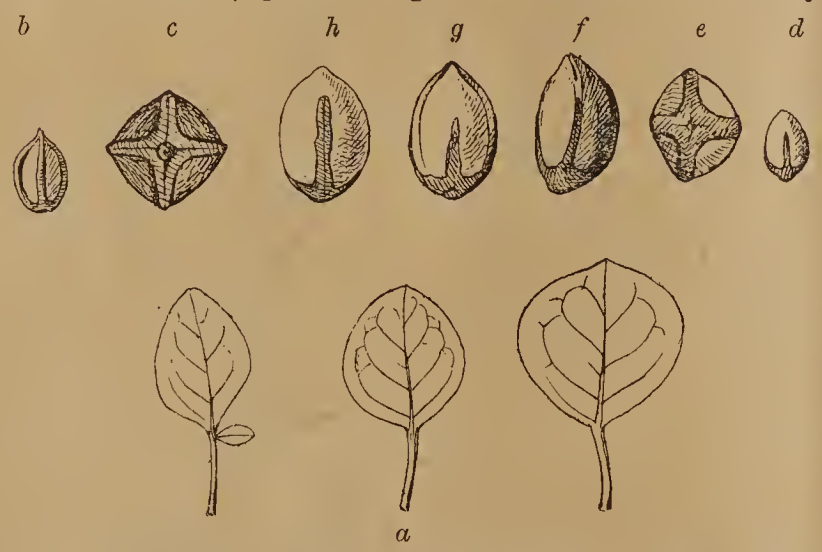


Fig. 4.—Commiphora quadricincta, Schwf.—*a*. Leaves. *b*. Fruit, natural size. *c*. Basal view. *d*. Ditto, stone of fruit, natural size. *e*. Basal view of stone showing four-lobed inner coat, enlarged. *f*. Side view of stone. *g*. Front view of ditto. *h*. Back view of ditto. Drawn from material in the Museum of the Pharmaceutical Society.

as long as the blade of the leaf. Fruit with four angles. The fruit is slightly pointed, but is remarkable for having four prominent angles or ridges, due to the inner coat being developed only in the form of four vertical lines on the sides of the stone of the fruit. The stone is smooth, very convex on one side, but only slightly so on the other, without a distinct point, but with two linear crevices close to the apex on the flattened side. The four-angled character of the fruit is quite distinctive of the species and gives to it its name.

Schweinfurth states that he noticed a number of trees of this species which had been incised, and that the gum resin remaining on the incisions had the "taste and smell of myrrh." But a fragment of the pericarp of the fruit, the only part I have had the opportunity of tasting, did not possess either the bitterness or the aroma of myrrh. It would be interesting to determine which of the gum resins is afforded by this species. The native (Tigre) name of the tree is "Bschiámed" (Schweinfurth, 'Pianti utili di Erythræa,' p. 23).

Fig. 5.—Commiphora Rostrata, Engler.—*a*. Leaves. *b*. Fruit; natural size. Drawn from material in the Berlin Herbarium.

5 C. Rostrata, Engl.—The leaves are described as consisting only of one leaflet, in shape resembling the heart of playing cards, about 2 Cm. long, 1 broad, and furnished with a stalk 4 to 5 Mm. long. The leaf is not hairy. The fruit is unusually long, 1·5 to 1·7 Cm. long, and 5 Mm. thick, with a beak of its own length and a fruit-stalk as long as the fruit. The fruit occurs in July and August. The tree has spiny spreading branches with a brownish bark, and the leaves are crowded at the tip of the branches. The native name of the tree is "Cinau" or "Cinaw." It is found in Somali-land at Webi and Merehan.

Fig. 6.—Commiphora Robecchii, Engl.—Leaves, natural size. Drawn from material in the Berlin Herbarium.

6. C. Robecchii, Engl.—The tree has slender branches sometimes almost without branchlets and the bark has a whitish bloom. The smooth, not hairy, leaves consist of a single leaflet somewhat resembling that of *C. rostrata*, but not so broad and more rounded above, smaller and furnished with a slightly recurved point. The texture is somewhat leathery. The length of the leaf-blade is about 10 Mm., and that of the leaf-stalk 4 to 5 Mm. The flower-stalks are longer than the leaves, and slender. It was found in flower in July and August between Rer es Sagair and Berbera, Somali-land. The fruits have not been described.

(*To be continued.*)

Thiocol.—Thiocol, or potassium guaiacol-sulphonate, contains about 60 per cent. of guaiacol, and is stated to be one of the best preparations for employment in phthisis and similar diseases which require the creosote or guaiacol treatment. The salt occurs in odourless white crystals, very soluble in water, having a bitter taste, with a sweetish after-taste. It is without irritating action on the mucous membrane, and may be given in large doses without the least ill-effect or causing any discomfort to the patient. It may be given in solution, flavoured with any desired adjuvant. As much as 10 or 15 grammes may be given in twenty-four hours without ill effect. In addition to its usefulness in tuberculous cases it also gives good results in chronic bronchitis and in typhoid.—*Wiener Klin. Rund.*, xii., 550.

APOTHECARIES' SIGNS IN THE OLDEN TIME.

BY C. J. S. THOMPSON.

TO those who delight to explore the bye-paths of history and love to linger over the relics of the past, the origin of signs and signboards is a subject of more than passing interest. The origin and rationale of trade signs is by no means obscure, as it can be readily conceived that at a period when few people could read or write some method of indicating the abode and nature of a man's calling or craft became indispensable. In ancient times there was no system of numbering houses, and even the names of thoroughfares were only known by word of mouth, so the adoption of some kind of sign became a matter of necessity. Many of our streets took their names from the signs of the old inns, which were generally the first buildings to be erected in new thoroughfares. Sign-boards were known and used by the ancient Greeks and Romans. To the latter we owe the origin of the bush as a tavern sign, which is used in some parts of Europe for the same purpose to-day. Among the ruins of Herculaneum and Pompeii both printed and carved signs have been discovered. These generally take the form of the tools used by the various artificers, and so used to indicate their craft. Thus have been found a goat, the sign of a dairy; for a baker, a millstone and ears of corn; and for the physician, a cupping glass, etc. The Romans also carved similar signs on their tombs.

From this custom the trade signs that became general in the middle ages were doubtless derived. For this purpose some object or tool typical of the trade or craft was usually chosen, and an enlarged model or picture hung over the doorway of the shop or dwelling. Great care was generally bestowed upon the ornamentation of the ironwork by which it was suspended, and many beautiful examples may still be seen of this class of ironwork. Of these simple signs we have the stocking for the hosier, the fish for the fishmonger, a pair of scissors for the tailor, a bunch of grapes for the vintner, and the pestle and mortar for the apothecary. But as time went on and competition became greater, something more was required, and each trader wanted a special sign to distinguish him from his fellows, and so all kinds and varieties of symbols mythological and astrological were adopted, and the animal and vegetable kingdoms were ransacked to supply the subjects for signboards.

In 1695, the signs in the London streets became so numerous, it was proposed by some ingenious individual to the House of Commons that a tax should be placed upon them, whereby it was stated half a million per annum might be easily raised. This proposal, however, was not carried out.

As education has advanced and our streets have been made wider, the old trade signs have gradually disappeared, with the exception of some that may still be seen in our old cathedral cities and out-of-the-way villages in the country.

Of the various signs used by the apothecaries in the olden times, the pestle and mortar is without doubt the most exclusive and probably the most ancient. These early implements, which have always been identified with the craft, were very commonly employed by the vendors and compounders of drugs. The pestle and mortar of huge dimensions was ever a prominent feature inside and outside the apothecary's shop, and is one of the few old trade signs that still lingers with us. Among the many worthies who used it was the noted John Moore, "author of the celebrated worm powder," as he was wont to describe himself, whose shop stood in St. Lawrence Poultney Lane. He was a firm believer in the value of advertising, and every week the papers of his time contained a glowing account of the wonderful cures resulting from the use of his powders. It was to this old apothecary Pope addressed the following lines:—

> "How much, egregious Moore, are we
> Deceived by shows and forms;
> Whate'er we think, whate'er we see,
> All human kind are worms."

The pestle and mortar were also frequently used as a sign by the early French apothecaries, and we have record of the "Golden mortar," the "Silver mortar," and the "Golden pestle," being employed to indicate certain ancient Parisian pharmacies. The latter historic house, situate in the Rue des Lombards, is said to have been founded in 1423, and is mentioned by Dumas in his romance of the 'Three Musketeers.'

The sign of the "pestle" adorned a famous inn in Paris much frequented by gallants in the sixteenth century. It is said the proprietor adopted this distinctive pharmaceutical sign on account of his living in the Rue de la Mortellerie (Mortar Street).

Another sign much favoured by the early apothecaries was the "Phœnix," which, like the dragon and the salamander, was used to symbolise certain transformations in alchemy and the indestructibility of various bodies. This mythical bird has been used as a sign by Messrs. Godfrey and Cooke since the foundation of their historic house in 1680. The Dragon was another popular sign in the middle ages. The early alchemists generally employed it as the emblem of mercury, and the effigy of this monster was not only suspended over the doors of the apothecaries' shops, but was also frequently painted on the gallipots and otherwise used in the form of decoration. The crocodile, which often hung from the ceiling of the dark laboratory doubtless served to typify this mysterious animal, and inspire awe in those who came to consult the wise apothecary. The marvellous properties once attributed to the horn of the Unicorn was the cause of this mysterious animal being frequently employed as a sign by the apothecaries. The horn was considered an invaluable alexipharmic or antidote to all poisons, and, owing to the difficulty in obtaining it, commanded enormous prices. Its popularity as a sign with the apothecaries doubtless led to the animal being adopted as a supporter for the arms of the Society of Apothecaries when that body was founded. Much interesting lore might be written concerning the unicorn and the quaint traditions connected with it. The land of its birth was always a matter of speculation to the old philosophers. The hunters were said to have great difficulty in getting to close quarters and capturing it owing to its extreme shyness, until its susceptibility to feminine charms was at length discovered, which led to the following method of capture being devised. A young and handsome virgin was taken to the places where it resorted to, and then left to recline on a grassy bank.

Directly the unicorn perceived her, he would come and lie quietly down beside her, resting his head in her lap, and fall asleep, in which state he might be surprised by the hunters who lay in ambush close by. Albertus Magnus, in his work entitled 'De Animalibus,' states, "It is reported that the unicorn's horn sweats when it comes in the presence of poison, and that for this reason it is laid on the tables of the great, and made into knife handles, which when placed on the tables show the presence of poison." This supposed property at a period when secret poisoning was a very common method of revenge or removing an enemy, caused unicorn's horn to be assessed at an enormous value. The usual price charged by the apothecaries in the sixteenth century was £24 per ounce, or about twelve times the current value of

gold. Unicorn's horns were accounted among the most valued possessions of many European monarchs. The chief source of these horns was the narwhal or sea unicorn.

It is a curious fact that the rhinoceros, which was also used as an apothecaries' sign, and still forms a part of the arms of the Apothecaries' Society, was regarded as *the unicorn* by the ancient Egyptians and Hindoos. The same superstitious ideas were connected with its horn, which was used as a remedial agent and an antidote to poisons. Shavings of the horn were said to cure convulsions in children, and drinking cups made from it were supposed to reveal any poisonous draught that might be poured into them, by making the liquor ferment on standing.

Another sign which was somewhat a favourite with the craft was that of "Bel and the Dragon," supposed to have been derived from the apocryphal book of that name, although the heathen god is generally represented on the sign in the form of a bell. It was adopted as the original sign by the house of Corbyn and Co., which firm still preserves a curious stone bas-relief in a room in their warehouse in High Holborn, representing a dragon and a bell.

The burly figure of Paracelsus, whose renown spread throughout Europe in the middle ages, frequently adorned the signs of the apothecaries of the seventeenth century. The "Butler's Head," another common sign, was derived from one Dr. Butler, a physician to James I. According to Fuller, he was "the Æsculapius of that age," and invented a kind of medicated ale, which was sold at the shops bearing the sign of the inventor's head. Butler died in 1617, and, according to Hotten, one of the last of the shops to bear his name stood in a court leading from Basinghall into Coleman Street.

During the early part of the seventeenth century a large number of quack doctors and empirics flourished in London, most of whom combined the callings of physician and astrologer. Among them the "Lilly's Head," derived from the famous astrologer of that name, was a common sign.

Thus we learn from the Bagford Bills (Bib. Harl. 5964) the "Black Bull and Lilly Head" was the sign of one Thomas Saffold, "an approved and licensed physician and student in astrology; he hath practised astronomy for twenty-four years, and hath had the Bishop of London's licence to practise physick ever since the 4th day of September, 1674, and hath, he thanks God for it, great experience and wonderful success in those arts." He was to be found at the "Black Bull and Lilly Head," next door to the feather shops that are within Blackfriars gateway, which is over against Ludgate Church, just by Ludgate in London."

"The Bulls," of one colour or another, were a frequent sign with empirics. Another sign, originated by a quack doctor, was that of the "Anodyne Necklace." This wonderful appliance was as well known to Londoners in the early part of the last century as certain famous pills are to day. The proprietors advertised it extensively in every existing medium, in such terms as the following, which is taken from the *Weekly Journal*, Jan. 4, 1718: "The Anodyne Necklace for children's teeth, woman in labour, and distempers of the head; price 5/-. Recommended by Dr. Chamberlain. Sold up one pair of stairs at the sign of the 'Anodyne Necklace,' without Temple Bar; at the 'Spanish Lady,' at the Royal Exchange, next Threadneedle Street; at the 'Indian Handkerchief,' facing the new stairs in Wapping, etc."

The "Hand and Face" was the sign adopted by another quack doctor who lived in Water Lane, Blackfriars, near the Apothecaries' Hall, in 1735. The "Hand" pointing to some special organ, such as the eye or the ear, was often employed as a sign by these early practitioners; thus intimating to the passers-by that the great doctor who lived within cured the blind or the deaf. The "Hand and Ear," was the sign of S. Ketelby, sworn physician, who practised in Exeter Street, Strand, and according to his handbill in the Harleian collection,

"He is capable now, not-only of curing those incurable by others, but even those he could not cure himself six months ago! Note: He resolves all persons deaf from external causes, whether curable or not, in two minutes, in the dark as well as at noonday, which no other pretender can do, etc." A wonderful physician indeed.

The "Fountain" was the appropriate sign of one Mr. Drinkwater, who kept a shop in the Strand, where according to his advertisement in *The Intelligencer*, of September 4, 1665:—"Monsieur Augier's famous Remedies" were sold, "for stopping and preventing the plague, having not only been recommended by several certificates from Lyons, Paris, Thoulouse, etc., but likewise experimented here by the special directions of the Lords of His Majesty's most honourable Privy Council, and proved by Witnesses upon oath, and several Tryals, to be of singular virtue and effect, are to be had at Mr. Drinkwater's, at the 'Fountain,' in Fleet Street," etc.

Hotten also states the "Two Twins" or "Naked Boys," was the sign of an empiric in Moorfields, near the steps going out of the lower field into the middle field. "There is a door above the steps and another below the steps, with the 'Twins' and the name Langham on both doors." "Keep the bill to prevent mistaking the house or being sent to a wrong place." So ran the quaint handbill of Master Langham.

The "Golden Beard" is the curious sign of an historic pharmacy in Paris, which dates from 1663. Here Master Pomet is said to have written his celebrated 'History of Drugs,' a curious connecting link between pharmacy past and present.

This sign is said to have originated from the following incident —"After the battle of Nancy, wherein Charles the Bold, Duke of Burgundy, was killed by the Duke of Lorraine, the latter went in procession to visit the body, clothed in deep mourning with a golden beard fixed on, that reached down to his waist (after the manner of the old heroes that were knighted for their prowess, who, on a signal victory over an enemy were honoured with such a beard)."

Much more might be written concerning the quaint signs used by the old apothecaries. Of the "Golden Helmet," in Fenchurch Street, where once was sold a strange nostrum, yclept "The Philosopher's Egg," of the "Three Black Lyons" in the Old Bailey, kept by Master Smith, who had the only true receipt for making the celebrated "Vatican Pills"; but these we must leave for another time.

ACCORDING TO OBSERVATIONS made by D. F. Johow in Tropical South America, the number of flowers pollinated by the agency of birds is much smaller than is often stated, being, in fact, nearly confined to those described by F. Müller. Humming birds, in particular, play but a small part in the carriage of pollen, since they feed entirely on insects, and not on nectar. He describes, however, an unquestionable ornithophilous flower in an arborescent species of Bromeliaceæ growing on the Chilian sea-coast, *Paya chilensis*. The "nectar" is exceedingly abundant, but is not attractive to insects, being very watery, and containing only a very small amount of sugar in solution. It is, however, eagerly drunk by humming birds, but more especially by the "Chilian starling," *Curœus aterrimus*; in this way they get their heads plentifully besprinkled with pollen, which they thus carry to other flowers.—*Sizber d. Preuss. Akad. Berlin*, 1898.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, JANUARY 11, 1899.

Present :

MR. WALTER HILLS, PRESIDENT.

MR. G. T. W. NEWSHOLME, VICE-PRESIDENT.

Messrs. Allen, Atkins, Bateson, Bottle, Carteighe, Corder, Cross, Grose, Harrington, Harrison, Park, Savory, Southall, Storrar, Symes, Warren, and Young.

The minutes of the previous meeting were read and confirmed.

The PRESIDENT said the minutes of the last meeting covered a great many points, the only one which he need refer to being the election of Mr. John Frederic Harrington as a member of the Council. He was sure that in the name of his colleagues he might offer Mr. Harrington a hearty welcome on the Council, and felt that in him they would have a very useful addition to their Board. He then proposed that Mr. Harrington be elected a member of the Finance, Library, Museum, School and House, and Law and Parliamentary Committees.

The resolution having passed unanimously,

Mr. HARRINGTON thanked the Council for the welcome accorded to him.

The SECRETARY read a letter which had been received from the Privy Council approving the appointment of the examiners for the year 1899.

THE EXAMINATIONS IN SCOTLAND.

The SECRETARY read a letter from the Privy Council enclosing a copy of Dr. Balfour Marshall's report on the Society's Examinations in Edinburgh during 1898—

Report on the examinations held in Edinburgh by the Society's Board of Examiners for Scotland during the year 1898.

TO THE LORDS OF THE COUNCIL.

My Lords,—I have the honour to report that examinations were held in Edinburgh during the months of January, April, July, and October, 1898, by the Board of Examiners for Scotland. I was present on thirteen occasions, and beg to submit the results of both the Major and Minor examinations.

Major Examination.

	Number.	Percentage.
Candidates examined	10	—
,, who passed	4	40
,, who failed	6	60

Rejected Candidates.

Failed in Practical Work	4
,, Botany	3
,, Physics	1
,, Materia Medica	3
Obtained marks in each subject but failed to get the required aggregate	1

REMARKS.—It is a matter of regret that so few candidates should show a desire to obtain the higher qualification, as, apart from the great personal benefit, it would not fail to add to the status of the profession, if the number of pharmaceutical chemists were increased.

There is a marked improvement this year, 40 per cent. of the candidates having qualified for the higher diploma as against only 10 per cent. in 1897. Practical work is responsible for nearly all the failures, and it is important that candidates should have a thorough training in a good laboratory before presenting themselves for examination.

Minor Examination.

	Number.	Percentage.
Candidates examined	517	—
,, who passed	182	35·20
,, who failed	335	64 79

Six candidates entered but did not present themselves for examination.

Rejected Candidates.

	Number.	Percentage.
(A) Candidates who failed in practical work on the first day and were not admitted to oral examination	215	41·58
Failed in Practical Chemistry	86	16·63
,, Practical Pharmacy	55	10·65
,, both above	74	14·31
(B Candidates who passed in practical work but failed in the oral examination	120	22·82
Did not appear for oral examination	1	—
Failed in Botany	45	—
,, oral Chemistry and Physics	38	—
,, Materia Medica	2	—
,, Prescription Reading	5	—
,, Oral Pharmacy	9	—
Obtained marks in each subject but failed to get the 50 per cent. aggregate required for a pass	20	—

The practice of stopping a candidate whenever he fails in any part of the oral examination makes it impossible to give a percentage of the rejections in each subject.

Candidates were examined on the basis of the old Pharmacopœia, the new edition of 1898 not being enforced till January, 1899.

REMARKS.—There is a slight improvement this year in the percentage of passes, but it is still far from satisfactory that nearly 65 per cent. of the candidates should be rejected, and that 41·5 per cent. should fail in "practical work." Only 302 (58·4 per cent.) out of 517 candidates were admitted to further examination, and of this number 121 were rejected, botany being accountable for 45, and chemistry for 38 failures.

PRACTICAL CHEMISTRY.—160 candidates (30·9 per cent.) failed in this subject. The cause of so many failures seems to be largely due to imperfect training, and not to want of ability. Candidates often show that they have spent much energy in acquiring a number of facts without understanding their correct application, and this is well evidenced in their unsystematic methods in conducting a qualitative analysis.

PRACTICAL PHARMACY.—129 candidates (24·9 per cent.) failed in this subject. The large number of failures in this, the every-day work of the pharmacist, shows only too clearly the absence of proper training. Numerous mistakes arise from inability or carelessness in the reading of the prescriptions to be compounded, so that wrong quantities are used, excessive doses are prescribed, or erroneous directions are written on the labels, a serious matter in any case, but especially so where active poisons form part of the ingredient. There is frequently a want of familiarity with the apparatus of a pharmaceutical laboratory, as well as of the correct methods for making up various preparations.

It may be that some of the students have not sufficient opportunities for becoming thoroughly familiar with all the details of practical pharmacy, under the pharmacists with whom they serve their apprenticeship, and there is a strong argument in favour of systematic training in a well-equipped pharmaceutical school, attendance being incurred by a compulsory curriculum.

BOTANY.—37 per cent. of the failures in the oral examination were in this subject. Many candidates evidently acquire their knowledge of botany by book cramming, with the result that they fail to recognise the very specimens they may be able to give an account of. Students admit having prepared for the examination without having seen any plants or flowers.

PRESCRIPTION READING.—Although the failures in this subject are few, many of the candidates showed great want of knowledge of elementary Latin. They had difficulty in reading abbreviated Latin directions, and in translating these into English, or vice versâ.

ORAL PHARMACY.—Candidates as a rule know the Pharmacopœia well enough, but frequently show that they have deficient practical experience of the processes as carried out in the laboratory, and thus do not have an intelligent idea as to why certain methods, which they can describe, should be adopted.

EXAMINERS.—Two new examiners, Mr. James Jack, Arbroath, and Mr. George Lunan, Edinburgh, were appointed in December, 1897, to replace two whose term of office had expired, and this month Dr. Leonard Dobbin, Edinburgh, succeeded Dr. Gibson as additional examiner in chemistry.

I am able to express entire satisfaction with the manner in which the examiners performed their duties.

REPORT OF EXAMINERS.—I would draw the attention of those responsible for the training of pharmaceutical students to the report prepared by the examiners for Scotland, and printed in the *Pharmaceutical Journal* of 5th February, 1898. Such reports are of undoubted value, and might with advantage be issued periodically.

COMPULSORY CURRICULUM.—Another year's experience of the examinations strengthens my former opinion—that the defects pointed out can only be met by introducing a compulsory curriculum with systematic theoretical and especially practical training in properly equipped pharmaceutical schools.

I have the honour to be,
My Lords,
Your obedient servant,
(signed) G. BALFOUR MARSHALL.

DEATH OF AN HONORARY MEMBER.

The PRESIDENT said he had to refer with great regret to the death, on November 8, of Joseph Bosisto, Companion of the Order of St. Michael and St. George, at Richmond, Victoria, in which colony his name would be inseparably associated with pharmaceutical progress. He was an old student at the Society's School, and always manifested an affectionate interest in the work of the Society. This was prominently shown in 1886, when he came to England as President of the Victoria Commission to the Colonial and Indian Exhibition, for he well remembered his princely hospitality an that occasion. He was elected an hon. member in 1887, and his interest in Australian medicinal plants, which was shown some ten years ago by his investigations into the eucalypti, was continued to the last day of his life. One of his last acts was to send to the Secretary a parcel of roots for scientific examination. He was the founder of the Pharmaceutical Society of Victoria, a member of the Victorian parliament, and had been not inaptly referred to as the Jacob Bell of Victoria.

DIPLOMAS.

The undermentioned, being duly registered as pharmaceutical chemists, were granted diplomas stamped with the seal of the Society :—

Clarkson, James Selfe.
Lycett, Herbert.
Rawling, Joshua.
Smith, Henry Llewellyn.
Walsh, Ernest William.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Abraham, Edward; Prescot
Adams, Robert Alexander; Glasgow
Adamson, William; Sandown
Adan, James Watt; Torphins
Alcock, James Elsworthy; Sheffield
Alder, Sydney Frank; Liverpool
Alexander, Hugh D.; Edinburgh
Allan, William Fleming; Airdrie
Allen, George; Manchester
Allison, William B.; Stoke-on-Trent
Allman, John Dowling; Ealiug
Amoore, Alfred Stares; London
Andrews, Thomas Newton; Plymouth
Andrews, Walter; Winchester
Antcliffe, Herbert; Sheffield
Aplin, John Henry; Trowbridge
Appleton, Thomas Alfred; Fulham
Arundel, Matthew Henry; Highbury
Ascroft, Benjamin; Ince
Aspinall, Hortensius; Newport, Mon.
Atkinson, John Wilson; York
Austen, John; Sheffield
Austin, Josiah; Birmingham
Bagnall, Percy; Ashton-u.-Lyno
Bamford, Thomas B.; Pontycymmer
Bancroft, Charles Frederick; Kineton
Barker, Henry John; Brighton
Barker, John Faulkner; Lancaster
Barnes, Victor G. H.; Market Drayton
Barrett, William L.; Sheerness
Bate, Alexander; Burslem
Baylis, Arthur Edward; Gt. Malvern
Baynton, Charles S.; Birmingham
Beard, James Hogg; Manchester
Beaton, Alfred; Barrow-on-Soar
Beattie, Peter Rattray; Edinburgh
Beedle, Leonard Edward; Brighton
Bell, Peter; Newcastle-on-Tyne
Bellamy, Archibald John; Cardiff
Bellamy, William Arthur; Barnsley
Benjamin, Joseph; Ross
Bennett, Charles Joseph; Widues
Beunett, Charles Thomas; Clapham
Bennison, Ernest C.; Stockton-on-Tees
Berrill, Edith Annie; Stroud Green
Berry, William; Manchester
Billington, Herbert Bennett; Barnsley
Blabey, John Robert; Woolton
Blair, Thomas; Glasgow
Blaker, Ernest James; Petworth
Bland, William Rowland; Blackpool
Blyton, John; Manchester
Bostock, John; Bath
Bourdas, Isaiah, jun.; London
Bowdler, Ernest H.; Wolverhampton
Bowman, Alexander N.; Lochgelly
Boyes, William C.; Barrow-in-Furness
Brack, David George; New Benwell
Brackenbury, W. R.; Middlesbrough
Bradley, Frederick William; Wisbech
Bradshaw, J. E; St. Annes-on-the-Sea
Branch, George Thomas; London
Brand, Roger; Wallsend-on-Tyne
Bransby, Charles Kirby; Manchester
Brian, Ernest; Macclesfield
Bright, George; Swindon
Bright, Thomas; Willesden
Brooke, Edward; Gravesend
Brookes, Alfred; Stalybridge
Broughton, Thomas; Manchester
Brown, John; Kelso
Brown, John; Lowestoft
Browning, Edwin; Plymouth
Buchan, David Donaldson; Arbroath
Buckley, Herbert; Huddersfield
Buckley, James Arthur; Blackpool
Burch, Libbis Napier; Manchester
Burdon, James R.; Bury St. Edmunds
Burrell, Benjamin L.; Notting Hill
Burton, Edmund; Bolton
Callander, Robert Andrew; Edinburgh
Calvert, Albert Boston; Lincoln
Care, Harry Bristowe; Edinburgh
Carr, Charles Frederick; Sheffield
Carr, James A; Newcastle-on-Tyne
Carter, Henry; London
Castle, John William; London
Chalmers, Andrew; Duns
Chambers, Ernest James; Beeston
Charnley, Charles; Wilmslow
Churchill, Arthur Henry; Birmingham
Clarke, John G; Bury St. Edmunds
Clarkson, Albert; Burnley
Clarkson, James Selfe; Brixton
Clarkson, Joseph; Widnes
Cleaver, Samuel; Leicester
Clements, Charles Frederick; Sheerness
Clifford, Thomas Andrews; Kensal Rise
Coates, Udolphus Aylmer; Burnley
Cobb, Herbert Ernest; Brentford
Cockburn, Bertram; Hawick
Cocks, Walter James; Bexley Heath
Cokayne, James; Bristol
Cole, Vincent Theobald; Drumcondra
Coles, Charles N.; Kingston-on-Thames
Collins, Edward de Tedney; Harbury
Collins, Henry George; London
Collishaw, John Edward; Sudbury
Cooke, William; Hodnet
Cooper, Herbert Hudson; Londou
Cooper, William; London
Cooper, W. E., jun.; Upton-on-Severn
Cornwall, Reginald de V.; Salisbury, S.A.
Cottingham, T. H. P.; Market Rasen
Cotton, James Charles; St. Helen's
Crane, John Hammond; Brompton
Critchlow, Henry; Birmingham
Crockart, William; London
Cross, Herbert Francis; Honiton
Cross, Louis Archibald; St. Austell
Curtis, Joseph Levi; London
Cussons, John William; Ossett
Dalby, William James; Bournemouth
Dalton, Thomas Duncan; Sunderland
Davey, Thomas Sercombe; London
Davies, David Sidney; London
Davies, William Henry; Guernsey
Davis, Eleazar; Newport, Mon.
Davis, Frederick; London
Davy, Henry; Worksop
Daws, William Kirk; Hastings
Dawson, John Mark; Manchester
Day, John; Dewsbury
Daymond, Sam; Vauxhall
Deck, Arthur Albert; Cambridge
Dennis, Ernest Edwin G.; Sandiacre
Dennis, James Edward; Nottingham
Dennis, Tom Hawksley; London
Denny, John Harvey; Norwich
Devereux, Arthur Edward: London
Dimbleby, James Orlando; Sheffield
Dixon, Richard Dobson; London
Dodd, William Henry; London
Doe, Walter James; Wimbledon
Donnan, Samuel Boyd; Bowes Park
Dorran, James William; Manchester
Doughty, Thomas Herbert; Catford
Douthwaite, Douglas G.; Godalming
Dowdy, Sidney Ernest; Folkestone
Down, Frank Walter; Plymouth
Downes, William Francis; Altrincham
Drayton, Ernest; New Southgate
Duckering, Richard; Coseley
Duncan, Robert; Harrogate
Duncan, William B.; Portobello
Dunstan, John Frederic; London
Durbin, Herbert Samuel; Putney
Easton, Robert Alexander; Norwood
Eastwood, Thomas Earnshaw; Fairfield
Edge, William Drakeford; Wolstanton
Eley, George William; Burton-on-Trent
Elgar, John Butler; South Hackney
Elkington, C. J., Jr.; Northampton
Ellis, Bernard; Sheffield
Ellis, Charles James; Redhill
Ellis, Hugh Edward; Aberdeen
Emerson, John Thomas; Halstead
Emmerton, Edward; Balham
Epps, James Washington; London
Epton, James; Spalding
Esam, Richard; Leicester
Evans, Alfred Philip; London
Evans, John; London
Evans, Thomas Fryer; Flint
Eyres, John Ernest; Southsea
Fairweather, Ernest Barratt; London
Falck, Charles; Hadfield
Fawcett, Harry Rowlaud; London
Fawn, Frank; Holbeach
Fawssett, Theodore; London
Ferguson, John Alexander; Perth
Fisher, George William; Norwich
Fletcher, Francis Round; Brierley Hill
Fletcher, Herbert Parker; Scunthorpe
Fletcher, Joseph; Scunthorpe
Ford, Horace Sidney; Southsea
Ford, Jessie; Kirriemuir
Ford, Thomas Mills; Lewisham
Forster, George Francis; Ponders End
Foster, Abraham; Dewsbury
Foster, Eruest Lionel; Plymouth
Foster, Ernest Upsall; Harrogate
Fowle, Sydney; London
Fox, George Alexander; Banbury
France, John Richard; Huddersfield
Francis, James; Carnarvon
Francis, John; Aberdaro
Frayn, Alfred; Plymouth
Gadd, Henry Wippell; Exeter
Garbett, Charles; Halifax
Gardner, Frederick William; London
Gardner, William; South Tottenham.
Garry, Walter Finch; Brixton
Garsed, William; London
Gatehouse, William; Northampton
Gavin, Thomas; Manchester
Gayton, Ethel; Hampstead
George, William Foxton; Southsea
Gibbons, Alfred John; London
Gibson, John; Hexham
Gilderdale, Fredk.; Newcastle-on-Tyne
Gilkes, William Henry; Oxford
Glaister, Robert; London
Gledhill, Robert; Dewsbury
Golds, Lewis George; Norwood
Goodall, Thomas Sorby; London
Goodman, Frederick W.; Eccleshall
Gould, Sydney Hartforth; Bath
Gourlay, Robert George; Chester
Gowen, Albert; Fleet
Graham, Joseph; Newcastle-on-Tyne
Grassie, William; Aberdeen
Gray, Clement; Cambridge
Gray, Herbert; Manchester
Green, James; Retford
Greenville, Ernest Gould; Ryde
Gresty, Thomas; Manchester
Griffiths, Arthur Valentine; Huyton
Griffiths, F. G.; Wolverhampton
Gunstone, Herbert Challiner; Oxford
Hackett, John; London
Hadley, Mary Winifred; Birmingham
Hall, John Thomas; Bournemouth
Hall, John William; Peterborough
Hall, Walter H.; Littleborough
Hambrook, Edward Odden; Dover
Hammond, Walter; Leeds
Hammond, William Herbert; Tenbury
Hands, Ernest; Sheffield
Harland, Richard Thomas; Eccles
Harper, John Thomas; St. Leonards
Harper, Theophilus; Belfast
Harrison, John Duffin; Cudworth
Harrison, Sarah Susannah; London
Harry, Seth; Okehampton
Harston, Charles Edward; Lincoln
Hartland, Charles; Redditch
Harwood, Henry Webster; Landport
Hawkins, Thomas; London
Haycroft, John; Florence
Hayes, Richard T. O.; Haywards Heath
Haynes, Edward; London
Haythornthwaite, William; Docking
Head, John Turner; Lewes
Hearnshaw, Arthur D.; Leicester
Heaton John, Appleyard; Burnley
Heddle, James Samuel B.; Glasgow
Henderson, David James; Carnoustie
Henshaw, William Herbert; London
Herd, Thomas S.; Newcastle-on-Tyne
Herington, H. E.; Leighton Buzzard
Herrod, Matthew; Wisbech
Hewitt, Silas; Dukinfield
Hickman, Frederick; Newbury
Hickman, Frederick Stanley; Newbury
Hill, John; Birmingham
Hird, Reuben; Edinburgh
Hirst, Frederick B.; Batley Carr
Hobbs, William Harry; London
Hopkins, John; London
Hopkinson, Walter John; London
Horn, John William; Manchester
Hornby, Frederick William; Sheffield
Horsfield, Jessie Agnes; Rotherham
Hounam, Christopher; Duns
Howell, Ellen May; Hampstead
Hughes, Jacob; Cardiff
Hugill, Edwin Abbott; London
Hurn, Albert Joseph; Streatham
Hutchin, William Francis W.; Burnham
Ibbotson, Oswald; Monte Carlo
Inge, Edward Gane; Haslemere
Inman, Thomas Leonard; Guildford
Ireland, William Ramage; Glasgow
Ireson, Ernest Edward; London
Islip, Charles Cater; Clapham
Jackson, Alexander Logan; Blyth
James, John Earl; Birmingham
Jamie, Robert; Slateford
Jenkins, Henry; Brondesbury
Jenkins, Herbert; London
Jenkius, Thomas; London
Jenkins, Thomas Henry; Stone
Jesper, Charles Frederick; Southport
Jessup, Robert Markham; Grimsby
Johnson, John W. B.; Huddersfield
Johnson, Martin Kemble; Devonport
Johnson, Robert A.; Newcastle-on-Tyne
Jones, Edward David; Llangollen
Jones, George Maurice; Wolverhampton
Jones, Henry Williams; Coventry
Jones, Isaac Amos; Manchester
Jones, John Lloyd; Blaenau Festiniog
Jones, John Rees; West Malling
Jones, Owen; Penmaenmawr
Jones, Thomas; Liverpool
Jones, Thomas William; Kennington
Jones, William; Liverpool
Jones, William Bodwin; Lambeth
Jones, William Parry; Conway
Keall, Allan Adolphus; Swansea
Keir, Charles; Pontypool
Keir, Robert; Dunfermline
Kelf, Henry David; Greenwich
Kempston, Theodore; London
Kennard, John; Birmingham
Kennard, Lilian Sarah; Stanmore
Kerruish, Henry; Douglas
Key, Harry; Birmingham
Kinch, Edward; Cirencester
King, Arthur Edward; Norwich
King, Frank Herbert; Dulwich
Kirkman, W. E.; Hemel Hempstead
Kluge, Herman James; London
Knight, Peter; Harlesden
Knight, Thomas; Crowthorne
Lance, William Davis; Islington
Land, John Henry M; Derby
Lane, William; Manchester
Laverack, Clyve C.; Kennington
Lawton, Richard; Nelson
Laybourn, Robert George; Canterbury
Layman, Charles Noel; London
Le Dain, Nicholas J. F.; Birmingham
Lee, Leonard; Whitchurch
Leefe, Bernard Wrapson; Wilton
Lengden, David Maxwell; Coventry
Litchfield, Ernest; Farnboro'
Lloyd, Henry Bright; Cheltenham
Lloyd, William Howard; Leicester
Long, James Christmas; London
Lovatt, Harry Percy; Todmorden
Luff, Arthur Pearson; London
Luis, Ellia Raphael; Clydebank
Lycett, Herbert; Brixton
Lynn, Robert George; London
Macaulay, Joseph John; Holywood
McDonald, James; Glasgow
McHattie, James Reith; Aberdeen
McKenzie, James; London
McKenzie, James; Singapore
McLaren, James Bryce; Kirkcaldy
McRostie, James; London
McVitie, David William; Maryport
Magnay, William; London
Malcolm, James; Willesden
Manson, John; Springburn
Manson, Stanley J. D.; Rugby
Marriott, Arthur Eustace; Hastings
Marsden, Edward G. L.; Manchester
Marson, William; Stafford
Martin, John; Manchester
Mason, Hugh; Bexley Heath
Masters, Henry Joseph; Leicester
Matcham, Edward; Ipswich
Maunder, William H.; Bournemouth
Melville, John; Dundee
Merrikin, Sydney Herbert; Louth
Merry, Charles; Johnstone
Miller, William Edwin; London
Millidge, Philip H.; Newport, I. of W.
Milligan, William Robert; Haltwistle
Mills, George; Portsmouth
Moore, Arthur; Langley
Moore, Thomas; Stirling
Morley, William John; Guernsey
Morrison, John McGregor; Edinburgh
Morton, Henry Rosser; Weymouth
Morton, Jamieson L.; Ramsbottom
Moss, George Henry; Grange-over Sands
Moverly, Robert; Lowestoft
Murfet, Arthur Hugh; Swaffham
Nelson, John Thomas; Blyth
Nesbit, James; Portobello
Newey, Jonathan; Birmingham
Newey, Walter; Stechford
Newton, George Robert; Hull
Newton, John; Liverpool
Newton, Thomas Hill; Hull
North, Thomas Henry; Exeter
Northey, Sydney Moore; Wadebridge
Noyes, Edward Thomas; Richmond
Nundy, William Lockwood; Acton
Oates, Cleophas Henry; Bradworth
Ogden, Alfred; Radcliffe
Openshaw, John W. W.; Blackburn
Orme, Arthur John; London
Orrell, William Pilling; Stockport

Osborne, George Cooch ; Bruton
Paine, Charles S. ; Market Drayton
Park, David Scott ; Sunderland
Pars, Charles F. R. ; Bournemouth
Pattison, George ; Darlington
Payne, Herbert ; Brixton
Payne, Joseph Hind ; Thrapston
Peck, Harold Robinson ; Cambridge
Penty, George ; Bradford
Phillips, George ; Carmarthen
Philpott, Frederick William ; Oxford
Pick, Frank Phillips ; Barnsley
Picken, Charles Reynolds ; Newport
Pickering, George Alfred ; Royston
Pickworth, George Boyer ; Blackburn
Pierce, John James ; London
Pinkerton, William Robert ; Glasgow
Pirie, James Metcalfe ; Edinburgh
Pitchford, William ; Bristol
Platt, George ; Ashton-under-Lyne
Plevin, John ; Liverpool
Poingdestre, Charles R. ; Jersey
Porter, Albert ; Ross
Potter, William ; Plaistow
Powell, Samuel Rider ; London
Powers, Thomas ; Stratford-on-Avon
Pratt, Thomas Henry ; Newbury
Prebble, John George ; Lydd
Prescott, John ; Lee
Preston, Thomas Issott ; Leeds
Price, John Thomas ; London
Procter, Robert ; London
Proctor, Ernest Anthony ; Brighton
Pryce, Alfred Clement ; London
Ralph, Frank Horatio ; Plymouth
Randall, Augustus F. P. ; Swanage
Rawling, Joshua ; Cockermouth
Raywood, Vaughan R. ; Sydney
Reade, John Edmonds ; Audlom
Reed, Joseph ; London
Reid, Charles Joseph ; Southampton
Reid, Charles Stewart ; Acton
Rennie, Alexander ; Mintlaw Station
Rhoden, Samuel Thornton ; Sheffield
Richardson, Harold ; Harrogate
Ridyard, Clement William ; Boston
Riley, Alfred ; Bradford
Riley, Stanley ; Blackburn
Robbins, Robert William ; London
Roberts, John ; Denton
Robertson, George ; Woodford Green
Robertson, James ; Peterhead
Robinson, Charles Bradshaw ; Bombay
Robinson, Richard Charles ; Liverpool
Roe, Alfred ; Geneva
Roe, George ; Fulham
Rogers, Fredk. Hughes ; Altrincham
Rollett, Harry ; Wrentham
Rollin, Arthur S. ; Great Malvern
Rose, George ; Manchester
Rowan, William ; Glasgow
Sadler, Frank William ; Brighton
Samuel, Harry Thomas ; Holloway
Sankey, Joshua ; Blackpool
Saunders, John ; Walham Green
Savill, William Arthur ; Portsea
Sayers, Frederick William ; Paris
Scott, Henry ; Sheffield
Scott, Henry ; Keswick
Seaborne, Lionel Dunsford ; Wombwell
Selby, Joseph ; Birmingham
Shackleton, George H. ; Abergavenny
Shannon, Robert James ; London
Sharrah, Richard ; Wandsworth
Shepperd, William John ; Cannes
Sherriffs, Alexander ; Ayr
Shirras, Alexander Wilson ; Aberdeen
Shorthouse, Herbert S. ; Birmingham
Sillitoe, Harry Archibald ; London
Simons, William ; Sheffield
Simpson, Dundas ; Redditch.
Simpson, Robert ; Bolton
Simpson, Robert Thorburn ; London
Siviter, William O. B. ; Waltham Cross
Skipworth Bertram G. ; Grantham
Skyrme, Harold Edgar ; Cardiff
Slack, John Lawrence ; Manchester
Sletcher, Henry George ; Brighton
Sloman, Frank ; Gravesend
Smalley, John Robert ; Preston
Smallwood, F. W. ; South Kensington
Smith, Gilbert ; London
Smith, Harry ; Sheffield
Smith, Hedley Crossley ; Stroud
Smith, James W. ; Stony Stratford
Smithies, William Edward ; Elland
Smyth, Thomas Spring ; London
Spence, Alexander ; Linlithgow
Spiers, William ; London
Spurway, William James ; Camberwell
Stabler, Edgar ; Milnthorpe
Stables, James Ernest ; Kendal
Staton, John ; Hackney
Stedman, Walter ; West Malling
Stewart, Jeanie ; Darval
Stewart, Robert McAll ; Kingsbridge
Stewart, William Napier ; Glasgow
Stirling, John ; London
Storie, Robert ; Dalkeith
Stothert, James ; Atherton
Strachan, John ; London
Strong, Alfred Ernest ; Durham
Strutt, Edward Belper ; Birmingham
Surman, Thomas William ; London
Sutherland, Alexander G. ; Glasgow
Suttie, Joseph Henry Cole ; Bearsden
Sykes, Harry ; Wellingborough
Symons, William Henry ; Bath
Taylor, Alexander Nicol ; Dundee
Taylor, Samuel ; Manchester
Taylor, William ; Padiham
Thacker, Charles Baildon ; Hadleigh
Thackrey, Frank ; Leeds
Thiele, Johann Fritz ; London
Thirlby, William ; Leicester
Thomas, Isaac Jenkin ; Maesteg
Thomas, John Oliver ; London
Thomas, William Henry ; Bristol
Thompson, Alfred ; London
Thompson, Edward ; Highgate
Thompson, James Atkinson ; London
Thompson, Laurence Noel ; Dumfries
Tinker, Henry ; Manchester
Todd, Robert A. McLaren ; Willesden
Tomlinson, Nehemiah ; Burnley
Towan, Frederick W. ; Devonport
Travis, Henry Arnold ; Manchester
Trebilco, Arthur James ; Bristol
Trew, Henry Edward ; Bristol
Trunchion, Herbert Fawdon ; London
Tulley, Frederick Rudrum ; London
Turner, John ; Cranbrook
Turner, John Scriven ; London
Turton, Herbert ; Stockton Heath
Twiss, William ; Hunstanton
Tyson, John ; Manchester
Unsworth, John W. ; Altrincham
Uttley, Luke ; Chelmsford.
Vallet, Cyril E. Franklin ; Gunnersbury
Veitch, George Hutchison ; Ceylon
Vincent, William ; Bordighera (Italy)
Wade, Margaret Callender ; Dartford
Walker, Arthur ; London
Walker, George ; Dewsbury
Walker, John ; Cleckheaton
Walker, George Bilderbeck ; London
Walker, William Henry ; Willenhall
Wallace, Hugh Gray ; Southsea
Wallace, William Henry ; Brixton
Wallace, William John ; London
Wallis, Thomas Edward ; London
Walsh, Ernest William ; Blackburn
Walton, Frederick George ; Darlington
Walton, John ; Brixton.
Ward, William Henry C. ; Catford
Wass, Charles ; Spalding
Wathes, Arthur ; Birmingham
Watt, Marshall Keith ; Aberdeen
Watkins, Horatio Ernest ; London
Watson, James Edward H. ; Norwich
Webb, William J. ; Saffron Walden
Webster, Bertram ; Enfield Town
Weight, Samuel Thomas F. ; London
Welford, Richard ; Colney Hatch
Wells, Louis John ; Bradford
Westerman, Thomas K. ; Huddersfield
Weston, M. F. ; Newcastle-on-Tyne
Wheeler, Ernest John ; London
Whineray, Edward ; London
White, Robert S. ; Halifax
White, Woolmer R. D. ; Portsmouth
Whitehead, Herbert J. ; Birmingham
Whiting, William ; London
Whittaker, Frank ; Glasgow
Whittle, George ; Birmingham
Whittle, Hugh ; Oldham
Whitworth, Frederick W. ; Sheffield
Wiggin, Charles Watkin ; Woodford
Wilkes, Harry Smith ; London
Wilkinson, John E. B. ; London
Willcox, Harriett ; Birmingham
Williams, Gregory T. ; Cowbridge
Williams, John ; London
Williams, Richard John ; Carmarthen
Williams, Roger Matthew ; London
Williams, Thomas Robert ; Penge
Williams, William ; London
Williamson, Thomas ; Oswestry
Wills, Alfred George ; Bristol
Willson, Walter H. ; Bradford-on-Avon
Wilson, John Lochhead ; Irvine
Wilson, William Potter ; Haddington
Wilton, Walter Ernest ; Erdington
Winzer, Edmund ; Greenwich
Wise, Guy William ; Rickmansworth
Withers, John Thomas ; Ventnor
Withington, Henry Martin ; London
Wolstenholme, Austin W. ; Clapton
Wood, Henry ; Walmer
Woodruff, Walter ; Cheadle Hulme
Woods, Joseph Francis ; Liverpool
Woodward, Harrison ; Rochdale
Woodward, Robert ; Harwich
Woolldridge, Thomas ; Haslar
Woolman, Thomas ; Chester
Wootton, Joseph Frederick ; Thirsk
Worrall, Harry ; Leamington
Wright, Eli ; Birmingham
Wright, John ; Edinburgh
Wright, John Leonard ; Liverpool
Wright, John Todd ; King's Lynn
Wright, Robert Fitch ; Northampton
Wylde, John ; London

Election of Student-Associates.

The following, having passed the "First" examination and tendered their subscriptions for the current year, were elected "Student-Associates" of the Society :—

Allkins, Reginald Samson ; Tamworth
Bannister, Frank Ewart ; Netherton
Barkes, Arthur ; Fence Houses
Bathurst, Ernest F. ; Tewkesbury
Belsher, Henry E. ; Kingswood
Bennett, Reginald Robert ; Dover
Bentley, Lumley Scurr ; Leeds
Beynon, John Thomas ; Carmarthen
Bickford, Harding ; Hampstead
Boxall, Thomas William ; Cosham
Bradbury, Constance ; Ryde
Browse, Lewis Alexander ; Uddingston
Buckingham, Frank E. ; Harleston
Butler, George Edward ; Bromley
Carlton, William Eldred ; Gosberton
Cheetham, Thomas H. ; Sunderland
Child, Grahame Sargent C. ; Newnham
Clarke, Henry Pitman ; London
Cofman, Joseph ; London
Cole, William Parmiter ; Weymouth
Coleman, Joseph ; Bishop Stortford
Coles, Charles Avery ; Reading
Coney, Joyce Muriel ; London
Cooper, Walter Mell ; Sheffield
Cowburn, Joseph Robert ; Boston
Dodd, Alfred John ; Ripley
Drayton, George Selby ; Bridport
Dunford, Walter Henry ; Clevedon
Dunn, William Robinson ; Blackheath
Ellison, Charles Kitchen ; Skipton
Evans, Evan ; Chester
Ewell, Ernest William ; Dover
Farnworth, Samuel ; Bolton
Fearis, Walter Hart ; Colchester
Finegan, Richard Joseph ; Liverpool
Forrester, Andrew, Jun. ; Glasgow
Fox, Clara Minnie ; Birmingham
Furness, Sydney Edward ; Clerkenwell
Goodenough, Joshua Mann ; Somersham
Gould, Christopher C. ; S. Godstone
Gower, Herbert C. A. ; Tunbridge Wells
Greaves, Sydney Chater ; Chesterfield
Gregory, Nicholas ; Whitehaven
Hackney, Irene Mary ; Middlesbrough
Hague, Ernest Harold ; Widnes
Haigh, William ; Clayton
Hallam, Albert Ernest : Leicester
Halstead, Harold B. ; Rawtenstall
Hamlin, Hourston ; Dartford
Hands, George Walter ; Birmingham
Harrington, H. D. ; Bury St. Edmunds
Hartley, Charles Quarmby ; Leeds
Hawkey, Edgar ; South Molton
Heely, Frederick W. ; Gt. Grimsby
Hinks, Frederick C. E. ; Old Swindon
Hird, William Smith ; Ulverston
Hitchen, Clement Farnell ; Halifax
Hoadley, Arthur James ; Rotherfield
Hogg, John Alec ; Kingskettle
Hooker, Ernest Richard ; Brighton
Howarth, Sam Crabtree ; Norden
Huck, John Robert ; Darlington
Hudson, George Charlton ; London
Hutt, Sydney George ; Cambridge
Ingham, Edgar Foster ; Sunderland
Johnson, Frank ; Highbury
Jones, Belmont ; London
Jones, Gwilym ; Criccieth
Josty, Waldemar ; Cardiff
Juleff, John, Jun. ; Clapham
Kilner, Thomas C. ; Listerhills
Lee, Henry Cuthbert ; Skegness
Lenton, John Herbert ; Witney
Llewellyn, David Lewis ; St. Clears
Lloyd, Gwilym Henry ; Carmarthen
Lloyd, Morris Wyn ; Colwyn Bay
McGlinchy, William Owen ; Camberley
Mack, George ; Edinburgh
Mann, Ernest William ; Birmingham
Marshall, Gerald Arthur ; Barrow
Mather, John F. C. B. ; Buckie
Mellor, Reginald J. ; Hemel Hempstead
Middlemass, J. S. ; Stockton-on-Tees
Millar, Benjamin ; Darlington
Miller, Edward ; Bloxwich
Mills, Sydney ; Nuneaton
Mitchell, Herbert G. ; Boscombe
Monks, Edgar Kingsley ; Bristol
Ness, Alfred ; Kennington
Norris, Harold ; Bath
Oxley, Harry ; Edinburgh
Palmer, Charles Ernest ; Wingham
Pearce, Rosa Adeline G. ; Cainscross
Pickles, Frank ; Grantham
Pickles, Walter Howard ; Liscard
Pike, Herbert William ; Andover
Poole, Edwin ; Sandbach
Preston, Ben Mountain ; York
Priest, William ; Huddersfield
Purdy, Ernest Gibson ; Seacroft
Ransom, William Thomas ; Holt
Revill, George Edwin ; Romford
Robinson, John S. ; Bishop Auckland
Robinson, Richard A., Jun. ; Brompton
Rogers, Edward Wilson ; Gateshead
Rumsey, James Charles H ; Dulwich
Sanders, Charles ; Smethwick
Sansom, Henry Croucher ; Cosham
Schofield, Bowker ; Burnley
Sharpley, Major ; Market Rasen
Shaw, Vincent ; Huddersfield
Sixsmith, J. Edward ; Wigan
Smart, Frederick ; Steyning
Smith, Arthur Richard ; Milverton
Snowden, Arthur Sydney ; Scarborough
Spanton, George Furley ; Ramsgate
Spencer, Harry Herbert ; Barnes
Spencer, Rosa K. ; High Wycombe
Taylor, Emma Bennett ; Hungerford
Taylor, John Edward B. ; Colwick Vale
Thomas, Herbert Charles ; London
Tibbit, Leonard Read ; Bedford
Vincent, Caroline ; Ryde
Wallis, Sydney Wilson ; Marlow
Walsham, William ; Gedney
Watmough, Arthur Charles ; Hull
Watt, William ; Aberdeen
Weall, Horace Graham ; Maidenhead
Whitaker, J. E. ; Barrow-in-Furness
White, Walter ; Newport, I.W.
Whitehouse, Colston Henry ; Bristol
Wilkinson, William John ; Grantham
Willcock, Walter Wilkie ; Exeter
Williams, Thomas ; Aberayron
Williams, Thomas Henry ; Swansea
Williams, William Thomas ; Llanidloes
Wilson, Robert ; Liverpool
Winston, William Ripley ; Ulverston
Woollatt, Percy Charles ; Ware
Wright, Arthur ; Barnsley
Yates, Matthew ; South Shields

Restorations to the Register.

The names of the following persons, who have made the required declarations, and each paid a fine of one guinea, were restored to the Register of Chemists and Druggists :—

Edward Haynes, 30, Southampton Row, London, W.C.
Thomas Thomas, 752, High Street, Athercliffe, Sheffield.

The PRESIDENT remarked that out of the list of more than 600 members just elected about 300 were associates not in business, which was very satisfactory, and he hoped that still more of the

same class would see their way to avail themselves of the privilege now accorded them of becoming members of the Society.

Mr. YOUNG asked if it were a fact that the percentage of failures in the scientific subjects of botany and chemistry had increased since the appointment of professional examiners.

The PRESIDENT was not prepared to answer the question offhand, as it would involve a study of the records and the system under which they worked.

Mr. YOUNG said he only referred to the subject because he was apprehensive that too much importance was attached to the subject of botany.

The PRESIDENT said the report which had been read dealt with the Board of Examiners in Scotland, where over 41 per cent. had failed in practical chemistry and practical pharmacy.

REPORT OF THE FINANCE COMMITTEE.

The report of this Committee was read, recommending sundry accounts for payment.

The PRESIDENT, in moving the adoption of the report and recommendations, said there was nothing outside the ordinary character to which he need call attention. He was pleased to announce the receipt of two donations to the Benevolent Fund—one of 5 guineas from the students of the Metropolitan School of Pharmacy, and another of £50 from the Camwal directors, for which the thanks of all pharmacists were due.

The resolution was at once carried unanimously.

REPORT OF THE BENEVOLENT FUND COMMITTEE.

The report of this Committee included a recommendation of grants to the amount of £90 in the following cases :—

A former associate in business (46). (Birmingham.)

The widow (70) of a chemist and druggist, who has had thirteen previous grants. (Forest Gate.)

The widow (65) of a chemist and druggist, who has had three previous grants, and who endeavours to maintain herself by needlework. (London.)

The widow (76) of a pharmaceutical chemist member (1842-85) and subscriber (1872-85), when he died, having been in business fifty-five years. Since then applicant has been maintained by her children, who are no longer able to do so entirely. (Liverpool.)

The widow of a pharmaceutical chemist (60), who has had one previous grant. (London.)

The widow (64) of a former member, who himself was twice assisted by the Fund, and died in November last. Applicant is in ill-health and unable to earn anything. (Gravesend.)

The widow (63) of a chemist and druggist member (1871-8) and subscriber, an unsuccessful candidate at the late election for an annuity. (Forest Gate.)

A registered chemist and druggist (63), who was an unsuccessful candidate at the late election. (Cley-next-the-Sea.)

Two cases were deferred for further information and one was not entertained.

The SECRETARY reported the death, on December 6, 1898, of George Foster, aged 84, who had been an annuitant since December, 1897, and of Emily S. Sowter, aged 64, on January 4, 1899, who had been an annuitant since December, 1887.

The VICE-PRESIDENT moved the adoption of the report, which passed unanimously.

It was resolved that, during the absence from England of the Treasurer, the President be authorised to sign cheques on his behalf.

REPORT OF THE LIBRARY, SCHOOL, AND HOUSE COMMITTEE.

The report of this Committee stated that the Librarian had presented his usual report, including the following particulars regarding attendance at the Library :—

	Attendance.	Total.	Highest.	Lowest.	Average.
November	Day	528	32	6	20
	Evening	114	19	2	5

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
November	180	84	96	19*s.* 1½*d.*

The Committee recommended that the undermentioned books be purchased for the Library in London :—

Beasley's Formulary, 12th edition, by Braithwaite.
Trimen's Flora of Ceylon, vol. 5, by Hooker.

The Committee ordered that the Society's House be closed on December 26 and 27, and that the Library and Museum be closed at 5 p.m. on December 28, 29, and 30.

The Curator's report had also been received, and included the following particulars :—

	Attendance.	Total.	Highest.	Lowest.	Average.
November	Day	479	29	10	18
	Evening	43	4	1	2

Several donations to the Library and Museum had been received (see *P. J.*, December 17, p. 648), and the Committee had directed that the usual letters of thanks be sent to the respective donors.

The Committee had appointed Mr. A. J. Phillips as the Society's representative on the Board of Trade Committee for the revision of the medical scales under the Merchant Shipping Acts.

The PRESIDENT, in moving the adoption of the report and recommendations, said a letter had been received from the Board of Trade thanking the Council for having made the appointment as requested.

The resolution was at once agreed to.

REPORT OF EXAMINATIONS.

January, 1899.

	Candidates. Examined.	Passed.	Failed.
England and Wales :—			
Major	16	5	11
Minor	275	75	200
Scotland :—			
Major	1	0	1
Minor	96	28	68

First Examination.

Thirty-one certificates by approved examining bodies were received in lieu of the Society's examination.

An application to receive a certificate from the Pharmacy Board of Victoria in lieu of the First examination was referred to the Board of Examiners.

APPOINTMENT OF LOCAL SECRETARY.

Mr. R. STORIE was appointed Local Secretary for Dalkeith.

THE NEXT PHARMACOPŒIA.

The PRESIDENT said he had received a letter from the President of the General Medical Council, making certain suggestions with reference to the next Pharmacopœia. He would suggest that this letter be referred to the General Purposes Committee for consideration and report.

This was at once agreed to.

CORRESPONDENCE.

The PRESIDENT said he had before him a mass of correspondence and resolutions which had been passed at various meetings of local associations with reference to subjects of vital interest to pharmacists. He thought it would be more convenient if, instead of reading the resolutions in full to the Council, he asked the Secretary to read an epitome which had been prepared.

The SECRETARY said the first was from Wrexham—a resolution to support the Society in opposition to company illegal trading—and covering the same with qualified men. The Sheffield Pharmaceutical Society approved the Council's action in communicating with the Lord Chancellor. Northampton asked for a Bill containing clauses making the 1868 Act apply to companies : restricting dispensing to registered men, and exempting them from jury service, but was of opinion that no further Parliamentary action was desirable with reference to the storage of poisons. From Bristol there was a resolution that legislation was needed to prevent the carrying on of business by unqualified persons, and to restrict dispensing to registered persons ; in favour of poison regulations, and of modifying or abandoning the "Widow's Clause." The Leicester chemists thought the word "person" ought to include "persons" ; that the trade generally ought to join the Society, and that the 1871 recommendations should be modified before being made regulations, Part II. being considered somewhat unworkable. From North-East Lancashire there was a resolution urging the Council to take immediate steps to test the legality of the use of the title by limited liability companies. From Aberdeen the following programme was recommended :—The registration of pharmacists trading under ancient titles, the prohibition of company trading and the use of the title "chemist" by companies, the repeal of the "Widow's Clause" or the restriction of its operation to a maximum of twelve months, the disestablishment of the Journal and a reduction in the annual subscription. From Blackpool there was a requisition to the Council to test the legality of the use of the title by limited companies. From Preston there was a similar requisition. From Lancaster and Morecambe a similar requisition. From Plymouth there was a resolution recommending (1) an increase in membership of the Society, (2) the adoption of the 1871 recommendations as a code of poison regulations, and enforcing the same, (3) the formulating of legislative powers to secure penal powers for dealing with "covering" and other offences against the spirit of the Act. From Glasgow there was

a resolution approving the action of the Council with respect to company trading, and in favour of the 1871 recommendations being made regulations. From Dewsbury there was a resolution in favour of Mr. Robinson's motion, but suggesting that it be modified in accordance with the suggestions of Mr. Proctor.

The President said it was very satisfactory to have evidence of so much life in the various centres, and that these matters, which were of the greatest importance, were receiving careful attention. He should suggest that these resolutions and the correspondence in connection with them should be referred to the Law and Parliamentary Committee. With regard to the Poison Regulations which were to be considered that afternoon, there were about fourteen resolutions in favour of regulations of some kind, and only one absolutely adverse, but of those fourteen, while five bodies signified their approval of the existing recommendations, three thought they should be modified, and six, while in favour of some regulations, did not indicate what they should be. With reference to the suggestion that a registered person should be sent to Parliament at the expense of the trade, he had no doubt, if the money could only be found, they would be able to find a Parliamentary candidate. The Council would agree that it was very satisfactory to find that their friends throughout the country were taking a real interest in those matters, as it strengthened their hands to find that such matters were receiving attention in all parts of Great Britain.

Mr. Symes said a meeting had been held in Liverpool at which a resolution was passed in favour of adopting poison regulations.

The President said they had not yet had official notice of it, as in the case of a resolution which had been passed at Newcastle. It was unanimously resolved to submit the above communications to the Law and Parliamentary Committee.

Report of The General Purposes Committee.

The President said the only matter dealt with by this Committee to which he need refer in publication was a letter from the Privy Council enclosing a communication from Professor George Darwin, drawing attention to the public danger arising from the indiscriminate sale to children of "Pharaoh's serpents," made of sulphocyanide of mercury. The Committee recommended that he (the President) should have an interview with the Clerk of the Privy Council on the matter.

This recommendation was adopted. The Council then went into Committee to consider the legal portion of the report.

On resuming, the report and recommendations were unanimously adopted, and special resolutions were passed authorising the Registrar to institute proceedings against the persons named.

EXAMINATIONS IN LONDON.

January, 1899.

MAJOR EXAMINATION.

Candidates	examined	16
,,	failed	11
,,	passed	5

Clarkson, James Selfe
Lycett, Herbert
Rawling, Joshua
Smith, Henry Llewellyn
Walsh, Ernest William

MINOR EXAMINATION.

Candidates	examined	275
,,	failed	200
,,	passed	75

Atkinson, John Wilson
Bambrough, Wilfrid Ernest
Barritt, Percy
Bell, Charles Edward
Benton, Alfred
Booth, John
Bowness, John Harrison
Butlin, James Franklin
Clarke, Frederick Stanley
Cornick, Ernest Edward
Cottingham, Thomas Henry Percival
Davies, Dan
Davies, John
Davies, Sidney Edward
Davis, Oliver Charles Minty
Dawson, John Mark
Downar, Frederick William
Eley, George William
Evans, Joseph Edward
Fisher, Sidney Ralph Parkinson
Fox, George Alexander
Garbett, Charles
Giles, Frank
Gratte, Thomas Brooke
Gray, Clement
Groves, Thomas
Guest, George Ernest
Hartley, Albert Edward
Hatt, Harold Ernest
Heaton, Wallace Evans
Howard, Percy
Jones, Humphrey Richard
Jones, John
Kelsey, Arthur Machen
Land, John Henry Mcginley
Llewellin, John Howard
Lofthouse, John Willie
MacSweeny, Eugene
Marsden, Joseph
Marshall, William Benjamin
Martin, Arthur Benjamin
Meadley, George Holmes
Metcalf, Harry Railton
Middleton, Burton
Milling, John
Moore, Richard Herbert
Morgan, Daniel
Mortimer, William Henry
Nash, Ernest
Noble, Harry William
Northey, Sydney Moore
Palmer, James Marsh
Postlethwaite, Richard George
Reid, Charles Joseph
Roper, Frederick Thomas
Roy, Louis Leslie
Samuel, Harry Thomas
Seaber, Charles William
Sillitoe, Harry Archibald
Simpson, Henry Higson
Skyrme, Harold Edgar
Smith, Charles Henry
Smithson, George William
Sowray, Walter
Spafford, Alexr. Nicholson D. E.
Stables, James Ernest
Thackray, Charles Frederick
Thompson, James
Todd, John William
Tomlin, Ellis
Turner, John Scriven
Williamson, David
Williamson, George
Wilson, Ernest Joseph
Wilson, William

EXAMINATIONS IN EDINBURGH.

January, 1899.

MAJOR EXAMINATION.

One candidate was examined, and failed.

MINOR EXAMINATION.

Candidates	examined	96
,,	failed	68
,,	passed	28

Aitken, Francis
Bayes, James Austen
Beveridge, William
Bowman, John Robertson Young
Brewis, James Colin
Brown, Alexander
Ferguson, Duncan
Findlay, George
Geddes, James Largue
Gilmour, John
Glass, James Grant
Hall, Lennox Harper
Harvie, Henry Taylor
Hird, Reuben
McEwen, William
Milligan, William Robert
Purves, William James
Ramsay, Robert Sparks
Rodwell, Henry
Ross, Roderick
Rutherford, John
Scott, Philip
Senior, George
Simpson, Henry
Simpson, John Forsyth
Smith, Harry
Stewart, Charles
Tavendale, Peter

FIRST EXAMINATION.

Certificates by approved examining bodies have been received from the undermentioned in lieu of the Society's examination :—

Bonello, Francis ; Malta
Brayshay, Bertie Thomas ; Stockton
Bufton, William Reading ; Hereford
Campbell, Francis Thomas ; Wigton
Challenger, E. J. ; Weston-super-Mare
Chapman, Andrew ; Stone
Cole, Georges M. J. ; Jersey
Edmonson, John ; Padiham
Evans, Evan ; Chester
Evans, William Llewelyn ; Eastcombe
Gower, Percival Thompson ; Tonbridge
Greensill, Douglas ; Douglas
Hall, William Edward ; Kennington
Harrington, H. D. ; Bury St. Edmunds
Harry, Charles ; Okehampton
Harvey, Maurice George ; Margate
Jelbart, George Henry ; Edinburgh
Mann, Ernest William ; Edgbaston
Metcalfe, John Cecil ; Chelmsford
Middleton, Herbert G. ; Knottingley
Osborne, Antill H. ; Ashbourne
Pare, Charles Percy ; Bolton
Parker, John Orpe ; Ashbourne
Redpath, Stanley ; Norwood
Robinson, Richard Atkinson ; London
Said, Arthur ; Malta
Spiteri, Nicola ; Malta
Webster, Philip ; Leytonstone
Williams, Edwin H. F. ; Wrexham
Wood, Lawrence Edward ; Brentford
Woodward, Henry Knowles ; Halifax

FIRST EXAMINATION QUESTIONS.

January 10, 1899.

ENGLISH.

(Time allowed—from 3 p.m. to 4.30 p.m.)

1. Analyse:—

"Soon as the midnight bell did ring,
Alone and arm'd forth rode the king."

2. How may Adverbs be classified? Give examples.
3. Correct the following sentences, giving your reasons:—
   (*a*) That man will come both to you and I.
   (*b*) No one walked so fast as him.
   (*c*) He was one of the bravest men that has ever lived.
4. In the following passage supply the necessary capital letters, and put in the stops and the inverted commas where necessary:—whilst i was on the bridge the captain said to me see the rooms properly filled this time to which i answered all right sir at the same time reporting to him that i was going below to the mail room whilst passing the hatch the first officer said to me oh mr kynaston did the chief officer tell you anything about going below to the mail room

The following question must be attempted by every candidate:—

5. Write a short descriptive account of some Cathedral or Museum you have visited; *or* a short biography of some eminent Statesman of this century.

ARITHMETIC.

(Time allowed—from 12.30 p.m. to 2 p.m.)

[The working of these questions, as well as the answers, must be written out in full.]

1. The circumferences of the large and small wheels of a wagon are respectively 165 inches and 40 inches. How many more turns will the latter make than the former in going a distance of 5 miles?
2. If 31 cwts. 3 qrs. 12 lbs. of sugar cost £37 16s., what would be the cost of $\frac{2}{3}$ of a ton?
3. Subtract the difference between $3\frac{5}{12} \times 4\frac{2}{11} \times 1\frac{1}{21}$ and $\frac{3}{8}$ of $\frac{4}{11}$ of $8\frac{3}{5}$ from their sum.
4. Reduce 2·083 of 8 guineas to the decimal of 10 guineas.
5. A manufacturer buys raw material at £24 12s. 6d. per ton, and the cost of manufacture amounts to £1 2s. 6d. per cwt. If he sells the finished article at 11d. per lb., what is his gain per cent.?
6. What is the price of a 3 per cent. Stock when a sum of £4353 4s. 7d. invested in it produces £132 5s. per annum?

The following question must be attempted by every candidate:—

7. A litre of wine weighs 980 grammes. How many hundredweights (approximately) will 220 litres weigh?

LATIN.

(Time allowed—from 11 a.m. to 12.30 p.m.)

I. For all Candidates. Translate into Latin:—

1. Why do you praise the man?
2. He remained at Rome during the whole summer.
3. That virtuous mother will be loved by her children.
4. Britain is more than twenty miles distant from Gaul.
5. He set out with three legions to storm the city.

II. Translate into English *either* A (Caesar) *or* B (Virgil).
(Candidates must not attempt both authors.)

A.—CAESAR.

1. Caesar suos a proelio continebat, ac satis habebat in praesentia, hostem rapinis, pabulationibus populationibusque prohibere. Ita dies circiter quindecim iter fecerunt, uti inter novissimum hostium agmen et nostrum primum non amplius quinis aut senis milibus passuum interesset. Interim quotidie Caesar Aeduos frumentum, quod essent publice polliciti, flagitare. Nam propter frigora, quod Gallia sub septentrionibus, ut ante dictum est, posita est, non modo frumenta in agris matura non erant, sed ne pabuli quidem satis magna copia suppetebat: eo autem frumento, quod flumine Arare navibus subvexerat, propterea uti minus poterat, quod iter ab Arare Helvetii averterant, a quibus discedere nolebat.
2. Locutus est pro his Divitiacus Aeduus: Galliae totius factiones esse duas: harum alterius principatum tenere Aeduos, alterius Arvernos. Hi quum tantopere de potentatu inter se multos annos contenderent, factum esse, uti ab Arvernis Sequanisque Germani mercedo arcesserentur.

Grammatical Questions.

(For those only who take Caesar.)

1. Give the gender, genitive singular, and the English of *amor, collis, equus, frigus, impetus, jus, linter, pernicies.*
2. Give the principal parts and the English of *ago, colligo, dedo, lacesso, pendo, redimo, subveho, vincio.*
3. Write in Latin:—*17, 94, 19th, 77th, two hundred soldiers, three hundred and fifty horses, one-third, twice every day.*
4. When is the indicative mood in English translated by the subjunctive mood in Latin? Give *two* sentences in illustration.

B.—VIRGIL.

1. Haec ubi dicta, cavum conversa cuspide montem
   Impulit in latus; ac venti, velut agmine facto,
   Qua data porta, ruunt, et terras turbine perflant.
   Incubuere mari, totumque a sedibus imis
   Una Eurusque Notusque ruunt creberque procellis
   Africus, et vastos volvunt ad litora fluctus.
   Insequitur clamorque virum stridorque rudentum.
   Eripiunt subito nubes cœlumque diemque
   Teucrorum ex oculis; ponto nox incubat atra.
2. Est locus, Hesperiam Graii cognomine dicunt,
   Terra antiqua, potens armis, atque ubere glebae:
   Oenotri coluere viri: nunc fama, minores
   Italiam dixisse ducis de nomine gentem.
   Huc cursus fuit;
   Cum subito assurgens fluctu nimbosus Orion
   In vada caeca tulit, penitusque procacibus Austris,
   Perque undas, superante salo, perque invia saxa,
   Dispulit; huc pauci vestris adnavimus oris.
   Quod genus hoc hominum? quaeve hunc tam barbara morem
   Permittit patria? hospitio prohibemur arenae!
   Bella cient, primaque vetant consistere terra.

Grammatical Questions.

1. Give the gender, genitive singular, and the English of *acies, cadus, Dido, litus, pes, proles, Samos, tus.*
2. Give the principal parts and the English of *absisto, bibo, linquo, patior, scindo, sperno, verso, vincio.*
3. Write in Latin:—*17, 94, 19th, 77th, two hundred soldiers, three hundred and fifty horses, one-third, twice every day.*
4. When is the indicative mood in English translated by the subjunctive mood in Latin? Give *two* sentences in illustration.

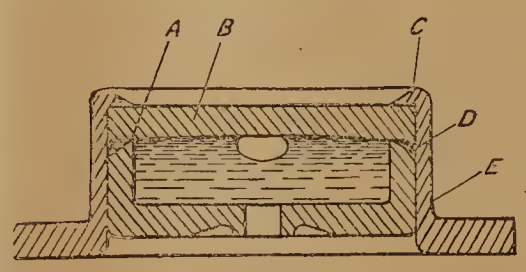
NOTES OF PHOTOGRAPHIC NOVELTIES.

A New Toning Formula.

A toning bath which is said to yield the same fine range of tones as the ammonium sulphocyanide bath, but with greater certainty and ease and without any tendency to double-toning or softening action on the gelatin, is now being supplied by Messrs. BURROUGHS, WELLCOME AND CO., in tabloid form. It has been found that the best results are obtained by a combination of sodium formate and sodium bicarbonate, and the sodium formate compound tabloids each contain 7½ grains of sodium formate, with 1 grain of sodium bicarbonate. With prints from average negatives on any make of P.O.P. the sodium formate will give every tone, from a warm brown to a cold purple, quickly and with the greatest ease. It is not poisonous, and, unlike ammonium sulphocyanide, does not produce double tones or soften the gelatin. The sodium formate compound tabloids are supplied in small cases complete with ½-grain gold chloride tabloids, sufficient for six toning baths, to retail at 1*s.* per case.

A Circular Spirit Level.

MESSRS. TAYLOR, TAYLOR AND HOBSON, of Leicester, have been attempting to make circular spirit levels more reliable and permanent, and appear at last to have succeeded. In the new patent level, illustrated here in section, the spirit chamber "F" is made in one close-grained homogeneous piece by squeezing from a flat aluminium sheet. Incidentally, this white metal enhances the contrast between the colour of the bubble and that of the surrounding spirit. The connection between this chamber and the glass "E" is now made of such a form that any expansion of the metal is compensated, and the joint is not opened. Leakage is further prevented by the elastic ring "D," which is compressed into the angular space of the joint. The level is assembled by forcing the chamber "F" into the outer jacket "E" until it comes into contact with the glass at "A." The rim of the jacket at "C" guards the glass from injury, and this outer jacket, being separate from the spirit chamber, may be strained or bent even considerably without causing the level to leak. Another advantage of this improved level is, that it costs one-third less than the old form, and retails at one shilling.



Celluloid in Sheets.

We have been asked from time to time where celluloid of various kinds in sheets can be purchased, and now find that Messrs. FITCH AND CO., of Seldon House, Fulwood's Rents, High Holborn, W.C., can supply celluloid of the best manufacture of the transparent kind in sheets of various thicknesses, and in a variety of colours as well as colourless. It can be had with one surface mat for use as focussing screens or for squeegeeing purposes in the usual sizes of photographic plates, and it can also be obtained opaque in black, dead white, ivory grained, and in several tints.

PHARMACEUTICAL JOURNAL.

A Weekly Record of Pharmacy and Allied Sciences

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LONDON: SATURDAY, JANUARY 14, 1899.

THE COUNCIL MEETING.

At the opening of the meeting the President, in the name of his colleagues, offered Mr. Harrington a cordial welcome, and said that they might expect in him a very useful addition to their number. Mr. Harrington was then appointed a member of the several committees upon which his predecessor, Mr. Hampson, had served.

The receipt of a letter from the Privy Council approving of the appointments of examiners for the ensuing year was announced, also the report of Dr. Balfour Marshall on the Society's examinations in Scotland, which pointed to "imperfect training" as the chief cause of the large proportion of failures among candidates for qualification, and to the probability that the everyday work of an apprentice does not afford sufficient opportunity for becoming thoroughly familiar with the details of practical pharmacy, and suggested that the evidence thus furnished constitutes a strong argument in favour of a compulsory curriculum, that would enable students to obtain systematic training, and an intelligent acquaintance with the subjects on which they have to be examined. This repetition of the view formerly expressed by Dr. Marshall is an echo of what has been said by others holding the same position, and the urgency of the want indicated is augmented by the satisfaction expressed with the manner in which the examiners have performed their duties.

In reply to a question by Mr. Rymer Young as to whether the failures in scientific subjects have not increased since the appointment of professional examiners, the President said that he could not give exact details at the moment.

Mention was made by the President of the death of Mr. Bosisto, an honorary member of the Society, who had acquired considerable eminence in Australia as a pharmacist, and in connection with the production of eucalyptus oil. The interest he took in the investigation of medicinal plants was evidenced only a few days before his death by the transmission of a parcel of roots for examination.

The additions to the roll of the Society under the new Bye-laws comprised 621 members and 145 student-associates.

The President mentioned that out of the number elected members of the Society about three hundred had been in the position of associates not in business on their own account, and he hoped this satisfactory beginning would be followed by many more of the same class availing themselves of the additional privileges of membership now open to them.

The report of the Finance Committee contained no exceptional details, and was adopted without comment.

On the recommendation of the Benevolent Fund Committee six grants, amounting to fifty-five pounds, were ordered to be paid, as well as two grants of fifteen and twenty pounds respectively to the unsuccessful candidates at the recent election of annuitants. The Secretary reported the death of Mr. George Foster and of Emily S. Sowter, who had been annuitants respectively since 1897 and 1887.

The President mentioned the receipt of two donations to the Fund, one of five guineas, from students of the Metropolitan School of Pharmacy, as a pleasing indication of the interest taken in the Fund by younger members of the craft—the other, a further amount of fifty guineas from the Camwal Directors, as evidence of their continued desire to render support to this useful institution.

The report of the Library Committee contained, in addition to the usual details, a reference to the appointment of Mr. A. J. Phillips as the Society's representative on a Board of Trade Committee for revision of medical scales under the Merchant Shipping Acts.

After the reading of the report of examinations, Mr. R. Storie was appointed Local Secretary for Dalkeith. The President drew attention to a letter from the President of the General Medical Council, making suggestions as to the publication of the next revised Pharmacopœia, and on his motion it was referred to the General Purposes Committee for consideration.

A mass of correspondence and numerous resolutions passed at meetings of provincial associations in regard to the subjects of vital interest now under consideration by pharmacists throughout the country, was referred to by the President as having been received officially, and he requested the Secretary to read an epitome of the conclusions arrived at. He expressed satisfaction at the evidence thus given of attention being directed to matters of importance, and proposed that the resolutions and correspondence should be referred to the Law and Parliamentary Committee.

In reply to a remark by Dr. Symes that no mention was made of a resolution passed at a meeting held in Liverpool, the President said that it had not been officially forwarded, and that this was also the case with a resolution passed at Newcastle, respecting which he had received a letter from Mr. Clague.

After consideration of the legal portion of the report, resolutions were passed authorising the Registrar to take proceedings in several cases of alleged infringement of the Pharmacy Acts.

THE ADOPTION OF REGULATIONS.

The very important advance made last year towards thorough pharmaceutical incorporation has been promptly followed by an equally important exercise of the power conferred upon the Pharmaceutical Society by the Pharmacy Act, 1868. The result of the special general meeting held last Wednesday may be regarded as a marked indication of an appreciation of the privileges and duties of the Society very different from that existing twenty-eight years ago. It is unnecessary now to do more than direct attention to Mr. Robinson's able exposition of the altered opinions now prevailing. Their preponderance has been demonstrated by the absence of any substantial opposition and by the almost unanimous acquiescence with which Mr. Robinson's motions were received by the meeting. There are reasonable grounds for anticipating that the removal of a long-standing difficulty by the action taken last Wednesday will, as the President hoped, bear good fruit before long.

ANNOTATIONS.

The Pharmaceutical Society of Great Britain, at the special general meeting, held on Wednesday (see p. 40), decided by a very large majority of those present to adopt regulations for the keeping, selling, and dispensing of poisons, in accordance with the provisions set forth in Section 1 of the Pharmacy Act of 1868. Subsequently, it was resolved, with only two dissentients, that the recommendations adopted at a general meeting of the Society, on May 17, 1871, should now be formally adopted as regulations in accordance with the provisions of Section 1 of the Act. Regulations having thus been prescribed by the Pharmaceutical Society, the consent of the Privy Council is all that is required to give them the force of law. No power of inspection will be conferred by adopting these regulations, and penalties for breaches of them can only be sued for by the Registrar appointed under the Pharmacy Acts, in the name and by the authority of the Council of the Pharmaceutical Society. The full text of the regulations will be found at page 44, and they should receive the serious consideration of every registered chemist.

How not to Keep and Sell Poisons is illustrated by a bottle of "liquid ammonia" sent for inspection by a correspondent. The bottle is an ordinary four-ounce flat, containing what is apparently the B.P. 10 per cent. solution of ammonia, and is labelled as follows:—"Liquid ammonia. Medicinal use, stimulant, antacid, and antispasmodic. Relieves nervous headache and is useful in pneumonia, bronchitis, and dyspepsia. Externally (applied to nostrils) in syncope. Dose: Ten to twenty drops in water.' The word "poison" does not appear nor is there any caution with regard to the storage or use of the contents of the bottle, which is closed, by the way, with an ordinary cork. We are informed that some London firm is supplying bottles of this kind to grocers, filled and labelled ready for sale. If the extent of the business done by the firm is very great, we may before long expect to hear of accidents to purchasers, and much dissatisfaction on the part of the grocers retailing the bottles.

The Morphine Poisoning Case reported briefly in last week's Journal points the old moral that no one should be allowed to dispense poisons who has not been properly trained to deal with such articles. The facts of the case are that a young married woman had been attended by a local doctor, who had prescribed medicine to contain a grain and a half of morphine, but his dispenser put fifty grains of morphine into the medicine, and the patient died after taking it. Another medical man, who had made a post-mortem examination of the body, stated that death was due to poisoning by morphine, and the dispenser explained that the prescription was partly written and partly verbal, the doctor having altered it slightly after first giving it. As a result he (the dispenser) became confused, and put in fifty grains of morphine instead of one and a half. He admitted that he did not understand the prescription thoroughly, and said he was in a depressed state of mind when he dispensed the prescription, owing to neuralgia and domestic trouble. The coroner, in summing up, commented upon what he termed the "slipshod" way in which the prescription had been written, and the jury, after a long deliberation, returned a verdict of "Death by misadventure." Commenting upon that, the Coroner said the jury had taken a merciful view of the case, but wished him to say that the dispenser was very censurable, as was also the doctor for making out a prescription in so incomplete a form. It should be almost needless to state that the dispenser in question is not a duly qualified person. He is described as a medical student, but claimed to have had twelve years' connection with medicine. In the public interest it might be well if that connection were now to cease, and if the medical man who employed him were to give up dispensing. The *Medical Press*, commenting upon the case, observes that "it is a fact that few, if any, of the dispensers employed by medical men have had any training to fit them for the duties and responsibilities they undertake."

An Evening Meeting will be held by the Pharmaceutical Society at 36, York Place, Edinburgh, on Wednesday next, January 18, at 8.30, Mr. J. Laidlaw Ewing in the chair. Mr. D. B. Dott, F.I.C., F.R.S.E., will read a paper on "The B.P. Tests for Sodium Sulphite," and another on "The Assay of Eucalyptus Oil"; Mr. Frederick Stephenson will submit a "Note on a Digitalis Mixture," and Mr. A. J. Dey will communicate a "Note on a Sample of Phenazone."

The Articles on Photo-Micrography, which have appeared in the Journal during the past year, appear to have met a distinct want, judging from the numerous appreciative communications in relation thereto. Many readers will be glad to learn, therefore, that the author has been encouraged to reprint the articles in volume form. The Scientific Press notifies that this new text-book on photo-micrography, by Mr. E. J. Spitta, who is already well-known for his joint authorship of 'An Atlas of Bacteriology' and for his other photographic and scientific works, is to be published this week. It will be in quarto form with full-page plates and numerous illustrations, similar to those used to illustrate the articles in the Journal, and will undoubtedly prove of the greatest importance and practical utility to all who are interested in the increasingly popular subject with which the book deals.

The Botanical Institute of Liège has issued a first volume of its *Archives*, in which are recorded the results of researches undertaken by the pupils studying at the Institute, under the direction of Professor Gravis. The anatomy of certain genera of Ranunculaceæ, such as *Delphinium*, *Thalictrum* and *Clematis*, is dealt with in detail by MM. Lenfant, Mansion, and Sterckx, and numerous illustrations are given in the book, which is published under the auspices of the University of Liège. The aim of Professor Gravis is to have the minute anatomy of the natural orders investigated on a definite plan, so as to permit of comparison being made, as in the case of systematic botany. It is pointed out by the *Gardeners' Chronicle* that much of the work done in modern botanical laboratories is defective in this particular, very little pains being taken to ascertain the correctness of the name of the plant selected for examination, whilst hitherto but little has been done except by Vesque, Radlkofer, and a few others to treat histological characters in exactly the same way that ordinary "naked-eye" appearances are dealt with by systematic botanists. "In other words, comparison, discrimination, and judgment are, to the full, as necessary in the study of minute anatomy as they are in that of external morphology."

A British Botanic Garden is to be established at Perry Hill, and it is interesting to note that the name of a local chemist and druggist, Mr. A. A. Abbott, of 47, Perry Hill, S.E., is mentioned in connection with the preliminary arrangements. The project appears to have originated with Mr. P. Cochrane, a member of the Catford and District Natural History Society, who has taken suitable ground in Castlands Road, Perry Hill, and designs to form there a complete collection of British plants. He was for some time engaged at the Royal Gardens, Kew, under Sir J. D. Hooker, and has a comprehensive acquaintance with the British flora. The proposed garden will be tastefully laid

out, and aquatic, bog, marsh, and marine plants will be included amongst the rest. All specimens are to be labelled with their common and botanical names, and the names of the natural orders to which they belong. In addition, Mr. Cochrane and other gentlemen versed in botany and horticulture will frequently be present to give information to visitors concerning plants and methods of cultivation. To assist in defraying the not inconsiderable expenses of forming and maintaining the garden, the support of a limited number of subscribers is invited. Subscribers of five shillings per annum will be entitled to visit the garden at all seasons, between the hours of 2 and 9 p.m. The garden will be sufficiently advanced for inspection by May 1, 1899, and subscribers' admission cards will be available for one year from that date.

Preventive Medicine continues to receive more and more of the attention which is its due, and it is satisfactory to note that Professor E. Symes Thompson has selected that subject for treatment in his next course of Gresham lectures. The lectures will be delivered at the Gresham College, Basinghall Street, E.C., on Tuesday next, January 17, and the three following days, at 6 p.m., admission being free as usual. The first of the series will treat of consumption in relation to air and food, recent advances in preventive medicine, the application of antiseptics to medical and surgical ailments, etc. It will be shown that the diminution of tubercular disease has been equivalent to 40 per cent. in the past fifty years, but a forward movement is needed if this rate of diminution is to be maintained. It becomes needful, therefore, to awaken the public to the facts recognised by the scientific world. The tubercle bacillus will occupy attention during the second lecture, the tendency of the specific bacillus of phthisis to remain long quiescent being referred to, as well as the conditions tending to latency and to active advance in lung disease. The association of the streptococcus and staphylococcus with suppuration and with destructive disease in the lung will also be dealt with, and a description given of treatment as based on an accurate knowledge of the life history of noxious organisms. Toxins and antitoxins, purity of air, the influence of sunshine and fresh air on low forms of life within and external to the body, and the bacteriological diagnosis of infectious disease will be amongst other points discussed in this lecture, which will be illustrated with lantern slides. The open-air treatment of consumption and the important subject of bovine tuberculosis will be dealt with at length in the third and fourth lectures.

The Question of the Cure of Consumption, as apart from its prevention, also continues to receive the attention it merits, Liverpool being the latest place where measures have been taken for dealing with the disease. Endeavours have been made for a long time to raise an adequate fund for the reconstruction of the present consumption hospital in Mount Pleasant, and for building a sanatorium at West Kirby for modern methods of treatment; but the Committee has been hampered by lack of sufficient means to accomplish the latter part of the scheme on a scale capable of meeting modern requirements. It has been estimated that this could be done by building the sanatorium on a satisfactory site already secured at West Kirby, with about thirty-six beds, at an estimated cost of £15,000. To enable this to be carried out Lady Willox and Mr. W. P. Hartley have intimated that they are each prepared to provide one-half of the required sum by increasing their respective subscriptions to the building fund to £7500 each. They make this proposal on the understanding that their contributions should be in addition to, and not take the place of, sums hitherto promised by others, and that further efforts should be made to provide an adequate fund for the maintenance of the institution.

REVIEWS AND NOTICES OF BOOKS.

Gout: Its Pathology and Treatment. By Arthur P. Luff, M.D., F.R.C.P. Pp. viii. + 248. Price 5*s*. London: Cassell and Co., Ltd. 1898.

The work is founded on the author's Goulstonian lectures (1897), so that the views submitted must be familiar to many, but even those well acquainted with Dr. Luff's opinions will welcome the appearance of this excellent volume. Dr. Luff divides his book into four parts, of which the first is devoted to the pathology of gout. In it one finds an appreciative review of the labours of Garrod, Sir W. Roberts, and others, as well as a carefully considered statement of the author's own views.

Dr. Luff concludes that uric acid is normally formed in the kidneys from urea by conjugation with glycocine. His main reason for this opinion is that were uric acid formed elsewhere it must be present in the blood in health, which the author says is not the case. In gout Dr. Luff holds that the uric acid formed in the kidneys is not completely eliminated, and the portion not reverted is absorbed into blood in the form of the soluble quadriurate. This salt is not toxic, but in the presence of the salts in the blood serum is liable to precipitation in the form of sodium biurate, which salt causes the gouty manifestations by its mechanic action as an irritant. The responsibility for gout rests, then, with the kidneys, which, owing to disease, which may be functional or organic, are unable to excrete the uric acid formed by them from the blood. The author admits that uric acid is formed within the system in certain diseases accompanied by leucocytosis, but the kidneys not being defective are capable of eliminating the substance, so that no gouty manifestations ensue.

Part II. contains a short account of the different forms of gout and their prognosis, whilst

Part III. gives a *résumé* of the various experiments which the author has made to determine certain points in treatment. The most important points shown are that diminished alkalinity of the blood does not tend to promote the deposition of sodium biurate nor increased alkalinity enable the blood to dissolve and wash out any uric acid in the tissues. These ideas are founded on an error, *i.e.*, that the deposit is uric acid, whereas it is sodium biurate With regard to diet the author's investigations show the mineral salts contained in meat diminish the solubility of sodium biurate, whereas the mineral salts in vegetables increase its solubility in a very marked manner. The curious fact should be noted that an artificial vegetable ash made in imitation of the natural ash has a directly contrary effect.

In the fourth and concluding part of the book Dr. Luff ably discusses the treatment of gout in its acute and chronic forms. according to the author, colchicum still holds its place as the drug in acute gout, while its use in smaller doses is recommended in more chronic cases. Guaicum also, many will think justly, comes in for praise.

The book concludes with a chapter on the uses of mineral waters in gout. Dr. Luff, following Sir W. Roberts, is of opinion that the use of mineral waters for the purpose of removing gouty deposits lies solely in its watery constituents. It is by no means certain that this is the case, indeed Dr. Luff's own experiments, showing how different the action of the natural vegetable salt is from the imitation, points out that in such a very complex subject too much stress must not be laid on test-tube experiments.

Whilst many of Dr. Luff's conclusions appear open to argument, he may be congratulated on having written a useful, suggestive, and readable work on a very difficult and debatable subject.

PHARMACEUTICAL SOCIETY.

SPECIAL GENERAL MEETING.

A special general meeting of the members of the Society was held at 17, Bloomsbury Square, London, W.C., on Wednesday last, at 3 p.m., there being a very large attendance. Mr. Walter Hills (President), occupied the chair.

The Secretary having read the notice convening the meeting,

The Chairman said they were met to discuss a very important subject, and one which had been before the Society for something like thirty years. He did not propose to make any remarks at that moment on the subject, though probably most of them would know that he held certain views with regard to poison regulations. Parliament had left the matter in the hands of the Society, and therefore he thought it would be out of place to make any lengthy remarks, or even to say what his views were on that occasion. He would call upon Mr. Robinson to move the first resolution of which he had given notice.

Mr. R. A. Robinson then moved—

That the Pharmaceutical Society of Great Britain resolves to adopt regulations for the keeping, selling, and dispensing of poisons in accordance with the provisions set forth in Section I. of the Pharmacy Act, 1868.

He said, in moving this resolution he was very well aware of the responsibility which attached to it, but he would also venture to ask the meeting if there was no responsibility attaching to them if they did nothing in the matter. He thought in the latter case the responsibility was perhaps greater than they would incur in adopting his resolution. The subject was so well known to the members that he thought he need say very little about it, but there might be some gentlemen present who would like to hear his arguments in favour of it. The subject was a very wide one, but he did not propose to go further back than the year 1868, when the Pharmacy Act was obtained. That Act was the result of a compromise. Then there were two sections of chemists in the country who desired legislation as regards pharmacy, but neither of them could get what they wanted entirely without the help of the Government. The Government said, "We will help you, the Society, to get an Act passed, but it must be on a certain condition." They said, "We will give you a Pharmacy Act, protecting your title and certain things, but it must also be a Poisons Act. The Government negotiated the matter with the Privy Council, which was charged with the care of the public health in this country; the Pharmaceutical Society was represented by the late Mr. George Sandford, who had been the President for some time, and who had the necessary tact and influence to deal with the matter. They were all familiar with the regulations which were passed as to the sale of poisons. There was a Schedule of Poisons, Part I. containing the stronger and Part II. containing the weaker poisons. Then the Government also said that they must have regulations with regard to the storage of poisons, and he (Mr. Robinson) wished the meeting to notice that a clause to that effect was just going into the Act of Parliament in the same way as the regulations with regard to selling, when Mr. Sandford asked for it not to be done, saying that the conditions of chemists' businesses in the country were so different that it would be difficult to lay down in an Act of Parliament a stringent rule which would apply to everybody, and he asked that the duty should be cast upon the Society, which would know how to make regulations for its members. Mr. Sandford persuaded the Lord President of the Council to agree to that, and it would be agreed that he was acting in the best interests of the trade when he did so. He would ask the meeting to think what that implied, that the Society was empowered to make the regulations. The first section of the Act said that chemists should conform to such regulations as might from time to time be made by the Society. It had been argued that, as the word in the Act of Parliament was "may," it gave the Society a voluntary power which it need or need not exercise, at its discretion. He did not say that in an Act of Parliament the word "may" had always the same significance as the word "shall," but he did say that they were very often used indifferently to express the same object. In the Pharmacy Act itself it stated, "This Act shall not apply to Ireland," but it also stated "This Act may be cited as the Pharmacy Act"—precisely the same meaning was attached to those two words. Then in reference to the appointment of the Registrar, in the English Act it was stated that the Council of the Society "shall" appoint a Registrar, whereas in the Irish Act it stated that the Council of the Society "may" appoint a Registrar, but in each case the meaning was exactly the same. It was not as though the Government had said it was intended to be compulsory on the Society, and that its representative had said he did not so understand it; the point was given away when their own representative said that it was certainly to be an obligation upon them! He did not see how any honourable member could ever argue that it was a voluntary thing on the part of the Society. He would like to call attention to what their own representative in Parliament had said. Mr. Headlam, the member for Newcastle, was the member in charge of it, and when Mr. Lowe objected to the power being relegated to the Society he said he understood that the words were introduced by the Privy Council. He would particularly ask the members to remember that the clause as to the storage of poisons was just going to be put into the Act at the same time as the clause as to selling was put in, when Mr. Sandford, wisely as he thought, interfered and asked for that duty to be thrown on the Society. There could be no one present who would not agree that it was always intended by Mr. Sandford that this duty should be carried out by the Society. It had been said that he had no authority to say so. There must be some others present as well as himself, in fact he knew there were, who had something to do with getting Acts of Parliament through, and they would know that when you were before a Committee you had to make up your mind there and then as to whether you would accept a certain thing or not, and Mr. Sandford, who enjoyed the confidence of the Society in an eminent degree, had to make up his mind. In the year 1868, when the Act was passed, there was really no objection to these poison clauses. At that time a vote of thanks was passed to Mr. George Sandford, which was moved by Mr. Reynolds for his successful efforts, and he was complimented on the way in which he got the Bill through Parliament. Mr. Deane also thought the poison clauses would not be found difficult to work. In the Journal for September, 1868, it was explained that chemists must conform to regulations for the keeping of poisons, and the Journal subsequently stated that regulations were then under consideration. So that at that time there was never any doubt at all but that there ought to be regulations for the storage of poisons. It was so put in the Act that those regulations were to be made by the Society and not by the Council, but when the question was brought before the general meeting to confirm the making of the regulations, there was an adverse vote against it. It was stated that they did not want inspection, that it was more likely that a chemist would take care of his pharmacy in the same way as he had always done, and it was also stated that the word "may" did not mean "shall." Those were the main objections to it. When the great meeting was held in that hall, there were eighty-five gentlemen who voted in favour of the regulations being made — they thought their honour had been pledged, but, unfortunately, one hundred and four thought differently; therefore, by a majority of nineteen, the meeting resolved not to make the regulations. But the members immediately proceeded to say that they would recommend them as recommendations, clearly showing, therefore, that they were not foolish proposals that had been put before them, and they ended by recommending them as recommendations of the Committee, but, unfortunately, that did not comply with the Government regulations. The Government thought the safety of the public was not sufficiently secured by the putting forward of recommendations. Mr. Carteighe spoke in 1870 of these mild alternative regulations, and it was abundantly clear that, at that time, they were accepted as being proper regulations to be made, but as they were not passed in 1869, the Government immediately came to the assistance, and said, "You have broken faith with us," and they actually brought in another Bill giving them power to make these regulations or enforce them against the Society. The anger of the chemists throughout the country was aroused, and they were able to show that when they took a strong line they could defeat the Bill. Personally he was sorry that it was defeated, but at the same time he was glad to see that they had that power. Ever since then there had been a feeling that the Society had not acted up to what it had promised. Mr. Carteighe had told him over

and over again that whenever he had to approach the Government for legislation he was constantly met with the fact that the Society had not made the regulations. In the meantime, the proposals put forward had been generally adopted. They did all of them more or less keep their poisons in the way suggested for their own sake and for the safety of the public. It became known last year that the Government was contemplating further legislation with regard to the sale of poisons, and he (Mr. Robinson) immediately went to the President and informed him that the Government was going to introduce a Bill giving power to other persons than chemists to sell poisons, and he further said that it was exceedingly likely that in the Bill they would make regulations, and it would be difficult for the Society to oppose it. He offered the President at that time to bring the matter before the members, but the President said that there was no necessity to be in a hurry. In that Bill the Government put in a provision taking away from the Pharmaceutical Society the exclusive right of making poison regulations for the trade. That Bill was opposed throughout the country for obvious reasons, and in the result they succeeded in getting it withdrawn. A few months ago he called at the Privy Council office, and had an interview with one of the officials. He asked him what their policy was in the matter, and the Clerk of the Privy Council in reply told him the Goverment was not doing anything then, and that, before they did, he had no doubt the Pharmaceutical Society would be consulted. He regretted that that was not done at the beginning of the last Session, and then he said in case the Society made regulations for the storage of poisons it would meet with the approval of the Government, and that it was his opinion the Society in doing so would be putting itself right both with the Government and with the public. The result was that at a meeting of the Western Chemists' Association it was resolved to call a meeting, and it was now for the meeting to consider what should be done in the matter. They knew full well what had happened since 1868. He was not there to blame the 104 members who voted against that resolution; no doubt they had their reasons for what they did, but since then the members had had thirty years' experience. No doubt in 1868 they thought they had an Act which would serve them very well, but they now knew perfectly well that that Act had been so interpreted that it was no longer sufficient for the protection of the chemists of this country. He was not acting from sentiment or any desire of having a change; he had a definite object in view, which was to obtain a new Act dealing with the affairs of pharmacy. The first thing that he with others ventured to advocate was that they should get the Society united and consolidated. He ventured to advocate that in that hall four years ago, and although he was beaten on some points, yet they knew that since then the Society had been successful in getting an amending Act. He ventured to think that that Act would do good, and bring to the help of the Society that general support which they so ardently desired. They would be aware that the Duke of Devonshire had said that, in the opinion of the Privy Council, the Pharmaceutical Society had not carried out its duty, and he wanted to take a step to remove that blot, if he could, so as to get amending legislation. Did they think that they were powerful enough to get amending legislation while the Society had not done its duty? It seemed to him that it was expedient that they should do it in order that they might stand well with the Government. They were actually asking the Lord Chancellor to aid them in procuring further legislation, while at the same time they had not carried out the regulations that they had agreed to do. Did they suppose that the Lord Chancellor would not communicate with the Privy Council about the matter? Did they think they would have a better chance if they passed these regulations now, late though it be, or if they did not pass them? He had read the many letters which had been written to the Journal, and read them with care, but he only found one alternative policy. When they looked at what took place in the year 1868, there were Mr. Sandford, Mr. Carteighe, and Mr. Giles, all men having the best interests of pharmacy at heart who were in favour of these regulations. On the other hand, there were Mr. Reynolds, Mr. Hampson, and Mr. Schacht, all men having equally the very best interests of pharmacy at heart, who took the opposite view. In the same way, at the present time he had the pleasure of knowing Mr. Reynolds quite well, but he was sorry to see that that gentleman could not bring himself to think that the time had now come for adopting regulations. Mr. Reynolds seemed to think that before they did so they ought to say to the Government, "What else will you give us?" But they owed this duty to the Government, and he did not think the policy of saying to the Government, "We will not pass these regulations unless you promise us something more," was a wise one. In his opinion, there was no doubt that if they did pass the regulations they would stand much better with the Government, but he could not understand anyone suggesting that it should be made a matter of bargain, and that they should say "We want to know how you will amend the Pharmacy Act before we make these regulations." He would just refer to one or two points and criticism that had come before his notice. He believed some members thought—and he was rather surprised to find a member of Council among that number — that the regulations were to apply to every conceivable kind of poison. They were only to apply to the poisons in the Schedule. Assuming that to be the correct view, did not they think that if they adopted the regulations they would be in a very excellent position to ask the Government to add to the Schedule? It was for the meeting to confirm that view or not, and his opinion was that of many others at the present day, that it was just and expedient to prescribe regulations, and he submitted it to the meeting as being a wise and practical thing to do. He observed with much pleasure that resolutions had been sent up from different parts of the country in favour of these suggestions. He observed in a letter in the Journal from Mr. Proctor, a year ago, on the subject of the Pharmacy Act, that he asked "Are chemists and druggists to remain another forty years in the wilderness." And then that gentleman said "Wisdom and worthiness are plants of slow growth." Did they not think that in the thirty years that had passed this question had had plenty of time, and that it should have come to a fructifying head? From the point of view of expediency and their own self-interest, it was advisable that they should make these regulations. They were not onerous. They had actually been obeying them as recommendations, and they would not do them the least harm. It would not be bad policy on the part of chemists to let it be known that they were more stringent in the handling of poisons than other people were. Another question that had been asked was, Would these regulations apply to corporations and stores? The highest pharmacutical authority stated that he did not know. He was not sure that any one did know; it depended on how the judges interpreted the Act; but if they did apply to stores it would follow that the public would get the same protection from stores that they would get from members of the Society. If they did not apply to stores it would be to the advantage of pharmaceutical chemists that they were subject to regulations for the storage of poisons while stores were not. He had also been asked if these regulations would apply to infinitesimal portions of poison. To his mind it would be a dangerous thing to say that a scheduled poison when very much diluted was no longer a poison, and ought not to be subject to strict regulations, because the inference would be that they could not proceed against the unqualified seller who sold a diluted poison. It would never do for them to advocate with regard to the storage of poisons that they should be exempt because a medicine did not contain a certain quantity of poison, and at the same time bring prosecutions against people for selling poisons of a similar nature. When the regulations as to the selling of poisons first came into use a good many people thought it would be a great trouble, but the medical printers soon produced poison books, and as a matter of fact they very soon got into the way of doing it. The regulations he proposed presented such alternative proposals that no real difficulty would be found in carrying them out. He would first ask them to decide on the general principle, and then they could discuss the details of the regulations. He was glad to see the attention of the country had been roused to the question, and he earnestly asked anyone present who did not see his way to fall in with his views to remember the responsibility that he was incurring if he either moved an amendment or voted against it. He did not pretend to know what the intentions of the Government were, but he did not believe for a moment that the Poisonous Substances Bill was finally withdrawn. It must be remembered that it did not go into the House of Commons before July, and it should not be imagined for a moment that the subject had been finally disposed of on the part of the Government. They had an opportunity that day of voluntarily doing that which their representatives promised they would do. Would they do it or would they not? This might be the last opportunity they would have of taking voluntary action. He would not

beseech them, but he put it to them that in their own self-interest it was their bounden duty to take this step, which would put them right with the Government, which would do them no harm, and which would also put them right with the public.

Mr. Bourdas seconded the motion.

Mr. W. R. Blades rose to a point of order. He contended that the meeting was not duly convened, and cited in support of his contention Section 4 of the Bye-Laws.

Mr. Carteighe pointed out that the members were not making bye-laws; they were called together for the specific purpose of considering the propriety of doing certain things.

The Chairman said it was perfectly competent for the Society at the present meeting to deal with the subject for which the members were specifically called together.

Mr. Nicholls, though not entirely agreeing with Mr. Robinson's proposition, wished to move an amendment as follows:—

> It is resolved that, taking into consideration the very unsatisfactory state of the law with regard to the retailing and dispensing of scheduled poisons, the Council do approach the Government in relation thereto with the view of placing not only the storage, dispensing, and compounding of these poisons, but that of all prescriptions, in the hands of qualified men, inasmuch as the knowledge and experience to do such work can only be acquired by a fully qualified chemist and druggist, and that no regulations for the mere storage of the poisons will give the security to the public that is so urgently desired.

The Chairman said he could not accept the amendment. Mr. Robinson's first resolution was not open to amendment, it being simply a question of Aye or No. They were there for the specific purpose of considering and, if thought fit, adopting certain regulations.

Mr. Nicholls did not wish to obstruct Mr. Robinson's motion, but merely asked whether the scope of it might not be widened.

Mr. Carteighe pointed out that Mr. Nicholls was proposing to tack on something as a condition precedent to adopting regulations. Moreover, they should not endeavour by little dodges to get further powers, but go to Parliament and ask fairly and squarely for what they wanted.

Mr. Truman then moved as an amendment:—

> That no voting be taken on this subject to-day, but that it be adjourned to some future period.

If the resolution was passed the Society would in due course apply to the Privy Council, and the Privy Council would consent as a matter of course. When the Privy Council gave its consent, a regulation was no longer a bye-law, and it became the law of the land as distinctly as if passed by both Houses of Parliament. His object in moving the adjournment was that he did not think it fair to the trade of the country in general that the members of the Pharmaceutical Society, who, unfortunately, were not a large proportion of the trade, should have the powers by that limited number of chemists who attended there that day of passing a resolution which would have such very serious consequences.

The Chairman ruled the amendment out of order, it being a direct negative.

Mr. Hambrook was of opinion that the members ought all during the last three months to have had an opportunity of making up their minds as to how they would vote on the motion. For his part he entirely agreed with Mr. Robinson's views. They had now an opportunity of putting themselves right with the Government, and he appealed to all those chemists who had the interests of the trade at heart to vote in favour of the adoption of poison regulations so that they might go with a good heart to the Government and say: "We have carried out the wishes of the Government and we have done what we promised to do years ago."

Mr. Barnard said that they had had a very able speech from Mr. Robinson, and no doubt, from his point of view, a very logical one. He was then proceeding to deal with the suggested regulations for the storing of poisons, when

Mr. Carteighe rose to a point of order. He said the question then before the meeting was whether poison regulations were desirable.

The Chairman said he understood that Mr. Barnard was going to speak on the general principle.

Mr Barnard then said he thought it was better for chemists and druggists to carry on their business in the way they thought fit without penalties. At the present time he did the very things that were suggested. It was a question if he were in a better position as a chemist and druggist with the option of keeping his troch. ipecac. c. morph. with other lozenges than he would be if he were under the compulsion of keeping them in a poison jar. In his opinion chemists and druggists as a body were carrying out these regulations to the letter as far as it was judicious that they should do so. He did not think the making of these regulations would be either for the protection of the public or give the chemists and druggists what they were desirous of obtaining. If they went to the Privy Council after making these regulations he was very much afraid they would hear nothing further of any Poison or any Pharmacy Bills for many years to come. But on the other hand, if they went on as they did now even if it were through the neglect of the Society in not making these regulations, some good might come of it.

Mr. Leo Atkinson said the position they were asked to arrive at was one of such vast importance to everyone engaged in pharmacy that it behoved them to examine it carefully, and if possible, dispassionately. They were all agreed as to the necessity of some regulation for the storage of poisonous drugs, and nearly every pharmacist did make regulations which he considered satisfactory for his own security and that of the public, and the paucity of accidents from poisoning showed what care was exercised. The majority of accidents happened through the negligence of nurses and attendants in hospitals and infirmaries, and a large percentage through the carelessness in private dispensaries, where the dangerous contents of bottles containing lotions and liniments were not sufficiently indicated, so that if these regulations were adopted it would leave the greatest source of public danger untouched. Of course, two wrongs did not make a right, and it would doubtless be well to set a good example, but there were some 12,000 or 14,000 chemists who had made regulations for themselves which they found satisfactory, and if a new set were brought forward they might be obliged to change, and this of itself might become a source of danger. The questions appeared to be first: Was it necessary to adopt penal regulations with regard to the storage of poisons, and if they were adopted, what advantage was going to accrue to the trade at large? Secondly, what was the full legal bearing of these legal regulations? And thirdly, he should like to know what means, if any, would be adopted for ensuring their uniform observance? The first question Mr. Robinson had answered very fully. He said it was necessary in order to put themselves right with the Privy Council, and that there was an understanding that the Pharmaceutical Society would introduce such regulations after the passing of the Pharmacy Act. Now that Act was passed in 1868, and he could quite conceive that at that time the Government might consider some regulations absolutely necessary, because the majority of those who were enfranchised by that Act were men of comparatively small education, engaged mainly in the grocery or provision trade, and in the habit of keeping corrosive sublimate, powdered hellebore, tea, coffee, cheese and all the requisites of the breakfast table on the same counter. When the Pharmacy Amendment Act was before Parliament recently, it was true that some remarks were made with regard to the neglect of the Pharmaceutical Society in the past, but that was a very old story. It had been talked about a great deal, but he doubted very much if these Parliamentary critics of pharmaceutical insufficiency had in their minds that antique document of thirty years ago. They read the newspapers and gathered the impression that there were a large number of dangerous compounds which could be obtained in a very free and easy way, and they knew that the Council had large statutory powers of enlarging the poison schedules, and that for thirty years they had not touched them, and he did not hesitate to say that the persistent neglect of that matter was a standing disgrace to the Society.

Mr. Carteighe said the argument of the Privy Council had been that as long as the Society did not fulfil its statutory obligations the Privy Council would not consider additions to the Poison Schedule.

Mr. Atkinson, continuing, said he believed that was only with regard to one poison. He doubted whether anyone present was thoroughly conversant with the legal construction of the proposed regulations, or the widest construction which had been put upon them, and that it was quite possible that if adopted the members might be forging another link in the chain which bound pharmacy, to the advantage of those unscrupulous parasites who had nearly devoured it. Personally he had not the slightest objection to poison regulations, and the more extensive and the more stringent they were the better. But he wanted to know if they were going to be enforced, or if they were to be adopted in a permissive sense with the view to some phantom

legislation; if so, that would be only another sham, of which there were too many already.

Mr. Pond thought it was the duty of everyone to support this resolution, and he hoped the vote would be unanimous. They could not expect the Privy Council to do anything for them unless they did their part. This was the first step upwards, and would tend to differentiate chemists and druggists from companies and dispensaries. The regulations were so simple and easy that there would be no difficulty in carrying them out.

Mr. Clague (Newcastle) thoroughly agreed with all Mr. Robinson had said as to the moral liability of framing regulations, but he wanted to be first assured as to what those regulations were to be, and that was not the kind of meeting for the careful consideration of such details. Would it be in order to move an amendment:—?

> That the Council be requested to consider what, if any, alterations are necessary in these regulations now put forward, and bring their decision before the members not later than the annual meeting.

The President said No, that was really a negative to the resolution; the simple question to decide was whether there should be regulations or not.

Mr. Wiggins supported the resolution, and thanked Mr. Robinson for the masterly way in which he had placed the matter before the meeting.

Mr. Harrison said, speaking as a member of the Society and not of the Council, he must say a word or two before the resolution was put, though he feared his should be as the voice of one crying in the wilderness. Mr. Robinson rested his whole case on some implied understanding existing between the Privy Council and a former President of the Society and members of the Council. He might be right, but he did not so read the Act of Parliament. He turned to the wording of the Act itself, and with regard to that Mr. Robinson suggested that the words "may" and "shall" were to a large extent interchangeable. He totally differed from that contention. It was sufficient to transpose the words in the clause referred to, and say "the members may comply with such regulations as the Society shall impose," to prove that those words were not interchangeable.

Mr. Robinson said he did not say that in every Act of Parliament the word "may" had the same signification as "shall."

Mr. Carteighe asked if Mr. Harrison had considered the reports of the debate in the House of Commons at the time the Act was passed, when the distinct statement was made that this thing should be done.

Mr. Harrison said he had read the Act of Parliament, and that was sufficient for him. He did not go to the debates which took place upon it. No doubt Mr. Headlam made certain statements which were accepted, but he could not commit the Society by any statements he made. The reference which had been made by Mr. Robinson to the Irish Pharmacy Act, where the word "may" was used, did not to his mind bear out the contention he based upon it. Going back to 1868, what was the state of things then? There had been a number of cases of poisoning, some through misadventure and some through crime, there was a great public feeling, and Parliament was appealed to. Naturally the Pharmaceutical Society was appealed to also, and their remedy was education. Parliament, however, was not sufficiently impressed with the idea that education would do all that was required for the safety of the public, but it said "We will give you an educational system; we will allow the men you educate to perform certain duties, but at the same time we must take the further precaution to prevent the public having their lives and their health destroyed or injured through the indiscriminate sale of poisons and, therefore, we must have regulations with regard to that." Care was taken in the first place that only qualified men should sell poisons, and, secondly, it was enacted that the more potent poisons should only be sold under certain restrictions. That was agreed to by the Pharmaceutical Society, but Parliament evidently thought that that might not in itself be quite sufficient, and intended to put a clause into the Bill under which full regulations should be made for the storage of poisons; but after some discussion and negotiation that was withdrawn. Evidently it was thought that the experiment should first be tried if having educated men would reduce the number of accidents, and if it did not, then there was power in the Bill to frame regulations as to the safe storage of poisons. That was his reading of the wording of the Act of Parliament itself. That state of things had gone on for thirty years, and the number of cases of accident occurring in chemists' shops was so small that it was plain there was not the need for the regulations of storage which might have been thought to exist thirty years ago, and it did seem to him that after thirty years' work in educating and examining those who carried on the business, it was adopting a retrogressive policy to impose these regulations now, and it was taking up a position which he did not think the Society would have dared to do. They were told that they ought to set themselves right with the Privy Council. He was the last man to say, "If you will give us so and so, we will do so and so," but at the same time he was the last man, if he were entering into delicate negotiations and had some consideration behind him which might be effective, to give that consideration first, without knowing what he was going to get. It appeared to him that they would give up the whole position if they now adopted poison regulations. Parliament had not shown itself remarkably active in the protection of chemists' interests, and if they taught the Government department that the best method of dealing with poisons was to have an elaborate system of regulations, and that education should be overridden by regulations and inspection, it would be, to say the least, a very dangerous thing. That meeting was a large and influential one, but it could hardly be taken as representative of the whole body of chemists in Great Britain, and with a full sense of responsibility, he asked them to pause before they forged for themselves another chain to bind themselves more closely. No doubt the meeting was legally called, and fully qualified to deal with the question, but at the same time, he appealed to the gentlemen present to allow their brethren in the country a fuller opportunity of expressing their views on the matter—an opportunity which they had not yet had, as the matter only came forward in a specific form a few weeks ago. He said that, having regard to the momentous character of the step to be taken, because nothing but an Act of Parliament could undo it, and it was a step which in his opinion would not add to the safety of the public. If it were in order, he would move as an amendment,

> That this meeting, whilst of opinion that the public safety demands an extension of the regulations for the sale of poisons, is also of opinion that regulations as to the keeping of such poisons are unnecessary and undesirable.

The President said he must regard that as a negative, and not as an amendment.

Mr. Harrison said he did not wish to enter into any controversy with the President on that point, but he would point out that he was not entirely against the resolution proposed, and he thought it was in order to move an amendment which went part of the way with the resolution, but not the whole way.

The President, having consulted the Solicitor, said he must rule that this was not an amendment, but a simple negative.

Dr. Symes said he did not propose to reply to the suggestions which had been put forward against this resolution, because those who had opposed it gave the best reasons, in the course of their remarks, for supporting it. Mr. Robinson had taken the pains to bring forward a number of facts which could not be controverted, whilst Mr. Harrison, in opposing him, had had to depend greatly upon sentiment. A meeting was recently held in Liverpool which was in favour of this proposal, and the Council had before it that day fifteen resolutions passed by associations up and down the country, by which the matter had been freely discussed; fourteen approved of the poison regulations, and one association only dissented. The matter had been under discussion since August, and if it were put off for another twelve months the majority would not begin to study it until the day before the meeting. He was very pleased to say that the Society was 600 stronger that afternoon than it was in the morning, and he believed the great majority of the members would support this step. He would say to those who thought they were laying a burden upon themselves that, if such a thing as an accident happened, they would be in a much stronger position if they were able to say that they carried out the regulations which had been laid down by the Society with the approval of the Privy Council; there would be no going behind that; whereas they knew that judges and coroners sometimes took very strange views as to what was proper care. Lastly, he would remind the members that they were only asked to formulate as regulations what they all habitually practised.

The Solicitor reminded the meeting that by the Act of Parliament, regulations might be made from time to time, so that any regulations now made would not necessarily be like the laws

of the Medes and Persians. He might also say that he had the privilege of being by the side of Mr. Sandford at the time when the Pharmacy Act was passed, and he could only say that he was astonished at the historical accuracy of the statement made by Mr. Robinson. He might also say that he had a distinct recollection that, when these powers were conferred on the Society, it was known that no such powers had ever been conferred on any Society in this country, and it was regarded as the very highest compliment to the Society that those powers should be so conferred.

Mr. Robinson said he would waive any right of reply, as the hour was late.

Mr. Parker wished to be quite clear that by passing this resolution the meeting would not be adopting the proposed regulations, which he thought might require modification.

The President having said that was so, put the resolution, which was carried, there being only three dissentients.

Mr. Robinson then moved—

That the following be adopted by the Pharmaceutical Society of Great Britain as regulations for the keeping, dispensing, and selling of poisons within the meaning of the Pharmacy Act, 1868, in accordance with the provisions set forth in Section I. of the Pharmacy Act, 1868 :—

1. That in the keeping of poisons, each bottle, vessel, box, or package containing a poison be labelled with the name of the article, and also with some distinctive mark indicating that it contains poison.

2. Also that in the keeping of poisons each poison be kept on one or other of the following systems, viz. :—

   (*a*) In a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary ; or.

   (*b*) In a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary ; or

   (*c*) In a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles.

3. That in the dispensing and selling of poisons, all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.

The President said he thought it would be most convenient to take the proposed regulations as a whole.

Mr. Nicholls thought they should be taken separately.

Mr. Robinson said, with the approval of the President, he would move them altogether, as they were the outcome of the most careful consideration possible by those well able to judge. They were formulated previous to 1871, and were adopted as recommendations by the general meeting at that time. When the Government brought in a Bill in 1871 these very regulations were inserted in that Bill, so that there was some assurance that they would meet with the approval of the Privy Council. He would also point out that they were very flexible and adapted to any class of business. He had some sympathy with the view which had been expressed, that very dilute preparations should not be treated in this way, but he would point out that if they said that preparations so dilute as not to be poisonous, although containing a scheduled poison, were not to be subject to regulations, it would be opening the door to the contention that they ought not to prevent other people than chemists from selling them. The judges had decided that any person who sold a preparation, however dilute, if it contained a scheduled poison, was thereby selling that poison. He would also point out that the carrying out of these regulations would be to some extent at the discretion of the members. The only body to institute prosecutions would be the Pharmaceutical Council, which would deal with each case on its merits, and therefore chemists were protected from any danger that their whole stock would have to be kept under these regulations. There also seemed an idea in some quarters that each man must make up his mind which of the alternative systems, *a*, *b*, or *c*, he would adopt, and then keep his whole stock on that system, but that was not so, each poison might be kept on any one system, as was most convenient. Every care was taken when these regulations were drawn by Mr. Sandford, Mr. Carteighe, Mr. Hills, and others whom he need not name, and they were in fact the outcome of two years' careful thought, so that there was really no foundation for the idea that they would be forging a yoke for their own necks. They were perfectly feasible in every respect. He believed they would be generally accepted ; at the same time they could be amended in future if experience showed that alteration was necessary. He would therefore suggest that they be passed as they stood, because they were so elastic that they would apply to every kind of business. Even a cask of arsenic might easily have a piece of red stuff fastened over the top to distinguish it, and that would be clearly within the regulations. He might say that he had already been approached by bottle makers and printers, and there would be no difficulty in procuring stock bottles corrugated or fluted at the back, and he had been shown a poison label surrounded with sand paper. He could not agree with the idea which had been thrown out of having green and red labels to distinguish poisons of varying potency ; it would be open to anyone to adopt such measures for himself, but it would be going too much into detail to include them in the regulations, and such refinement was not necessary.

A Member asked what arrangement would be made about inspection.

Mr. Robinson said the Act did not give any power of inspection, and he did not advocate that there should be any.

Mr. Pond seconded the motion, and

Mr. Carteighe supported it in a speech of some length, in which he pointed out that probably every gentleman in the room was capable of devising a code of poison regulations, but it was certainly not desirable to have an elaborate discussion on details, nor was it desirable to produce a code so complete that any huckster or errand boy could safely be trusted to sell poisons under them. The regulations they wanted were such as could be applied by educated men. He therefore advised the members not to tinker in detail with the regulations, which would be a mere waste of time. The men who drew up those regulations thirty years ago objected as much to poison legislation as Mr. Harrison or anyone else did, but they were the creatures of circumstance. They had to accept the decision of the House of Commons Committee, that regulations were required as to the sale of poisons. The proper thing, no doubt, was to educate a man, and leave him to do what he thought fit, but the majority (at that time at any rate) was against that view. The trade, as it was called in those days, opposed the Pharmaceutical Society and produced a Bill of its own ; then the two Bills went before the Committee, and the ultimate result was the Act of 1868. These regulations were beautifully vague. They were drafted for educated men, and any such men could follow them with the greatest ease. Of course it was no use to have regulations unless there was some power to put them in operation. In this case the power would be in the hands of the Council ; no proceedings could be instituted without the movement of that Council. Again, these regulations having been made, they could be altered from time to time if necessary. The question of inspection need not be considered. Having possessed the confidence of the Society for many years, and having been Mr. Sandford's lieutenant in years gone by, he appealed to the members to put an end to this controversy, and especially not to quibble over these regulations in detail. They might rest assured that no Council of the Society would ever take undue advantage of any brother who might, by accident or otherwise, or through the carelessness of his servants, be found wanting.

Mr. Campkin (Cambridge) said that he had come some distance to attend the meeting on the instructions of his local committee, and he should have liked to take part in the debate on the first proposition, but he gave way in order to save time. He now rose, however, to elicit a little further information. These proposals were in the name of Mr. Robinson, but they were now told that they had the sanction

of the Privy Council, or that they had the sanction of that Council in 1868.

Mr. ROBINSON said when the Government brought in the Bill of 1871, these very regulations were included in it.

Mr. CAMPKIN asked if they had been before the Privy Council since then?

Mr. CARTEIGHE said of course not.

Mr. CAMPKIN said they were now asked to pass these bodily and that he thought was asking a very great deal. Although he had the utmost respect for the meeting and the greatest admiration for the remarks made by Mr. Robinson and others, he knew there was a large number of equally educated and thoughtful men who had not been able entirely to gauge the details of this question, and who would hesitate to vote upon it immediately. The principle had been carried, and when that had been considered by the members throughout the country, perhaps they would also be in favour of the details, but he would remind them that the position now was very different to what it was thirty years ago, and he would suggest that the details should be relegated to the Pharmaceutical Council to consider and report to the annual meeting in May, during which time representations could be made on the subject. Most pharmacists were inclined to be conservative, and their motto was *festina lente*. He would therefore move what he had suggested as an amendment.

Mr. LANCE seconded the amendment.

Mr. CHARLES UMNEY said these regulations were exceedingly broad, and he was able to carry them out on a large scale in a warehouse with over a hundred and twenty people employed.

Mr. CLAGUE said the difficulty they felt in Newcastle arose from the use of the word poison. They were now assured that the prosecuting body was the Pharmaceutical Council simply, but the Government Bill which, though it was withdrawn, might be introduced again, took away that power from the Society and under that Bill it would have been possible for a public informer, a policeman or anybody else, to prosecute a chemist under the regulations. The word "poison" did not mean now what it meant in 1868, but a great deal more. He did not think anyone, if he carried out these regulations strictly, could leave aqua chloroformi out of the poison cupboard. He therefore thought they would be stultifying themselves if they placed on their own shoulders a yoke which they knew they could not bear. It was all very well to think that a benevolent Pharmaceutical Council only could prosecute, but there was a strong probability of the whole question of poison and pharmacy legislation being dealt with by the Government, and the Council might cease to be the prosecuting body, whilst the regulations would remain in force. He therefore thought the word "poison" should be defined to [mean what it meant when the regulations were drawn up originally. If that were done he would follow Mr. Robinson to the full. The Solicitor had pointed out that the regulations might be added to from time to time, but the question was, might they be subtracted from? It might be so with the consent of the Privy Council, but that consent could not always be obtained.

Mr. CARTEIGHE rose to order. He suggested that the motion for adjournment moved by Mr. Campkin should be put, because if they were going to adjourn, a further discussion was waste of time.

The SOLICITOR pointed out that the word "poison" had a statutory meaning given to it by the second section of the Act, and that remained now the same as it was in 1868.

The PRESIDENT then put the amendment of Mr. Campkin, which was lost by a large majority. The original motion was then put, and carried with two dissentients.

Mr. ROBINSON moved a vote of thanks to the President, which was seconded by Mr. IDRIS, and carried unanimously.

The PRESIDENT, in responding, said he thought they had done an exceedingly good day's work, which he hoped would bear good fruit before long.

OCULIN.—Under this name Lagrange has prepared a glycerin extract of the ciliary and vitreous body of the eyes of oxen. This is obtained by macerating the parts in an equal weight of glycerin, then adding as much artificlal serum as there is glycerin, finally filtering through a Chamberland filter. Oculin is employed in certain eye diseases, chiefly in retinal affections. It may be given by injection, but the author prefers to administer it in the ordinary way, by the mouth, in doses of 3 C.c. in half a glassful of water.—*Repertoire* [3], x., 462.

BURNLEY AND DISTRICT CHEMISTS' ASSOCIATION.

The newly-formed Association of chemists in Burnley and district held its first general meeting on Tuesday, January 10, Mr. J. A. HEATON presiding.

Messrs. Taylor (Padiham), Whittaker (Brierfield), and Dawson (Colne), were proposed as members and admitted to the Association.

The CHAIRMAN said the only thing of importance arising out of the minutes was the deputation to the Hon. Philip Stanhope, M.P. for the borough, and that was with respect to "company pharmacy"—a pernicious system of men trading under the name of a company, who were not qualified chemists. The deputation explained to Mr. Stanhope, he continued, that an unqualified man could take to himself six other men equally as unqualified as himself, and form a company, and that company could have all the privileges and advantages of fully qualified chemists. The deputation seemed to thoroughly convince Mr. Stanhope that they had a grievance, and the speaker was sure that if the matter came into prominence Mr. Stanhope would help them.

Mr. COATES said that the matters laid before Mr. Stanhope were "company pharmacy" and the restriction of dispensing solely to chemists. They explained the time and expense chemists were put to, and compelled to, for the protection of the public, yet at the same time they were handicapped by men all over the country, who had branch shops. Those companies often employed a fully qualified man, who, however, was under the thumb of the directors, and had to wink at the breaches of the law or lose his situation. Then the company was not liable for mistakes; it was the seller. Dispensing ought to be restricted to chemists, who for thirty years had had to qualify themselves for the position of dispensers. The examinations were now so stringent that no doubt chemists were more qualified than a medical man in some respects. Mr. Stanhope saw the difficulty of the chemists, and thought there would be some sort of remedy. It was a technical point, and he should be in favour of a Bill being referred to a committee for technical evidence.

The following memorial, which was afterwards signed, and to which later were to be added other names, was proposed by the Chairman:—

> To the Council of the Pharmaceutical Society,—We, registered chemists of Burnley and district, hereby requisition that the Council immediately take steps to demonstrate the legality or otherwise of unqualified persons being able to use the title and act as chemists and druggists in virtue of the Limited Liability Law. We think that, if this ruling be allowed, the safety of the public, intended to be effected by the Pharmacy Act, is not secured, and that it is an injury to public rights and a gross injustice to legally qualified chemists that anyone should be allowed, without examination, the title of "chemist and druggist."

Mr. COATES said that if people would look at the Act, they would see that the title of "chemist and druggist" was personally restricted to the individual, and that they would find that a man who dealt in drugs wholesale was not called a wholesale druggist, but a wholesale dealer. That one fact was sufficient to show that the Legislature intended that when a man was qualified it was a personal title, and could not be used by a collection of individuals. The law was so stringent that it would not allow an unqualified man to go into partnership with a qualified man.

Mr. TAYLOR supported the memorial, which was carried.

The PRESIDENT then referred to the regulations which would no doubt be passed by the Pharmaceutical Society next day, with regard to the storage of poisons.

Mr. RICHARDSON moved that the Burnley Association express sympathy with the regulations.

Mr. SHEPHERD seconded, but, on the motion of Mr. DODSLEY, it was added that the Association thought the poisons referred to by the regulations should be specified.

GUAIAQUININE.—Guaiaquinine, $C_6H_4O_2CH_3HSO_3 \cdot C_{20}H_{24}N_2O_2$, is described as a yellowish, acid, bitter powder, readily soluble in water, alcohol, and diluted acids. According to Merck, it is a substitute for guaiacol, being free from the odour and caustic properties of that body. It is obtained by the action of guajacolsulphonic acid and quinine in molecular proportions.—*Pharm. Cent.*, xxxviii., 501.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

A meeting of the above Association was held in the rooms of the Chemical Club, Victoria Hotel, on Wednesday, Jan. 11. Mr. G. S. Woolley presided. After the preliminary business of reading minutes, electing members, etc., a paper was read on

Advanced Practical Work for Pharmacists,

by Mr. Francis J. H. Coutts, M.D., who expressed the pleasure it gave him to address those present that evening. He said the tendency of recent development had undoubtedly been to curtail the legitimate work of pharmacists, such as dispensing, etc. The advent of the large advertising firms with their special preparations and the activity of large manufacturing chemists in Germany in the preparation and exploiting of new remedies, the treating of animal extracts, etc., had had a bearing in the same direction. All this had been at work, limiting and narrowing the field of true pharmaceutical work for the individual pharmacist, and forcing him more and more to be the retailer of other men's goods rather than to utilise the knowledge which he had been at so much pains to acquire. In other directions they had the big cash chemists and the grocers with a drug department, so that it was no wonder pharmacists were looking for other work to take up. He thought the most satisfactory solution would probably be for chemists to cease prescribing and medical men to cease dispensing, so that each would do the work for which they had been specially trained. Notwithstanding the tendency to limit the work of the pharmacist more and more, he was informed that year after year the examinations were becoming more stringent, and a higher standard of education demanded from those who wished to become pharmacists. It was said that in the year 1900 the standard was to be raised to the dignity attendant on obtaining a University degree, and that there would be demanded from each candidate a knowledge of mathematics, etc. It was evident then that the pharmacists of the future would be men of even wider basis of general culture than had been required in the past. He thought it was also plain there would be increasing dissatisfaction with the narrowing borders of pharmaceutical work, and an increasing outlook for the direction in which expansion may be profitably made. On what lines might they expect that development to take place, and what form of advanced work might be looked upon for pharmacists to take up and develop? It would give him great pleasure if, in the course of the remarks and experiments he had to make that evening, he should be helpful in assisting them to a solution of the difficulty. Pharmacy had been called the handmaid of medicine, and the development must be looked for in subjects having relation to practical medicine, and also in bacteriological work, as also microscopical specimens for medical men. The *Pharmaceutical Journal* had taken up the matter, and there were articles in which the latest results in bacteriology, as well as medical chemistry, were regularly chronicled. In France he was told pharmacists had already taken up the work on those lines. There were also classes in London and at Liverpool in bacteriology, etc., for pharmacists. For his part he thought it would be necessary for pharmacists and medical men to work together, and be more closely associated. He did not see why a medical man who was too busily occupied with other matters should not send urine to be examined or sections of tumour, cancer, to be stained by them. In many cases it would be useful for diagnosis and treatment. Dr. Coutts went into various methods of testing urine, his directions being clear as well as elaborate, suggesting that if the pharmacist did the testing and staining, the medical man might afterwards examine it under the microscope, with a view to guiding him in future treatment. In regard to potable water, he said the investigator had to take into consideration transparency, suspended matter, smell, free ammonia, albuminoid ammonia, etc., besides which the presence of nitrates, metals, etc., might have to be inquired into. No doubt pharmacists had some knowledge of the processes, and he gave the methods of obtaining the grains per gallon, showing the hardness of the water, and the percentage of ammonia albuminoid and other constituents. It was necessary for water to be tested for albuminoid ammonia, as indicating sewage or other contamination, and at the present time the bacteriological examination had become equally important with the chemical, but this demanded considerable attention for bacteriological processes. Directions for testing milk were given. Many pharmacists were now good photographers, and as many medical men wished for photographs of their patients under certain circumstances, pharmacists might lay themselves out for doing such work. He thought medical men would be more likely to give it to pharmacists rather than to regular photographers. He also pointed out that cutting and staining might be soon attained by practice, and in preparing slides he had brought a sample of a cheap microtome of simple construction (Cathcart's), and demonstrated the method by which sections were cut. He concluded by thanking them for the patience with which they had listened to his remarks, and trusted they would be of service.

The Chairman, on behalf of the Association, thanked Dr. Coutts for his interesting paper. He quite agreed with him that pharmacists in the future would have to work in that direction and keep themselves abreast with the necessary work they would be called upon to perform, and he trusted that medical men would see their way to assist them in the manner he had indicated.

Mr. Grier, in seconding, said that much in Dr. Coutts' paper had been quite new to him, as he had never gone into the thing practically, except as an amateur, and he thought the lines mentioned in his paper were the lines on which pharmacists would most reasonably develop. Seeing that in the future pharmacists would be much better trained than they had been in the past, it was a line which might be reasonably and profitably looked up.

Mr. Kemp supported, and said there was a great deal in Dr. Coutts' paper which should provide food for reflection, and, as Mr. Grier had pointed out, possibly some amongst them in the near or distant future might find a profitable outlook in connection with pharmacy.

Mr. Hoseason, in supporting the resolution, made a few remarks on the paper, and suggested that radiograph work was a branch which might, with advantage, be added to the programme of the pharmacist of the future.

Mr. Walter Gibbons also supported the vote of thanks, and said after hearing the paper he was greatly impressed with the fact that there was a wide field open to pharmacists. As to profitableness, he had been engaged in assisting medical men with these tests, and he might assure Mr. Grier that it had been decidedly profitable in one way or another. It might be perhaps rather an unworthy way to put it, but still scientists had to look a little to profit as well as fame. He hoped that Dr. Coutts' ideas would bear fruit in all parts of the country. From a fair point of view the chemist had been neglected as an analyst, and he hoped the time was not far distant when he would take up in this respect the position to which he was entitled.

The Chairman pointed out that a course of lectures on bacteriology was being given at Owens College, and as they were given at an hour which was convenient for pharmacists, he thought it would be to their advantage to take them up.

The vote of thanks having been passed with acclamation, the lecturer replied on some of the points raised. In regard to radiographic work, he said he had had this in his mind when preparing the paper, but as the apparatus was so very expensive he did not think it necessary to bring it in. He thought, however, that the association of medical men and pharmacists would be of advantage to both. The education of pharmacists was now of such a thorough character that it really entitled them to do analytical work, and this was one of the thoughts he had had when he wrote the paper.

This concluded the proceedings.

Comparative Value of Mydriatics.—Schneider has compared the value and drawbacks of certain mydriatics thus:—*Homatropine*, in 1 per cent. solution; Mydriasis of the pupil is very marked, reaching as a mean 6·5 M m., but it provokes paralysis of the accommodation, which persists for about twenty-four hours. *Cocaine*, in 4 per cent. solution, is free from this defect, but, on the other hand, mydriasis is not so marked, rarely exceeding 5 M.m., and, moreover, the corneal ephithelium is softened. *Ephedrine*, in 10 per cent. solution, causes no paralysis of the accommodation; combined with 1 per cent. of homatropine it gives rise to a moderate mydriasis 5 to 6 M.m., which disappears entirely in four or five hours. *Euphthalmine*, in 5 per cent. solution, produces only a very slight derangement of the accommodation, and has a considerable power of dilation. Unfortunately, the price of the last two mydriatics mentioned is so high as to preclude their extensive general use.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held at the Dewsbury Town Hall on Monday evening, Mr. A. FOSTER presiding, and members being present from Dewsbury, Batley, Heckmondwike, Mirfield, and Cleckheaton.

The SECRETARY, Mr. R. Gledhill, reported the receipt of a letter from the Hon. Secretary of the Federation of Local Pharmaceutical Associations, together with a report of a meeting held at Belfast. The Dewsbury Association was asked to consider the subjects mentioned in the report, and to pass resolutions thereon. In a subsequent letter Mr. R. C. Cowley (Secretary of the Federation) called attention to the failure of the present Pharmacy Act, both as regards affording protection to the legitimate chemist and druggist, and in protecting the public in whose interests it was framed. The present time, Mr. Cowley went on to say, seemed to be opportune for demanding that the public should be protected from illegitimate traders. Reference was made to a proposed new Bill, and the Dewsbury Association was asked to affiliate itself with the Federation.

Mr. W. STEAD, Heckmondwike, said he was distinctly in favour of joining the Federation, and several other members expressed the same opinion, Mr. J. W. CUSSONS, Ossett, remarking that there was nothing like combination. After a conversation respecting its objects, it was decided, on the proposition of Mr. CUSSONS, seconded by Mr. F. MALLINSON, Heckmondwike, to join the Federation.

Mr. STEAD then introduced the question of the poisons regulations, but before dealing with this matter he said the majority of the members of the Dewsbury Association were members of the Pharmaceutical Society, and he believed several more were about to join. In this respect the Dewsbury Association would be in as satisfactory a position as any similar association in the country. He went on to say that he would like them at an early date to take into consideration and express their views with regard to the amendment of the Pharmacy Act. Mr. Stead referred to the Bill which was brought before Parliament last year and defeated, and then dealt with the proposed alterations in the regulations for keeping, dispensing, etc., of poisons. They had all adopted some system for the keeping and selling of dangerous articles, and if the proposed alterations were passed they would not be compelled to do anything which they had not been doing in the past. In addition to the regulations *a*, *b* and *c*, he had some articles so secured that it was a difficult matter to get at them. They could secure the perfect safety of customers with these three regulations. Mr. Proctor's letter was a valuable contribution. If they supported Mr. Robinson's proposition, they should do so on the understanding that Mr. Proctor's suggestions were adopted. If the clause suggested by Mr. Proctor after "*c*" was approved, it would get over a lot of bogies that had been set up.

Mr. BROADHEAD (Batley): If it came to a legal argument, it would be contended that all these articles should be kept in a cupboard.

The CHAIRMAN: But this would get over it.

Mr. STEAD said that if these proposed regulations were adopted by the Pharmaceutical Society, they would be able to go with more confidence before Parliament.

Mr. BROADHEAD said they had for years been going on attending to their work, protecting the public, and practically carrying out all these suggestions. Now they were to be brought before the Privy Council, and made legal. There must be some reason for this. He supposed they wanted to stop a Poisonous Substances Bill being adopted.

The CHAIRMAN: I should think that is what is aimed at.

Mr. BROADHEAD said that if it were not for that he would object to the proposed alterations. They would have to accept these troubles and difficulties to gain their ends. It might also be the object of the Society to cause the regulations to be made to apply to limited liability companies; but if companies were subject to the regulations, then the case against such companies would fall through. If stores were not to be subject to the regulations, they must clamour for a new Pharmacy Act. He believed that was at the bottom of the present movement. They must accept the proposal to gain their ends.

Mr. STEAD: If we do not we shall have something very stringent before many years. The Privy Council will try again, and if the Privy Council begin they will go to dangerous extremes.

After discussion, a resolution was proposed by Mr. STEAD and seconded by Mr. G. N. GUTTERIDGE (Dewsbury), approving of Mr. Robinson's proposals, providing Mr. Proctor's amendments were added.

On being put to the meeting the resolution was passed unanimously, and Mr. Gledhill was instructed to communicate the decision to the Secretary of the Pharmaceutical Society.

Before the members separated Mr. G. WALKER (Dewsbury) suggested that inspectors should be appointed by the Society to visit all shops where poisons were sold.

PHARMACEUTICAL SOCIETY OF IRELAND.

COUNCIL MEETING.

The monthly meeting of the Council was held on Wednesday, the 4th instant, at the Society's house, 67, Lower Mount Street, Dublin, the PRESIDENT, Mr. R. J. Downes, beingin the chair, and the other members attending being Messrs. Wells, Bernard, Tate (Belfast), Brittan (Drogheda), Michie, Professor Tichborne, Dr. Walsh, Kelly, Grindley, and Simpson.

The first business was the co-option of a member to fill the vacancy on the Council caused by the death of Mr. E. P. Murray.

Mr. WELLS said he believed they all wished to see more druggists on the Council, provided they were men who would work harmoniously with them for the good of both druggists and pharmaceutical chemists. He had great pleasure in moving that Mr. Robert Spence, of Castleblaney, be co-opted. He did not know Mr. Spence personally, but he had been told that he was one of the old class of druggists who would work harmoniously with them, and who had no desire to encroach on the province of the pharmaceutical chemists.

Mr. GRINDLEY seconded the motion.

Mr. BERNARD asked was this proposal made by Mr. Wells in pursuance of a conversation that lately occurred between Mr. Rankin and some members of the Council? He asked this question because he did not wish it to go forth that the present proposal was made in compliance with the contention that the Belfast druggists were not fully represented on the Council.

Mr. WELLS: I do not propose him in any way in connection with the Belfast demand at all. In fact, Mr. Spence consented to act twelve months ago, and I have had his name for that time before me. I would be sorry to co-opt any man in answer to a demand, I only do so from a desire to have druggists amongst us. At the same time I think the Belfast gentlemen ought to show their sympathy with the Society by becoming members of it. We have only two druggists in Belfast subscribers to the Society at present.

The PRESIDENT: This will be the third representative of the chemists and druggists that we have elected, Mr. Turkington corresponds with us occasionally and has a good deal of interest in the Society, but he has had domestic affliction of late. Mr. Burns, whom I nominated twelve months ago, never turned up except to one meeting.

Mr. BERNARD said the druggists had one representative on the Council for every eighteen of their subscribers to the Society.

The motion was then put and carried unanimously.

A letter from the President of the General Medical Council invited the Society to co-operate in the preparation of the next British Pharmacopœia.

Professor TICHBORNE moved that a committee of five, together with the President and Vice-President, be appointed to act in conjunction with the Pharmacopœia Committee of the General Medical Council, and that a member of that committee be appointed to confer with the Pharmacopœia Committee when necessary. It was not necessary that the proposed committee should be selected from the Council exclusively, but it was indispensable that they should be pharmaceutical chemists keeping open shop. The Pharmacopœia Committee would only submit to the committee now proposed to be appointed such questions as they should think desirable; that when the time approached for the publication of the new edition of the work, the gentleman now appointed to confer would have to go over to the Pharmacopœia Committee in London.

Mr. BERNARD seconded the motion.

Mr. WELLS said it was unfortunate that the Council of the English Society should have lent its services to the Pharma-

copœia Committee in the way in which it had done. If it had held aloof as they (the Irish Council) did, and not given any assistance to the General Medical Council, the latter would have had to give to the pharmacists the place in the preparation of the Pharmacopœia to which they were justly entitled. It should not have been a matter of sucking their brains. The representative of the Council whom it was now sought to appoint would simply go to London and express his opinion, but would not be allowed any power of voting. There would not be a satisfactory Pharmacopœia until the men who prepared it consisted of both pharmacists and medical men, as was the practice in other countries. Now the Irish Society were only getting representation because the English Society had given itself away.

Professor TICHBORNE said there was no voting in the Pharmacopœia Committee. The opinion of the Council's representative would have as much weight as that of any other person. It would require a new Act of Parliament to meet Mr. Wells' views. The Act in force said that the General Medical Council were to produce the Pharmacopœia.

Mr. WELLS: No, to publish it. The words are: "Shall cause to be published under their direction."

Professor TICHBORNE said they were not dealing with that question now. Were they to take offence at their previous treatment and say that they would not go? That would be very injudicious. The less they said about bygones the better. Let them make a fresh start.

Mr. WELLS said that some of the suggestions that they made before were thrown aside.

Professor TICHBORNE: We do not know who was right.

Mr. WELLS: But we do know who was right. Some of the preparations will not keep.

Mr. KELLY and Dr. WALSH expressed the opinion that the recognition now offered to the Council should be accepted.

The motion was agreed to unanimously.

The President was appointed to act as referee, and the following gentlemen were named as a body from whom the Committee is to be selected at the next meeting of the Council: Messrs. Wells, Kelly, Charles Evans, Allen, Doran, Dr. Walsh, Dr. Whitla, Messrs. John Smith, George Browne, Payne (Belfast), and Michie.

Other business having been disposed of, the Council separated.

EVENING MEETING IN DUBLIN.

At Dublin, on Monday last, the usual fortnightly meeting for the discussion of scientific questions was held at 67, Lower Mount Street, the PRESIDENT, Mr. Robert J. Downes, in the chair. There was a large attendance, amongst those present being Messrs. Simpson, Wells, O'Connor, Hunt, O'Sullivan, Conyngham, P. Kelly, Tyrie, Turner, Michie, Johnston, Miss Ada Wyatt, Dr. J. A. Walsh, Professor Tichborne, Dr. J. C. McWalter, etc. The minutes of the last two meetings were read and confirmed. A letter of apology for non-attendance was received from Mr. J. Smith. On the motion of Mr. JOHNSTON, Mr. J. A. Ray, M.P.S.I., was elected hon. reporter in chemistry to the meetings.

Dr. WALSH then proceeded to speak on

Some Dispensing Difficulties,

and said the idea of collecting one or two prescriptions off the common had occurred to him as likely to be of interest to the members. Since the last season he had collected three, the first of which was quite an old friend. It was as follows:—

℞	Sodii salicyl	ʒiii
	Quin. Bisulph.	Gr. 16
	Tr. Podophylli	ʒii.
	Spt. Ether. Nit.	ʒiv.
	Aqua Camph. ad	ʒviii.
Fc. mist.		

The second was:—

℞	Liq. Plumbi Subacet.	ʒii.
	Tr. Benzoin Co.	
	Aquæ aa	ʒii.
Ft. lotio.		

and the third:—

℞	Magnes. Sulph.	ʒii.
	Tr. Zingit.	
	Tr. Rhei Co., aa	ʒi.
	Aqua Menth. Pip., ad	ʒvi.
Ft. mist.		

Dr. WALSH described at some length the difficulties experienced in dispensing these formulæ, and explained the steps he took in each case to turn out the mixture in regular course. He dwelt on the lumpy appearance of a portion of the constituents of the first prescription, and showed a specimen bottle he made up with the characteristic properties of the drug made up *secundum artem*, which was quite sightly. He used the neutral sulphate of quinine, neutralising the spt. eth. nit. with liq. sodii, and adding half an ounce of mucilage. The second prescription he exhibited in a test tube, and said the addition of two drachms of olive oil succeeded in suspending the resinous precipitate. The third, which he mentioned reached him a few days ago, came in for an equal degree of attention, it being demonstrated that the mixture assumed a solid condition, owing to dehydration of the solution of magnes. sulph. by the spirit.

In the discussion which followed, Mr. CONYNGHAM questioned the wisdom of adding to or taking from the prescription without first consulting the prescriber.

Mr. JOHNSTON though the end justified the means. The mixture must be sent out respectably and if the dispenser were unable to see the doctor he must of necessity use his own judgment in setting things right. Each case he held must be taken on its merits, and so long as the compounder used nothing out of the way, he held it was right and proper to prepare a mixture as it ought to be prepared.

Mr. KELLY agreed with Dr. Walsh as regarded the preparation of the first prescription. He spoke of the effects of acids in preparations, and gave several instances in support of his observations. He thought Dr. Walsh rightly used his own discretion in the matter, but he would not go so far as that gentleman in the treatment as described of the second case. He would certainly prefer to ascertain beforehand the prescriber's wishes.

Mr. JOHNSTON having again spoken and mentioned some formula bearing on the direct question, and

Mr. MICHIE contributing a few remarks as to how, in his opinion, the prescription should be prepared,

The PRESIDENT summed up in favour of going outside the prescription in certain cases, and added he never hesitated to use extemporaneous syrups. Dealing with incompatibles, he came across the following prescription:—

℞	Barii Chlorid.	Gr. i.
	Calcii Chlorid.	Gr. 72.
	Quin. Hydroch.	Gr. 20.
	Liq. Arsen. Hyd.	M. 36.
	Liq. Hyd. Perchlor.	ʒ ii. *(sic)*
	Acid Hydroch. dil.	ʒ iss.
	Aqua Dest. ad	ʒ vi.

At present he could not see the difficulty. The prescription was twice dispensed without attracting special attention, but on the third occasion the difficulty presented itself, and had not since been overcome. The mixture was perfectly clear for an hour after it was made up. There was no precipitation on the first occasion that the mixture was compounded, but then it was dispensed and despatched at once and consumed without delay. The fourth bottle, however, was sent out all right.

Mr. O'SULLIVAN having spoken on the advantage of dissolving quinine in acid, and

Dr. MCWALTER having followed with some remarks on chemical reaction, in which he contrasted the effects of light on certain compounds, and brought Squire to bear in the matter,

Mr. JOHNSTON had the last word by suggesting the desirability of having a laboratory upstairs, in which incompatible mixtures generally could be tested under favourable conditions.

Dr. WALSH next read an exhaustive communication on

Crystallisation,

in which he considered what was meant by a crystal, distinguishing such from any other crystalline body. He showed two large cases of glass modelled like the various forms of crystals, and having defined what was a true crystal, compared the glass models and showed in what respects they fell short of the genuine article. Having given the etymology of the term he classified crystals into those which were natural and others that were artificial; the former occupied the attention of the ancients and a great many of these possessed the chemical formulæ of substances with which chemists were well acquainted. To two crystals in particular the essayist called special attention, namely, calcite and amagonite, the chemical formulæ of which were identical. They were known as isomerides, and possessed different

crystalline forms, an example being furnished by the red and yellow oxides of mercury. The production of artificial crystals was next dealt with, and the five methods of their formation, namely, sublimation, fusion, molecular change, electrolysis, and solution, were described in their respective order of importance. Beginning with sublimation, temperature of various degrees ranging from freezing point to 1000°, and the effect produced on various molecules came under notice. Latent heat and chemical reaction were described in the same category. Dealing with the production of crystals by fusion the spcaker inferred that many natural crystals were formed during the cooling down of the carth's crust from a molten condition. The possibility of manufacturing one's own diamonds by dissolving carbon in molten iron, and allowing it to crystallise out was mooted. Molecular change was described at some length, and in that connection Dr. Walsh called attention to the fact that prepared calamine, according to Martindale and Squire, was not, as sometimes taught, impure carbonate of zinc, but was impure oxide of zinc obtained by calcining the native carbonate. Electrolysis was a tedious process, and the crystals were apt to be spoiled by structural anomalies. The production of crystalline salts by solution was, in the speaker's opinion, the most important of the five processes referred to. Solution was considered by some authorities to be a mere physical process; with others it was a chemical reaction. The prevailing theory was that a compound substance, when dissolved, was split up into its constituent ions. Some illustrations of gaseous and saline diffusion were given, and heat and cold in their relation to atmospheric phenomena came under review. Saturated solutions and dissolved substances were next dealt with, and also the precipitation of crystals by mixing two soluble bodies in solution therewith. Water of solution should be distinguished from water of crystallisation; three classes of crystals were connected with the latter, *i.e.*, *cryo* hydrates, *hygo* hydrates, and *baro* hydrates. In the last-named class a familiar illustration was given by toys coloured with cobalt, which remained blue while the air was dry, but turned red when the atmosphere became moist, thus making a rough weather guide. The heat resistance of crystals of magnesium sulphate was spoken of, and various chemical formulæ in connection were given, and an interesting experiment was made by heating a solution of mono-symetric cobalt chlorine, $COCl_26H_2O$, which changed from red at ordinary temperature to blue at 120°, at which temperature the salt gave up four molecules of H_2O and became $COCl_22H_2O$, which was blue. The four molecules did not all come off at the same temperature, but the colour transition was gradual as each molecule separated. The formation of crystals was hastened or determined by depositing in the solution a crystal of the same substance; a scratch in the glass of the containing vessel, or a thread, afforded a foundation for the crystals. The speaker referred to the genesis of crystals, and quoted a passage on the subject from Fock's 'Chemical Crystallography.' The molecular attraction of supersaturated globules known as "globulites," and the formation therefrom of crystals were a feature of the subject, and the nomenclature of crystals together with a series of beautifully executed drawings from the pen of the essayist illustrating the initial form of a crystal were greatly appreciated. The growth of crystals in solution, their relationship with one another, their measurement by means of the contact goniometer of Romé de l'Isle, by Wollaston's instrument, and by the reflection goniometer improved by Haüy, the "father of crystallography," were detailed, and sketches of these appliances were shown. Historical crystallography next engaged attention, and the results of the investigations of Romé de l'Isle and Brarais on the subject were mentioned. The speaker concluded by giving an outline of six systems of crystals, illustrated on specially prepared charts.

Dr. McWALTER and Professor TICHBORNE discussed the paper in laudatory terms, and

The PRESIDENT having expressed pleasure at seeing such a large attendance, the proceedings terminated.

BROMALBACID.—This is a compound analogous to iodalbacid. It contains 6 per cent. of bromine. In therapeutic action it resembles potassium bromide, but is without the harmful secondary action of that salt. The dose varies with the effect desired to be obtained; as a nervine from 1 to 2 grammes per diem or a total of 3 grammes in twenty-four hours is sufficient.—*Zeit. des Allg. Oest. Apoth. Vereins*, lii., 516.

CHEMISTS' AND DRUGGISTS' SOCIETY OF IRELAND (NORTHERN BRANCH).

The Committee of this Society met on last Friday evening, 6th inst. last, in the rooms, Garfield Chambers, Belfast. Mr. JOHN WATSON, M.P., in the unavoidable absence of the President (Sir James Hazlitt, M.P.), presided. The minutes of the previous meeting were read and adopted.

On the motion of Mr. J. RICHARDSON, Mr. J. D. Carse, Woodstock Road, was unanimously elected a member of the Society.

A letter was read from Mr. Naylor, Hon. Secretary of the British Pharmaceutical Conference, intimating that the Conference would be pleased in future to receive delegates from the Society at the annual meetings of that body. It was decided to acknowledge the receipt of the letter and have the same recorded on the minutes.

Mr. RANKIN reported the result of the interview he had with the President and several members of the Council of the Pharmaceutical Society of Ireland, with reference to obtaining representation on that body. From the report it appeared that the Council were heartily in favour of receiving the representatives from the Society on the Council. After an interesting discussion on the matter it was felt to be of such an important character as to warrant a full discussion at the approaching annual meeting, which it was arranged should be held on February 3. It was further arranged that this meeting should assume a social character, and that members and their lady friends should be invited. A sub-committee was subsequently appointed to make the necessary arrangements.

A vote of congratulation was passed and ordered to be forwarded to the Lord Mayor of Belfast on the honour of knighthood which is about to be conferred upon him.

The meeting afterwards adjourned.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials or pseudonym. Replies will, in all cases, be referred to such initials or pseudonyms, and the registered number added in each instance should be quoted in any subsequent communication on the same subject.*

PETROLEUM EMULSION.—We do not know of any formula for "a petroleum emulsion containing 33 per cent. of phosphates." But is that really what you want? [*Reply to* A. M. W.—21/27.]

"VIAVI" TREATMENT.—We have no information on the subject you enquire about, and are therefore not able to express any opinion regarding it. [*Reply to* W. B.—21/30.]

PUBLIC HEALTH INSPECTORSHIPS.—Write to the Secretary of the Sanitary Institute, Parkes Museum, Margaret Street, London, W., for the information you require. [*Reply to* J. G. M. B.—21/29.]

COMPOSITION OF POWDER.—You say nothing whatever about the substance, and we cannot undertake the examination of unknown powders. [*Reply to* POWDER.—21/28.]

EXAMINATION RESULTS.—The statement you refer to has apparently been left unaltered since a previous examination. It would appear to be a case of pure inadvertence. [*Reply to* R. D.—164/4.]

INSTRUCTION AND OPTICS.—Mr. Lionel Laurance, 1, Vernon Place, London, W.C., holds classes for the purpose, and he is also announcing the commencement of a special postal course of instruction. [*Reply to* FORTIOR.—21/24.]

FLOWERS OF THE MONTH.—Shirley Hibberd's 'Field Flowers' (London: Groombridge, 4*s.*) and Grierson's 'Lessons from Fields and Lanes' (York: Bleasdale, 1*s.*) both deal with the British Flora, month by month. See also the notes on the botany of the months in the "Students' Page" of the *Pharmaceutical Journal*, commencing January 9, 1897. [*Reply to* T. T. COCKING.—21/23.]

MANUAL OF BOTANY.—The latest edition was published in 1897. We are not aware that the issue of a new edition is contemplated at present. Please note that we only undertake to reply to queries through the columns of the Journal. [*Reply to* E. H.—22/1.]

SUPPLYING DISPENSER.—We are informed that twenty to thirty shillings per week would be a fair charge, but that as much as two pounds is sometimes charged when a legally qualified man attends during the hours you mention. [*Reply to* O. A. C.—21/32.]

METHYLATED LINIMENTS.—The four liniments in the preparation of which methylated spirit may be employed must be made in accordance with the British Pharmacopœia now current, *i.e.*, the British Pharmacopœia, 1898. [*Reply to* W. G.—22/2.]

REMOVING MARKING INK STAIN.—Probably you have to do with something besides a silver stain. Try soaking first with a solution of chlorinated lime, then with dilute hydrochloric acid. After washing well with water, treat with ammonia and finally wash with water again. If this does not move the mark we fear the case is hopeless. [*Reply to* A. H. T.—21/11.]

PLATE POWDERS.—Non-mercurial: Jeweller's rouge, 1; precipitated chalk, 16; heavy magnesium carbonate, 3. Mercurial: Mercury, 1; precipitated chalk, 60. Rub the mercury with 2 of the chalk, as in making hyd. *c.* creta; when globules have disappeared rub in the rest of the chalk. [*Reply to* NERO.—21/25.]

WATERPROOFING CLOTH.—Dissolve curd soap, 8 ozs., in hot water, 1 gallon. Soak the article in this until thoroughly saturated. Lightly squeeze out and plunge into a boiling solution of alum, 8 ozs, in water, 1 gallon. Let it stay in this for thirty minutes, moving it about occasionally. Then rinse in tepid water, mangle, and dry. [*Reply to* A. H. T.—21/6.]

FLAVOUR OF FOOD.—The infant's food you send owes its flavour to the presence of a little powdered malt, and probably a little biscuit flour as well. The best way to render the starch in foods readily assimilable is to mix a little good powdered malt. In preparing these malted foods for use, they should not be stirred into boiling water, but first mixed with a little warm water before "cooking." [*Reply to* DIASTASE.—21/18.]

RAT POISON.—The poison which "dries up" the rats is doubtless an arsenical one. Arsenic has that property, but it is doubtful if, in the case of rats, it always and absolutely prevents any unpleasant odour. The following is a recipe for such a vermin killer:—White arsenic, 2; flour, 8; lard, 9; soot, 1; oil of anise sufficient to give a marked odour. Mix the soot with the arsenic, add the flour, then work in the lard. [*Reply to* WHAT IS IT.—21/7.]

DEVELOPING VELOX.—There is no better formula for developing Velox than that recommended by the makers:—Water, 1000 C.c.; metol, 16 Gm.; sodium sulphite (pure crystal), 50 Gm.; hydroquinone, 7 Gm.; sodium carbonate (exsic.), 46 Gm.; potassium bromide, 1 Gm. Dissolve in above order. The average exposure would be about six seconds to weak daylight, or about 60 seconds to gaslight at 12 inches. [*Reply to* OPTICS.—21/22.]

TONING BROMIDES.—What is called Bartolozzi red may be obtained by using the uranium and ferricyanide bath, the colour being due to the formation of silver ferrocyanide and uranium ferrocyanide, the latter being precipitated on the image. This salt is soluble in alkalies, and when washed in ordinary water containing earthy salts it goes into solution. If the print be washed in four or five changes of acidulated water, then just rinsed in plain water and dried, the colour will not be discharged. On the other hand, various tones approaching red may be obtained by bleaching the image in mercuric chloride, thoroughly washing, and then immersing in a 2 per cent. solution of sodium sulphantimoniate. The colour thus obtained is bright scarlet, but by making the latter solution more or less alkaline by adding ammonia the red becomes browner. [*Reply to* OPTICS.—21/22.]

INFORMATION WANTED.

CASSARITE.—An article bearing the name of "Cassarite" is made by a firm called Beardall and Metcalf. The address of the firm is required.—(J.A.—21/16.)

STAINS.—Particulars are wanted regarding the composition of Stirling's aniline gentian violet stain and Austin's fuchsine stain. Can any reader oblige?—(X. S.—21/17.)

POSOLOGICAL TABLE.—Where, and at what price, can a posological table be had, mounted on cloth, with rollers, and varnished? It should be very complete, giving doses of all new synthetic remedies and out-of-the-way articles, including old-fashioned drugs.—(TOXIC.—21/33.)

BONSON'S DIGESTIVE TEA.—Can any reader inform me of the address of the firm supplying this tea?—(J. H. S.—22/4.)

ADDITIONS TO INDEX.

Readers are requested to note that the following items have been inadvertently omitted from the index to the last volume of the Journal:—

Copaiba, The Official Tests for Gurjun Balsam in (Henderson), 645.

Gurjun Balsam, The Official Tests for, in Copaiba (Henderson), 645.

Henderson, H. J.—The Official Tests for Gurjun Balsam in Copaiba, 645.

A separate printed slip of the omissions can be obtained by applying promptly to the Editor, *Pharmaceutical Journal*, 17, Bloomsbury Square, London, W.C.

OBITUARY.

TILLIE.—The death is announced of Dr. Joseph Tillie, late of Edinburgh, who passed away on November 28, 1898, at East London, Cape Colony, at the early age of 38. Dr. Tillie was for some time University Assistant to Professor Fraser, of the Royal Infirmary, Edinburgh, and in this connection read papers before the Royal Society on "The Arrow Poison of the Wa Nyika and other Tribes of East Equatorial Africa," and on "Acokanthera Schimperi: Its Natural History, Chemistry, and Pharmacology" (see *P. J.* [4], i., 76). He also assisted Professor Fraser in his work on serpent's venom. Dr. Tillie did important work at Leipzig under Professor Boehm with reference to the pharmacology of curare and its alkaloids. He also contributed papers to the *Journal of Anatomy and Physiology* on "Curare and its Alkaloids," "Hæmoglobinuria in Blood Pressure Experiments," "An Arrow Poison from New Granada and Its Botanical Source," and "A Variety of Curare Acting as a Muscle Poison," and had several other researches in progress when his health failed. He was a well-known attender at the Pharmaceutical Society's evening meetings in Edinburgh, and in 1895 took part in a discussion on the then forthcoming revision of the British Pharmacopœia (*P.J.* [3], xxv., 900). In December, 1895, he left Edinburgh for South Africa, in the hope of conquering his disease, having contracted tuberculosis, as was believed, from some tuberculous rabbits which he had under observation in the laboratory.

MIDDLEMASS.—On January 2, George Robert Middlemass, Chemist and Druggist, late of Stockton-on-Tees. Aged 29.

CORDWIN.—On January 5, William Cordwin, Chemist and Druggist, Cinderford, Gloucestershire. Aged 64.

CONROY.—On January 6, at Battersea, Arthur John Conroy, Chemist and Druggist, of Newport (Mon.). Aged 29.

GLOYNE.—On January 6, at his residence, 105, Hagley Road, Birmingham, in his 49th year, William Beale Gloyne, for twenty-five years departmental manager for Southall Bros. and Barclay, Ltd., Birmingham.

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Citral. By the oxidation of geraniol ($C_{10}H_{18}O$) with bichromate and sulphuric acid an aldehyde geranial ($C_{10}H_{16}O$) is produced which has the same composition as that existing in lemon oil and in several other kinds of essential oil, to which the name citral has been applied. As a source of ionone this aldehyde has recently become of special interest, and Stiehl has put forward the view that though citral exists in lemon grass oil it is associated with two other aldehydes of the same composition, citriodor-aldehyde and allo-lemonal, which by condensation with acetone yield products that have the violet odour, but are not identical with ionone. The conclusions arrived at by Stiehl are disputed by Semmler, who has repeated the experiments by which Stiehl contends that citral is not identical with geranial but a mixture of three different aldehydes. In regard to the statement that the substance named citriodor-aldehyde differs from geranial in not forming a true sulphonic acid that is not decomposed by boiling caustic soda solution, Semmler now states that this can be effected by using excess of bisulphite solution, and he also states that the same β-naphto-cinchonic acid, melting at 200° C., is obtained from it and from geranial. In regard to Stiehl's statements that the substance he calls allo-lemonal is optically active and that its bisulphite compound is very unstable, Semmler states that by repeated treatment with bisulphite an oil is obtained identical with geranial, yielding a β-naphto-cinchonic acid melting at 200° C., and when sufficiently purified from admixtures it is optically inactive. He therefore concludes that citral is identical with the aldehyde obtained by oxidation of geraniol, and that the physical differences between the oils named citriodor-aldehyde and allo-lemonal are due to their impurity. Doebner (*Berichte*, **31**, 3195) also publishes results of his examination of the oils to which Stiehl gives the names of citriodor-aldehyde and allo-lemonal, and he affirms that they are nothing but impure citral, and that when purified they yield β-naphto-cinchonic acid having the normal melting point (*P.J.* [4], **7**, 261). In the same number of the *Berichte*, Tiemann publishes an elaborate history of the investigations connected with citral from 1888, the time of its first description and introduction into commerce by Schimmel and Co., down to last year, when Doebner pointed out the erroneous nature of the statements put forward by Fr. Fritzsche and Ziegler in the specification of the patent No. 26350 in the *Journ. für Prakt. Chem.*, **57**, 473, and in *Bull. Soc. Chim.*, **19**, **20**, 621.—*Berichte*, **31**, 3001.

Determination of Citral. Tiemann describes a derivative of citral obtained by condensation of citral with cyano-acetic acid ($C_3H_3NO_2$) as a readily crystallisable compound which is well adapted for the detection and determination of citral in essential oils. To prepare this compound a solution of cyano-acetic acid in three parts of water is mixed with two molecular proportions of caustic soda in the form of a 30 per cent. solution and one molecular proportion of citral is shaken with the alkaline liquid. When pure citral is used it dissolves completely and, on acidifying, the citraliden-cyano-acetic acid separates as an oil which at once becomes crystalline. After recrystallisation of the acid from warm benzene or a mixture of it with petroleum spirit, it is obtained in the form of yellow crystals which melt at 122° C. and have the composition $C_{13}H_{17}NO_2$. By shaking an essential oil containing citral with an alkaline solution of cyano-acetic acid, the citral may be completely separated from the other constituents, and, after shaking the alkaline liquid with ether, the citral condensation product may be obtained, almost quantitatively, by acidifying the alkaline liquid.—*Berichte*, **31**, 3329

Scale Extracts. A. B. Lyons recommends that vegetable extracts should be produced in scale form, thus making it possible to dry them thoroughly, either without heat or by the aid of a current of slightly-warmed air. It has been found practicable in most cases to prepare scale extracts four times the strength of the crude drug, and it is suggested that such a strength should be uniformly adopted, except in the case of extracts which it is customary to make of a definite alkaloidal strength. The method adopted is to prepare a highly-concentrated extract of the drug by the use of menstrua which reject as much inert matter as possible; powdered acacia is then added in sufficient quantity, and the thin extract spread on glass plates and dried. An obvious advantage of these scale extracts is that, by avoiding prolonged and excessive heating, they will be more likely than ordinary powdered extracts to retain unimpaired the full efficiency of the drugs they represent. They are also more attractive in appearance, more definite in strength, much less hygroscopic than the corresponding powdered extracts, and easily restored to the scale form if they cake, as they may be dissolved in a little warm water, spread on glass, and scaled again with but little trouble. They are of necessity homogeneous, and not liable to any material change from gain or loss of moisture. Finally, they are said to serve even better than ordinary solid extracts as excipients for pill masses, requiring only the addition of a very little water, glucose, or syrup to form a plastic pill mass.—*Pharm. Rev.*, **17**, 12.

Coumarin and Vanillin. W. H. Hess and A. B. Prescott state that it is a common practice to use Tonquin beans to some extent in the preparation of extract of vanilla, when a low-priced article is required. To detect the sophistication they have adopted a separation method which depends upon the aldehydic character of vanillin. Dry ammonia gas passed through a solution of vanillin in pure ether causes the precipitation of the aldehyde ammonia compound of vanillin, which is very soluble in water, so that by the addition of ammonia water to the ether solution all the vanillin present can be readily extracted. Coumarin, on the other hand, remains wholly in solution in ether. Dealing, therefore, with a commercial extract of vanilla, the alcohol should first be entirely evaporated and water gradually added so as to maintain the bulk of fluid. Lead acetate solution is next added, drop by drop, until no more precipitate forms, after which the solution is filtered through an asbestos funnel under pressure, and the precipitate washed with a little hot water. Extract the cooled filtrate by shaking out with ether (or chloroform), and shake the separated ether in turn with small quantities of dilute ammonia (1 in 3), until the ammonia solution is no longer coloured yellow. Wash the ether solution with a little water and add the wash water to the alkaline extract, which should then be rendered slightly acid with hydrochloric acid, shaken out with ether, the ether evaporated and the residue (vanillin) dried *in vacuo* over sulphuric acid. Finally, wash the vanillin repeatedly with boiling ligroin (a petroleum fraction boiling between 30° and 40° C.) to free it from adhering impurities, dry below 55° C., and weigh. The resulting pure crystalline product melts at 80° to 81° C. The original ether solution contains any coumarin present. Allow the ether

evaporate, dry the residue below 45° C., and treat it repeatedly with small quantities of cold ligroin until no residue is left on evaporating a drop of the liquid. Then evaporate the solvent, dry the residue (coumarin) under 45° C., and weigh. The pure crystalline coumarin so extracted should melt at 67° C.—*Pharm. Rev.*, **17**, 7.

Radium. P. Curie, Mme. Curie, and G. Brémont refer to the discovery of the supposed new metal—polonium—in pitch-blende (see *P. J.* [4], **7**, 117), and state that subsequent researches are in accord with the results first obtained, whilst concurrently with those they have met with a second substance, which is strongly radio-active and entirely differs from polonium, though resembling barium in its chemical properties. A line ($\lambda = 3814{\cdot}8$) has been found in the spectrum of this supposed new body, which does not appear to be due to any known element. The intensity of this line increases with the radio-activity, and the name "radium" is suggested for the supposed new element. Uranium, thorium, polonium, radium, and their compounds are said to render air a conductor of electricity, and to act photographically on sensitive plates. But while good impressions on the plates are obtained with polonium and radium in half a minute, it requires several hours to obtain the same result with uranium and thorium. The rays emitted by compounds of the two new bodies are also said to render barium platino-cyanide fluorescent.—*Comp. rend.*, **127**, 1215.

Chemical Substances and Fungus Spores. F. L. Stevens gives an account of the effect of various chemical substances, in aqueous solution upon the germination of fungus spores. As regards toxic action mercuric chloride is the strongest chemical; on the other hand potassium cyanide is remarkably weak in this respect. The results of the investigation in general are in accord with the theory of hydrolytic dissociation. Among poisonous ions are the cathions Hg, H, Cu; and the anions CN, CrO_4, Cr_2O_7 and OH. The halogen anions are not poisonous. Various fungi offer different resistance to poisons; the limits of resistance vary in the same species. Alcohol and sodium chloride have a stimulating effect on spores, *e.g.*, more spores grow in alcohol, and far more luxuriantly, than in water.—*Bot. Gazette*, **26**, 377.

Chloroform and Carbon Dioxide Assimilation. A. J. Ewart has conducted a series of experiments on *Elodea canadensis*, with a view of checking Claude Bernard's statement that chloroformed water-plants cease to evolve bubbles of oxygen in the light, but recover this power on the immediate removal of the chloroform. The results confirm this statement, and further show that a stoppage of carbon dioxide assimilation may be produced by uniformly distributed anæsthetisation, if properly graduated to the resistant powers of the plant employed. It is of interest to note that a plant suddenly saturated with an aqueous solution of chloroform in slight excess in the form of an emulsion becomes covered with gas bubbles if exposed to sunlight, and from the cut end of the stem bubbles derived from carbon dioxide assimilation continue to escape actively for five minutes; they then slow and cease within five minutes. The chloroform appears at first to exercise a physical action favouring the formation of gas, and the heating effects of the sun's rays may also aid in causing an evolution of bubbles after the plant has been fatally injured; for after a five minutes' immersion the plants lose the power of recovery and rapidly die in fresh water. By using more dilute solutions and longer periods of exposure it is possible to cause a cessation of carbon dioxide assimilation without the power of recovery being lost.—*Annals of Botany*, **12**, 415.

Gogo Root. This drug, derived from the Philippines, occurs in pieces from two to three feet long, and two inches across, and is produced by *Entada scandens*, a leguminous plant. The seeds contain 7 per cent. of fat and cause vomiting. No alkaloid or glucoside has been found in the root, except about 1·5 per cent. of saponin, to which the observed emetic action is no doubt due.—*Pharm. Post*, **31**, 559.

Strophanthin in Nerium Oleander. Dubigadoux and Durieu have isolated a glucoside from the milky juice of the Algerian oleander, which they state to be identical in chemical and physiological reaction with strophanthin. The oleander and strophanthus plants both belong to the natural order Apocynaceæ.—*Journ. Pharm. Chem.* [6], **8**, 433.

Penicillium in Syrups. A. Kraus has established the fact that the fungus which frequently appears in syrups is usually *Penicillium glaucum*. Freshly prepared simple syrup which was without action on Fehling's solution, after being kept for some weeks, showed a considerable development of fungoid growth, and then had a markedly reducing action on that reagent. Syrup of senega keeps better than the other pharmaceutical syrups on account of the trace of salicylic acid which it contains, derived from the saponification of the methyl salicylate which naturally occurs in senega root.—*Pharm. Cent.*, **39**, 737, after *Chem. Repert.*

Cactus Alkaloids. A. Heffter, continuing his researches on the cactus alkaloids, gives the following particulars of the alkaloids hitherto obtained by him. Pellotine, $C_{13}H_{19}NO_3$, exists to the extent of 0 89 per cent. in *Anhalonium williamsi*; it crystallises from alcohol in compact tablets, which melt at 110° C. It is soluble in alcohol, acetone, and chloroform. When dissolved in concentrated sulphuric acid, it gives, with a drop of nitric acid, an intense cameleon red colour. Anhaline, $C_{10}H_{17}NO$, is obtained from *Anhalonium fissuratum*. It crystallises in prisms, melting at 115° C. The solution in strong sulphuric acid gives a green colour with nitric acid. Mezcaline, $C_{14}H_{17}NO_3$, obtained from *Anhalonium lewinii*, crystallises in small white needles, melting between 150° and 160° C. It is very soluble in water, and sparingly so in ether. It is to this alkaloid that the physiological action of mescal buttons is due. Anhalonidine, $C_{12}H_{15}NO_3$, from the same plant, crystallises in small octohedra, melting between 150° and 154°. It is soluble in water, and the aqueous solution is strongly alkaline, precipitating metallic salts from solution. Anhalonine, $C_{12}H_{15}NO_3$, is isomeric with anhalonidine. It is less soluble in water and melts at 85·5 C. Lophophorine, $C_{13}H_{17}NO_3$, also from *Anhalonium lewinii*, occurs as an amorphous colourless base, which gives a crystalline hydrochloride.—*Journ. Pharm. Chem.* [6], **8**, 519.

Formation of Albumin. Herr W. Zaleski has determined that in the germination of the bulbs of *Allium cepa* the production of proteids in the dark cannot be due entirely to asparagin and glutamin. During germination the proportion of proteid substances in the bulb increases from about 32 to 52 5 per cent. Their formation is, however, dependent on certain conditions, especially on the presence of considerable quantities of carbohydrates. The bulbs contain a much smaller proportion of reserve proteids than do the seeds. It is only at a late period of germination that the proportion of proteids begins to decrease. The amount of asparagin remains constant during germination.—*Ber. Deutsch. Bot. Gesell.*, 1898, p. 147.

WEST INDIAN SANDAL WOOD OIL.

BY E. M. HOLMES, F.L.S.,

Curator of the Museums of the Pharmaceutical Society of Great Britain.

When, some few years since, oil of sandalwood came into use as a medicine, my attention was directed to the difference in character and specific gravity of the oils met with in commerce, and experiments, made at my request by Mr. (now Dr.) W. H. Ince,* showed that the so-called West Indian oil had a lower specific gravity than that of authentic specimens of East Indian sandalwood oil derived from *Santalum album*. As no species of *Santalum* is known to occur either in the West Indies or South America, the source of the West Indian oil could obviously not be a plant of that genus.

Some light was thrown upon the source of the oil by Messrs. Schimmel and Co., of Leipsic, who, in reply to my inquiries, kindly placed at my disposal, with their usual liberality, such information as they could furnish concerning the oil, accompanying it with specimens of the oil and of the wood from which it was distilled. They stated that the wood came from Puerto Cabello, in Venezuela. Consequently I wrote to Mr. R. Conn, then British Vice-Consul at Puerto Cabello, who sent me specimens of the leafy twigs of the plant, neither flowers nor fruit being at that time obtainable. The character of the leaves indicated that the plant belonged to the Rutaceæ, but I was unable to match them at either of our national herbaria. At my request Mr. W. Kirkby examined the structure of the wood (*P. J.* [3], xvi., p. 857), and came to the conclusion that the structure was totally different to that of any *Santalum* he had examined. After an examination of the leaves of the plant, Mr. Kirkby confirmed the conclusion I had already arrived at from the macroscopical characters of the leaves, that the plant belonged to the Rutaceæ, with which natural order he found the microscopical characters to agree (*P. J.* [3], xvi., p. 1065). The wood was also examined by Mr. A. Petersen (*P. J.* [3], xvi., p. 757), who came to the conclusion that the wood could not belong to the Santalaceæ, although he did not suggest any other natural order as its botanical source.

From that date (1886) until last year I have been unable to obtain flowers and fruits of the plant. During last year Messrs. Schimmel and Co. kindly forwarded two or three fruits of the plant, one of which was forwarded to the Cambridge Botanic Gardens.* An examination of the others proved that the plant must be referred to a new genus, the fruit being one-celled and one-seeded, and no pinnate-leaved genus of Rutaceæ having a fruit of that character being known. During the present month I have received, through the kindness of the same firm, specimens of the flowering twigs of the tree, so that it is now possible to describe it. In recognition of the trouble that this firm have taken to procure specimens of the plant in order to clear up its botanical source, I have named the genus, and given a description of it, as follows :—

FIG. 1.—SCHIMMELIA OLEIFERA.—Terminal inflorescence, ½ nat. size. *a*. Flowering twig (natural size) showing mode of branching.

Schimmelia, nov. gen. :—Arbores fruticesve ; *folia* imparipinnata ; *flores* hermaphroditæ, in cymis terminalibus dispositis ; *calyx* minutus, 4-partitus ; *petala* 4, membranacea, punctata, imbricata ; *torus* crassus erectus ; *stamina* 8, tori basi inserta, 4 petalis alterna longiora, filamentis filiformibus, antheris innatis ; *ovarium* 1-loculare, hirsutum, stigmati sessili, ovulis duobus, ovarii apice suss pensa ; *fructus* capsularis ovoideus ; *semen* unum exalbuminosum.

Judging from the size of the wood met with in commerce, which I have never seen more than six inches in diameter, the plant must be either a small tree or a large shrub. The fruit in size and shape resembles the fruit of *Laurus nobilis*, but I am not sure that the specimens I received were fully grown, since the solitary seed refused to germinate. Although there are two ovules, only one appears to become developed into a seed. The genus is nearly allied to *Megastigma* in the divisions of the flower and in the pinnate leaves, but differs in the simple ovary and the sessile undivided stigma and in the much larger glabrous leaves. The species may be thus described :—

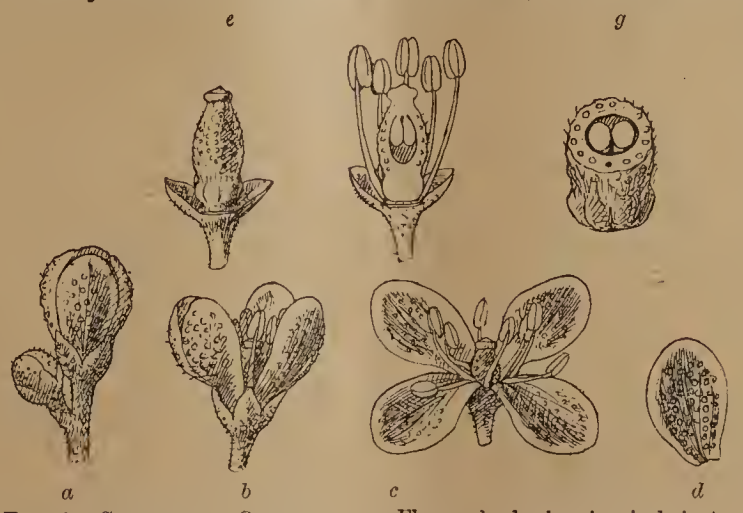

FIG. 2.—SCHIMMELIA OLEIFERA.—*a*. Flower buds showing imbricate petals. *b*. Showing calyx. *c*. Corolla. *d*. Concave petal showing oil glands. *e*. Ovary, torus and stigma. *f*. Section of flower showing position of the two ovules and unequal stamens. *g*. Tranverse section of ovary. All magnified.

Schimmelia oleifera, n. sp, *Ramis* lignosis erecto-patentibus ; *foliis* alternis suboppositisve, imparipinnatis ; *foliolis* oppositis, breviter petiolulatis (5 Mm.), 2-3 jugis, ovatis, acuminatis apice obtusis, coriaceis, glanduloso-punctatis, long. 1½-2½ Dm., latis 2-3 Cm., glabris, superne nitidis ; *floribus* in cymis subtrichotomis paniculatis terminalibus dispositis, bracteolis minutis, ovatis, acutis, longis 1-3 Mm. instructis ; pedicellis tenuibus divaricatis, ultimis recurvis ; *calyce* minuto 4-partito, segmentis ovatis ; *petalis* quatuor albis (?) membranaceis, ovalibus concavis glanduloso-punctatis ; staminibus octo inæqualibus, quatuor brevioribus, filamentis glabris, antheris ovatis innatis ;

* *Pharmaceutical Journal* [3], xvi., p. 821-822.

* The Curator, Mr. R. J. Lynch, states that the seed did not germinate.

ovario hirsuto integro 1-loculari, ovato, toro crasso sedente, stigmate obtuse-conico sessili, ovulis duobus ovarii apice suspensis ; *fructu* capsulari, ovali ; *semine* uno, exalbuminoso.

The leaves on the branches have usually three pairs of leaflets,

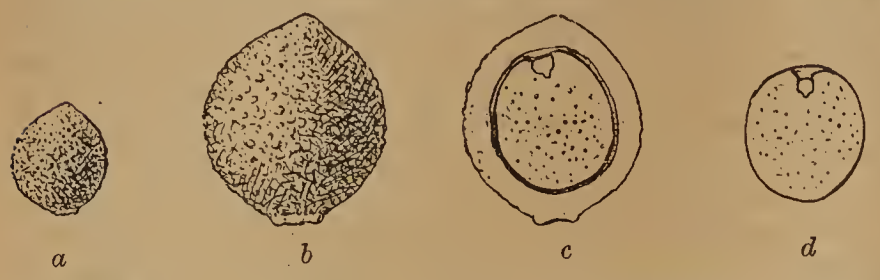

FIG. 3.—SCHIMMELIA OLEIFERA.—*a*. Fruit (nat. size). *b*. Magnified to show oil glands. *c*. Longitudinal section of fruit showing position of radicle. *d*. Cotyledon showing oil glands.

the terminal one having a longer petiolule and being rather larger than the lateral leaflets. The under surface of the leaves is dull, but the upper shining. The leaves and twigs are not visibly

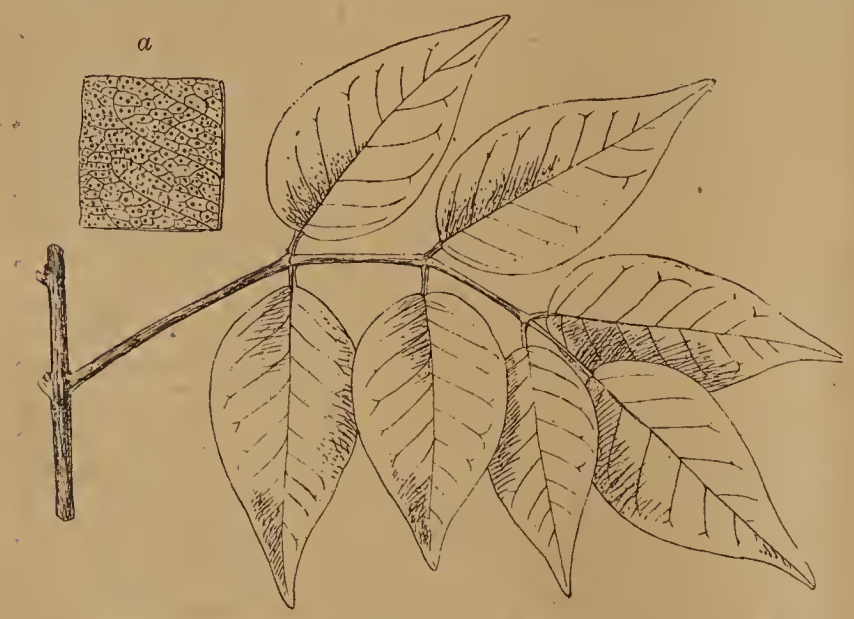

FIG. 4.—SCHIMMELIA OLEIFERA.—Leaf (½ nat. size). *a*. Portion of leaf showing oil glands

hairy as seen under a lens. The inflorescence is furnished with smaller leaves which have usually only two pairs of smaller leaflets. The whole of the inflorescence is covered with minute simple hairs. The petals in the dried state have the dull yellowish tint generally assumed by white flowers when dried.

It may be remarked that although the leaves and inflorescence approach those of *Zanthoxyleæ* in character, it differs from that group in not having polygamous flowers, nor a separable endocarp, and in the one-celled ovary. In the shape of the ovary, the hermaphrodite flowers, and exalbuminous seeds, it approaches the *Aurantieæ*, but differs in the dry one-celled pericarp and solitary seed, but it will probably find a place in the latter tube.

The occurrence of a new genus in Venezuela and of new species of *Pilocarpus* in Pernambuco and of the *Andira aroba* in Bahia indicate that the north-eastern part of South America should well repay botanical exploration, even if only in relation to medicinal plants.

EURESOL.—Euresol is resorcine monacetate. It occurs in a thick honey paste-like, with an agreeable odour. It is available for all the purposes to which resorcine is applied, and from its oily consistence is specially useful for application to those parts of the skin that are covered with hair, particularly when dissolved in acetone.—*Rev. Med. Pharm. V.*, 292.

FORMULÆ, METHODS, AND REACTIONS,

KNOWN BY THE NAMES OF THEIR AUTHORS.

(Supplementary List.)*

Darton (GOLD).—Ore supposed to contain gold is reduced to fine powder and well shaken in a test-tube with an aqueous solution of iodine (iodine, 1 ; potassium iodide, 1·5 ; water, 36). Dip a strip of filtering paper into the solution, dry and heat on platinum foil to redness. After cooling, the paper should assume a purple colour if gold be present.

Davy (ALCOHOL).—Dissolve molybdic acid, 1, in strong sulphuric acid, 10. The solution gives a blue colour on warming with any fluid containing alcohol. Detects 1 of alcohol in 1000 of water. Essential oils should be shaken with water and separated before applying this test ; urine must be distilled.

Davy (ARSENIC).—The diluted sulphuric acid in Marsh's test is replaced by an amalgam of mercury and sodium.

Davy (MANGANESE).—1. A green colour is produced on heating manganese to redness on silver foil with a few drops of potash solution. 2. A white precipitate is formed on heating manganese to redness on platinum foil with sulphur, dissolving the residue in water and adding iron ferrocyanide.

Davy (PHENOL).—Dissolve molybdic acid, 1, in strong sulphuric acid, 10, and add 3 or 4 drops to 1 or 2 drops of the suspected liquid. In the presence of phenol a dark olive-green to blue and violet colour is produced.

Davy (STRYCHNINE).—A deep violet colour is produced on treating strychnine with sulphuric acid and adding powdered potassium ferricyanide.

Debrunner (NITROBENZOL). — When present in alcoholic beverages nitrobenzol can be detected by taking up with ether, separating, and adding a few drops of dilute acetic acid, a little very fine iron filings, and sufficient water. When the oil drops have disappeared, decant, treat with soda, take up with ether, evaporate, and add a few drops of hydrochloric acid, with a little potassium chlorate. A blue to green colour indicates the presence of nitrobenzol.

Debrunner (WATER IN ALCOHOL).—A purple coloration when potassium permanganate is added to alcohol indicates the presence of water, as the compound is insoluble in absolute alcohol.

Deen, Van (BLOOD).—A blue colour is produced on adding a few drops of a freshly prepared tincture of guaiacum and ozonised turpentine oil to a very dilute (almost colourless) liquid containing blood.

Degener (INDICATOR). — Phenacetolin, a brown substance obtained by heating together for several hours one equivalent each of phenol, sulphuric acid, and glacial acetic acid, is turned red by alkalies.

Delffs (ALKALOIDS).—Potassium platino-cyanide forms salts with alkaloids. See Mayer's reagent.

Delffs (CAFFEINE).—A crystalline precipitate is thrown down on adding a solution of mercuric oxide in potassium iodide to a solution of caffeine. Other alkaloids yield amorphous precipitates.

Deniges (URIC ACID).—The uric acid is converted into alloxan by careful treatment with nitric acid. After evaporating off the excess of acid a few drops of sulphuric acid and of benzene containing thiophene are added, when a blue colour will be developed by the alloxan.

Desbassins (NITRIC ACID).—See Richmont's test.

Devoto (PEPTONE).—All other albuminoids are precipitated by the addition of crystalline ammonium sulphate ; peptone is

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* After Wilder, r, Altschul, etc. Continued from page 10.

detected in the filtrate by the biuret reaction. According to Bogomolow and Wassilieff, peptone may also be detected in this filtrate by Roch's reagent (salicylsulphonic acid) or by means of resorcin and trichloracetic acid.

Diesel (Olive Oil).—Colour reactions occur on adding nitric acid to olive oil.

Dieterich (ALOES).—A solution of the substance is evaporated to dryness with a few drops of nitric acid, 1·4, and the residue taken up with one drop of alcohol; on adding an alcoholic solution of potassium cyanide, a pink coloration is given by aloes.

Dieterich (DISTINCTION OF CATECHUS).—When Gambier catechu 3 Gm. is treated with normal potash solution, 5 C.c., and water 100 C.c., and the solution is shaken out with benzene, 50 C.c, the separated benzene layer is coloured intense green. Pegu catechu does not give this reaction.

Dodge and Olcott (COPAIBA BALSAM).—Add 4 drops of the oleoresin to glacial acetic acid ½ fl. oz., then add 6 drops of strong nitric acid. The mixture remains colourless if the oleoresin is pure.

Dogiel (METHYLENE BLUE STAINING METHOD).—Place objects (pieces of retina, etc.) to be stained in a few drops of aqueous or vitreous humour, to which add 2 or 3 drops of 0·06 p. c. solution of methylene blue in physiological salt solution, and expose to air. The stain takes effect in 5 or 10 minutes, and attains its maximum in 15 to 20 minutes, though thicker specimens may require several hours. The reaction may be hastened by placing the preparations in a stove kept at 30° to 35° C.

Donath (CHROMIC ACID).—In the presence of a bichromate, free chromic acid may be detected by the violet colour imparted to carbon bisulphide, added after shaking the solution with potassium iodide solution.

Donath (FREE ACID).—A violet colour is imparted to carbon bisulphide on adding a few cubic centimetres to a liquid containing free acid, after the addition of a little potassium iodide and bichromate.

Donath (POTASSIUM BICHROMATE).—A brown cloudiness or precipitate is produced on bringing a solution of sodium hyposulphite to boiling point and adding an equal volume of the previously heated liquid containing potassium bichromate in the presence of chromate.

Donath (POTASSIUM CHROMATE).—A heavy blackish-brown precipitate is thrown down on boiling a liquid containing potassium chromate in the presence of bichromate and adding a drop of manganese sulphate solution.

Donath (RESIN IN WAX).—Eighty centigrammes of the sample, and for comparison the same quantity of pure wax, are each boiled with 10 C.c. of concentrated nitric acid, until no more red fumes are evolved. The mixtures are cooled, saturated with ammonia, and filtered; or, heat the wax with 4 or 5 times as much nitric acid (s. g. 1·33) to boiling for one minute, then add an equal volume of cold water and an excess of ammonia. In the case of pure wax the filtrate will be pure yellow, while a sample containing resin will be blood red or reddish-brown. The addition of 1 per cent. of resin may be detected by this test.

Donath (SULPHURIC ACID).—The carbon bisulphide is coloured violet, on boiling vinegar containing sulphuric acid with lead chromate, then filtering and proceeding as in Donath's test for free acids.

Donath (TARRY MATTER).—Ammonia containing tarry matter on being supersaturated with sulphuric acid reduces a solution of potassium permanganate.

Donath-Mayrhofer (GLYCERIN).—When glycerin is present in a liquid a carmine colour is produced on evaporating to dryness, heating carefully to 120° C. with two drops of phenol and sulphuric acid, extracting with water and adding ammonia to the residue.

Dragendorff (ALKALOIDAL REAGENT).—As modified by Krant, this is obtained by dissolving bismuth subnitrate, 80 Gm., in pure nitric acid, 200 C.c., and adding it slowly to potassium iodide, 277 Gm., dissolved in a little water. The mixture is quickly cooled and filtered off from the crystals of potassium nitrate which form, and made up to 1 litre with distilled water. It should be kept in the dark.

Dragendorff (BENZINE: BENZOL).—Benzol is distinguished from benzine by forming nitrobenzol when acted upon by fuming nitric acid.

Dragendorff (BRUCINE).—A red to brownish-orange colour is produced on dissolving brucine in 10 p. c. of sulphuric acid and adding a small quantity of a very dilute solution of potassium bichromate.

Dragendorff (NARCEINE).—A blue coloration is produced with zinc potassio-iodide.

Dragendorff (NITROBENZOL).—On adding to 10 drops of essential oil of almonds 4 drops of alcohol and a trace of sodium, it becomes deep brown and viscid if nitrobenzol be present.

Dragendorff (PHENOL IN URINE).—The phenol is extracted by means of mineral naphtha and tested as usual.

Dragendorff (SOLANINE).—A firm jelly is formed on dissolving solanine in hot amylic alcohol.

Dragendorff (STRYCHNINE).—A red to reddish-brown colour is given with iodic acid.

Dragendorff (TURPENTINE).—Essential oils containing turpentine become turbid on the addition of alcohol.

Draper (CASTOR OIL).—An essential oil supposed to be mixed with castor oil is evaporated to a small bulk in a porcelain capsule treated with one-fourth its original bulk of nitric acid, subsequently the acid solution is neutralised with sodium carbonate solution by heating to boiling. When castor oil is present an odour like that of œnanthol is evolved.

Drechsel (BILIARY MATTER).—A red to reddish-brown colour is produced on adding to the concentrated liquid syrupy phosphoric acid and a little cane sugar, and heating on a water bath. See Pettenkofer's reaction.

Drechsler (ALCOHOL).—Add 3 drops of a test solution containing 1 part of potassium bichromate in 10 parts of nitric acid (s. g. 1·30) to 5 drops of the essential oil supposed to contain alcohol, and note the change in colour.

Dryer (TIN).—A purple coloration is produced on adding to a liquid containing tin a few drops of a solution prepared by dissolving 0·1 Gm. of brucine in 1 C.c. of nitric acid, and adding 50 C.c. of water, then heating to boiling point and cooling.

Dudley (GALLIC ACID).—A reddish colour, changing to green, is produced on adding a solution of ammonium picrate to gallic acid.

Duflos (PICROTOXIN).—A green colour is produced on adding a solution of potassium bichromate to picrotoxin.

Dumont-Pallier (BILE PIGMENTS).—This is Smith's modification of Marechall's test.

Dunstan and Ransom (ALKALOIDS IN BELLADONNA EXTRACT).—Take about 2 Gm. of extract, dissolve in water acidulated with hydrochloric acid by the aid of gentle heat; filter, wash with dilute hydrochloric acid until no alkaloidal reaction is given by the filtrate. Make the filtrate alkaline with AmHO, wash out twice with chloroform, shake out twice with acidulated water, again make alkaline, and remove the alkaloid with two successive washings of chloroform, then evaporate the solvent, and dry at 100° C.

Dunstan and Short (NUX VOMICA ASSAY).—Take 5 Gm. of crushed nux vomica seeds and extract by continuous percolation with 30 C.c. chloroform + 10 C.c. strong alcohol. Wash out twice with 25 C.c. of dilute sulphuric acid. Make alkaline with ammonia solution and wash out alkaloids with chloroform, then evaporate to dryness at 100° C. and weigh the residue.

Dunstan and Short (SEPARATION OF STRYCHNINE FROM BRUCINE).—Dissolve 0 20 Gm. or less of the mixed alkaloids of nux vomica in 10 C.c. of dilute sulphuric acid (5 p. c.), dilute the solution to 175 C.c. with water, then make up to 200 C.c. with potassium ferrocyanide solution (5 p. c.). The liquid is allowed to stand 6 hours with occasional stirring, the precipitate collected, washed with water acidulated with sulphuric acid (0·25 p. c.) until washings are free from bitterness. The precipitate is then decomposed with strong ammonia, the filter washed with the liquid, and finally with chloroform, the ammoniacal solution being extracted with chloroform, and the solvent carefully evaporated in a tared flask, dried, and weighed, when dry, as strychnine.

Dupré (FOREIGN COLOURING MATTERS IN WINE).—A 10 p. c. jelly of colourless gelatin is cut into cubes and allowed to stand in the wine for 24 hours. On removal the cube is cut in half. Natural wine colours only penetrate a short distance into the cube. Foreign colours dye it throughout the greater part.

Dwar (CINCHONA ALKALOIDS).—On dissolving the alkaloids in alcohol, and adding one drop of diluted sulphuric acid, followed by tincture of iodine, added drop by drop, iodosulphates of the alkaloids are precipitated, and are distinguishable from one another by their difference in appearance.

PERCENTAGE SOLUTIONS.

BY G. E. BROWN.

The question of weights and measures is unfortunately one which is always proving harassing to photographers, and probably always will till the metric system drives out our own bad British systemless "system." Confusion is often caused by the use of the term "per cent." or the symbol "%" in several different ways. Suppose we have a solution of, say, potassium carbonate in water, and we wish to express the relative proportion of water to solvent, we naturally select some standard which we can also apply to other solutions. That is the object of the percentage system, whether units of volume or weight are used. It is in the careless use of these units that confusion is introduced, for we can make use of either (or both) weight or volume. We can say that 100 parts by weight of the solution (100 grammes, let us suppose) contain 50 parts by weight (50 grammes) of potassium carbonate. This is what most technical and purely scientific text-books would call a 50 per cent. solution. The units both of solvent and solute are those of weight. Now the specific gravity of this particular strength of potassium carbonate solution is 1·551. Hence 100 grammes will occupy a volume—

$$= \frac{100}{1{\cdot}544} = 64{\cdot}8 \text{ C.c.}$$

Since weight = volume and density.

This means that 64·8 C.c. of the solution contain 50 grammes or (by simple calculation) 100 C.c. contain 77·2 grammes. The difference between the two modes of expressing the same thing will be apparent if we place the results side by side.

Potassium Carbonate Solution.

Sp. gr.	Grammes per 100 grammes.	Grammes per 100 C.c.
1·544	50·0 grammes.	77·2.

Photographers will always prefer measuring solutions to weighing them, and therefore the second mode of expression is that which they will wish to adopt. Unfortunately, the photographic formularist has got to call this second solution a "percentage" solution. Etymologically it is, but as a matter of fact the units of weight are generally understood to be used in an expression of strength in "percentage." I have treated this point at some length because I wish to allude to some suggestions which have been published in a German contemporary with regard to the adoption of a symbol which shall point out what mode of expression is being used.

Dr. O. Everhard suggests—

p/00 for percentage by weight.
v/00 ,, ,, volume.

Thus, a potassium carbonate solution of sp. gr. 1·544 would be written as "50 *p*/00," whilst a photographer's so-called "ten per cent. ammonia" would be dilute "ammonia (·880)," 10 *v*/00. We still require, however, a symbol for the mixed relation of weight* per volume (or of volume per weight), and for this I would suggest that Dr. Everhard's symbols be amplified as follows:—

Percentage weight per weight ..... *p'p*00.
Percentage volume per volume ..... *v/v*00.
Percentage weight per volume ..... *p/v*00.
Percentage volume per weight ..... *v/p*00.

Thus, to revert once more to our potash carbonate solution, it might be written either as "50 *p/p*00," or as "77·2 *p/v*00," and in each case the reader would be under no doubt as to what was meant. This system of nomenclature is, of course, applicable to any system of weights and measures having a simple relation between its units of weight and volume.—*British Journal of Photography.*

SELECTED PRACTICAL FORMULÆ.

MIXTURE FOR BLEACHING THE HANDS.

Hydrous wool fat, 30; glycerin, 20; borax, 10; eucalyptol, 2; oil of bitter almonds, 1. Mix thoroughly. On retiring rub the hands thoroughly and protect by wearing gloves.—*Quar. Therap. Rev.*, 16, 30, after *Southern Journal of Pharm. and Mat. Med.*

TO DESTROY CHARLOCK.

A German agricultural paper states that *Brassica arvensis* may be destroyed by spraying the infested crop with 15 per cent. solution of ferrous sulphate. This will not harm cereal crops but will effectually eradicate the troublesome crucifer.—*Pharm. Centrahalle*, 39, 631.

PREPARATION OF ZINC VALERIANATE.

D. Vitali prepares crystalline zinc valerianate thus: Sodium valerianate, 100, and zinc sulphate, 117·4, are dissolved separately by the aid of heat in the smallest possible volume of water and then mixed. The mixture is evaporated to dryness on the water bath below 70° C., the residue powdered, and extracted at 70° C. with alcohol (95 per cent.). On evaporation, zinc valerianate crystallises out.—*Répert.* [3], 10, 270, after *Giorn. di farm. de Trieste.*

FORMULÆ FOR FLASH-LIGHT POWDER.

(1) Magnesium powder, 4; potass. permanganate, 4; barium peroxide, 2. (2) Aluminium powder, 5; sulphide of antimony, 1; potass. nitrate, 2; potass. chlorate, 12. (3) Potass. chlorate, 5; potass. ferrocyanide, 0·5; sugar, 0·32; aluminium powder, 60.—*Apoth. Zeit.*

*There hardly appears to be any necessity for special distinctive symbols in any other case than where a mixed relation of weight and volume exists. The term "per cent." with its abbreviation "p.c." and symbol "%" should be limited in use so as to express true percentages only, whether of "weight per weight" or "volume per volume." The so-called "percentage weight per volume" might then be expressed as "p.c. *w/v*" and the equally nondescript "percentage volume per weight" could be indicated as "p.c. *v/w*." [ED. *P.J.*].

PHARMACEUTICAL SOCIETY.

DONATIONS TO THE LIBRARY AND MUSEUM.

At a meeting of the Library, Museum, School and House Committee, on Wednesday, January 18, the Librarian and Curator presented the following reports of donations :—

To the Library (London).

Royal Medical and Chirurgical Society, London :—Medico-Chirurgical Transactions, vol. 81.

Geological Survey of Canada :—Annual Report, 1896.

University of Toronto :—Studies, biological series, No. 1.

Surgeon-General, U.S. Army :—Index-Catalogue of Library, 2nd series, vol. 3.

St. Bartholomew's Hospital, London :—Statistical Tablos of Patients during 1897.

Mr. F. M. Bailey, F.L.S., Colonial Botanist, Queensland :—Three pamphlets on the Floras of Queensland and New Guinea.

Mr. T. H. W. Idris, London :—Notes on Essential Oils, 1898.

Smithsonian Institution, Washington :—Five Reprints from the Annual Report for 1896.

M. Maurice Duyk, Bruxelles :—Four Pamphlets.

To the Library (Edinburgh).

Pharmaceutical Society of Ireland :—Calendar, 1898.

School of Medicine, Edinburgh :—Calendar, 1898-9.

Mr. T. H. W. Idris, London :—Notes on Essential Oils, 1898.

To the Museum (London).

Mr. J. H. Hart, F.L.S., Botanic Gardens, Trinidad :—Seeds of *Omphalea megacarpa* and *Hevea lutea*.

Mrs. M. M. P. Rudduck, Morocco :—24 specimens of Morocco drugs.

To the Herbarium.

Messrs. Schimmel and Co., Leipsic—Specimens of the "West Indian Sandalwood" plant.

EVENING MEETING IN EDINBURGH.

The third meeting of the session was held in the Society's Hall, 36, York Place, Edinburgh, on Wednesday, January 18, when Mr. LAIDLAW EWING took the chair. The minutes of the previous meeting having been read and approved, Mr. D. B. DOTT communicated a paper on

The Assay of Eucalyptus Oil.

The value of eucalyptus oil is generally assumed to depend on the eucalyptol which it contains, though it is improbable that the assumption is wholly correct. Turpentine and terebene have been successfuly employed for at least some of the purposes for which eucalyptus oil is used, so that it may reasonably be supposed that the terpenes of the oil have at least some value. Be that as it may, the Pharmacopœia has quite properly decided that the oil must contain a considerable percentage of eucalyptol, as indicated by the phosphoric acid test. The Pharmacopœia does not fix a definite percentage, but it is often required to know the amount present in oil of eucalyptus and in commercial eucalyptol. The determination is generally made by converting the eucalyptol into phosphate by treatment with syrupy phosphoric acid, and the following notes have reference to that method :—

1. EUCALYPTUS OIL.—Sample assay by mixing the oil with phosphoric acid of 1·75 s.g., pressing the magma till it ceased to yield anything to blotting paper; decomposing the phosphate with water, and weighing the separated eucalyptol :—

4	Gm. with	2	Gm. acid gave	.....	35·1	per cent.
4	,,	3	,,	,, ...	48 2	,,
4	,,	4	,,	,, ...	46 0	,,

the loss in washing with water amounted to 1·5 per cent. When washed with sodium carbonate solution the loss was 32·5 per cent.

2. EUCALYPTOL.—5 Gm. with 5 Gm. acid gave 4·25 Gm. phosphate (equals 51·8 per cent. eucalyptol by calculation). The acid washings titrated by standard soda indicated 50·4 per cent.

The separated eucalyptol was washed twice with warm water and lost thereby 3 per cent.

3. EUCALYPTUS OIL.—10 Gm. with 8 Gm. acid gave 8·19 Gm. phosphate (equals 50 per cent. of eucalyptol by calculation). The phosphate was decomposed by being well shaken with 30 C.c. cold water, gave 52·2 per cent. eucalyptol. Twice washed with 10 C.c. water at 120° F. lost 4·4 per cent.

4. EUCALYPTOL.—10 Gm. with 8 Gm. acid gave 12 Gm. phosphate (equals 73·3 per cent. eucalyptol by calculation). Decomposed by water gave 70·0 per cent.

5. EUCALYPTUS OIL.—10 Gm. with 10 Gm. acid gave 9·8 Gm. phosphate (equals 55·9 per cent. eucalyptol by calculation). Decomposed by water gave 55·5 per cent.

6. EUCALYPTOL.—(*a*) 10 Gm. with 8 Gm. acid gave 7·73 phosphate (equals 4·72 Gm. by calculation). Decomposed by cold water gave 4·54 Gm. Washed with successive quantities of warm water became 4·40, 4·25, 4·13 Gm. (*b*) 10 Gm. of same sample with 12 Gm. acid gave 7·12 Gm. (equals 4·35 Gm. eucalyptol by calculation). Decomposed by cold water gave 4·02 Gm. Washed thrice with warm water was reduced to 3·78.

7. EUCALYPTOL, prepared by treating the commercial compound with phosphoric acid, pressing thoroughly and decomposing with hot water. Ten Gm. with 10 Gm. acid gave 15·45 Gm. phosphate (equals 94·4 per cent. eucalyptol by calculation). This was shaken with 60 C.c. warm warm, separated and again shaken with 10 C.c. water, to thoroughly remove the acid. The eucalyptol weighed 8·52 Gm. The acid indicated by titration with soda 92·25 per cent. It is evidently practicable to prepare a "eucalyptol" richer in cineol than is usually found in the commercial article. These experiments make no pretensions to absolute accuracy, being obtained in the ordinary course of testing, yet they may be of value as indicating possible sources of error, and some of the precautions required to ensure an accurate result. The eucalyptol may be determined (1) by weighing the thoroughly pressed cake of phosphate, (2) by decomposing the phosphate with water, and weighing the eucalyptol, (3) by titrating the acid solution and calculating the equivalent in eucalyptol, on the basis that one molecule of phosphoric acid equals one of eucalyptol. To ensure that the eucalyptol phosphate is free from terpenes and unconfined acid, it is necessary to press the mass repeatedly in folds of blotting paper. This process occupies some time, and as the phosphate is hygroscopic there is some risk of water being absorbed and so causing error. On theoretical grounds one is inclined to favour the idea of separating the eucalyptol and weighing it, but in practice that plan is found quite open to error. When the phosphate is merely decomposed by contact with cold water the supernatant eucalyptol is apt to contain a considerable amount of phosphate in solution, and so indicate an excessive result. On the other hand, when decomposed by hot water or with sodium carbonate solution there is considerable loss by eucalyptol being dissolved. It should be noted that eucalyptol is decidedly more soluble in diluted phosphoric acid than it is in water. It might be surmised that the third method (by acidimetry) would be liable to error by the pressed cake retaining excess of acid, but practically that does not occur to any serious extent, and the method seems quite reliable, if care is taken that all the acid is washed out. Yet it seems an unnecessary elaboration on the simpler plan of weighing the pressed phosphate and calculating the proportion of eucalyptol. Besides the well-known and more obvious precautions in making the determination, too large an excess of acid must not be used when an accurate result is required. If it is found, in making the determination, that much excess of acid has been used, it is well to repeat the experiment with a proportion of acid nearer that required by theory but still in some excess. Having regard

to the decomposing effect of water, it would seem probable that better results should be obtained by using phosphoric acid quite free from water. He was disposed to regard the acid determination method by titration with standard soda as better than the method of weighing the pressed cake in estimating eucalyptol.

Mr. DOTT's second communication was on

The B.P. Tests for Sodium Sulphite.

The only important test is that for the determination of the sulphurous radical by standard iodine solution. It has long been known, and the matter was thoroughly investigated by Bunsen, that in concentrated solutions hydriodic acid is decomposed by sulphurous acid, so that in estimating SO_2 by iodine it is necessary to work with a highly dilute solution. The Pharmacopœia recognises that fact, and directs that "each gramme dissolved in 50 C.c. of water should decolorise not less than 77·7 nor more than 81·7 C.c. of the volumetric solution of iodine." Unfortunately the test is so expressed as to admit of serious error. In the first place, the result varies greatly according to the rapidity of the titration.

a.	Iodine added very slowly....	=	78·74 per cent.
b.	,, ,, slowly	=	85 05 ,,
c.	,, ,, quickly.....	=	89·46 ,,

Secondly, there is considerable oxidation in the process of solution, and more if the solution is allowed to stand. If the sulphite is powdered, the result is distinctly better than with the crystals, because the latter dissolves less quickly. By dissolving in recently boiled (but partially cooled) water and adding the iodine as rapidly as possible, 92·45 per cent. was indicated. The same solution after a few hours showed only 86·68 per cent. By dropping the weighed powder into a known slight excess of iodine solution, dissolving quickly, and titrating with thiosulphate, 95·24 per cent. of sulphite was found. This method gave not only the highest but also the most constant results; and it would be a desirable amendment to have the test so stated in the Pharmacopœia. The subject has been investigated by Giles and Schearer, as referred to in Sutton's 'Volumetric Analysis.'

Mr. DOTT'S next paper was on

Strychnine Hydrochloride.

There has been some controversy as to the amount of combined water which this salt contains. The B.P. states that "at 100° C.c. the salt loses 7·3 to 8·8 per cent.," the higher number agreeing with $B.Hcl.2H_2O$. Even in the case of such a powerful alkaloid as strychnine, the permitted amount of variation is not serious. The Pharmacopœia ought not to have given the temperature as 100° C. Strychnine muriate cannot be completely dried in a water-bath, and even at 110° it loses weight very slowly. The salt should be dried at 130°-140° C. Three quantities which were carefully dried, and sampled as soon as apparently dry, indicated by drying at 135° C. 7 67 per cent., 7·62 per cent., and 7·71 per cent. of loss. It would, therefore, appear that the hydrochloride does not crystallise with 2 molecules, or that it effloresces with extreme readiness to a composition something like B_47H_2O, which requires 7·84 per cent. of water.

Mr. DOTT'S final communication dealt with

Gallic Acid.

He said Dr. Sillar recently expressed doubt at one of the meetings as to the accuracy of the pharmacopœial statement that solution of gallic acid gives no precipitate with solution of tartar emetic. A sample of average quality was tested and found to give an abundant precipitate. The acid was then twice crystallised from water, and again tested, with the same result. It is evident, therefore, that what is ordinarily understood as gallic acid gives a precipitate with solution of tartarated antimony, contrary to the official statement. He had examined the precipitate, and it reacted as a tartrate, while the supernatant liquid gave the gallic acid reaction with ferric chloride. It appeared that basic tartrate of antimony and gallate of potassium were formed.

DISCUSSION.

Mr. BOA said he agreed with Mr. Dott that the action of eucalyptus oil was probably not entirely due to eucalyptol. In practice he found it possible to determine the eucalyptol value of an oil by the nose.

Mr. LUNAN said he had found it impossible to drive off all the water from strychnine at 100° C. He had found 8·4 per cent. in a commercial sample, and that indicated two molecules of water.

Dr. DOBBIN said the point mentioned about sodium sulphite was an instance in which the compilers of the Pharmacopœia should have given more detailed instructions. There was one point in connection with these volumetric tests which he did not think had yet been noticed. Under potassium permanganate a test solution of oxalic acid was ordered to be used, and the strength given was 62·58 grammes per litre; that happened to be the figure for normal nitric acid solution. The correct figure for normal oxalic solution was 62·55, a difference of only 1 in 2000, but in a book where atomic weights were stated to the second place of decimals, a greater accuracy was expected.

Mr. DUNCAN said the test for sodium sulphite as suggested would be at fault if the sample contained this sulphite. As to strychnine hydrochloride, he observed a tendency to oxidation when the temperature rose to about 130° C.

Mr. HILL said he observed when working at strychnine hydrochloride with Mr. Duncan some years ago, that there appeared to be a tendency to sublime when the temperature rose much above 120° C. He had repeated the experiment and found a sublimate formed, which gave all the strychnine reactions. Blyth had shown that the alkaloid sublimed at 169° C., and it could be distilled unchanged under diminished pressure at 270° C. It was possible that some loss of alkaloidal hydrochloride might take place by sublimation at 135° C., and that might indicate seven molecules where the true figure was only six, as previously determined by Mr. Dott.

Mr. DOTT, in reply, said he had not attempted to determine whether any loss of strychnine alkaloid was due to other causes, the salt was certainly decomposed and became insoluble in water at 150° C., but there was no apparent change at 135°, and the residue dissolved in water.

Mr. HILL read the next paper, in the absence of the author, Mr. A. J. DEY, on a

Sample of Phenazone.

Some time ago, after the lapse of the Patent Law monopoly, for phenazone I had occasion to examine several commercial samples. One of these attracted special notice from the fact that when placed in water minute magenta-coloured spots were noticed at various points. Otherwise the sample seemed of good quality, and it answered all the tests except that, on four determinations, the melting point was found to be 110° C. instead of 113° C., as required by the 1898 Pharmacopœia. But this may be due to the fact that the sample was made to comply with the 1885 Pharmacopœia, in which 110° C. is given as the standard. The sample was laid aside till a few days ago, when it was again examined to ascertain the cause of the coloured spots. Examined with the naked eye the sample looks all right. On examining it with a lens, however, it is seen to contain minute dust particles, some of which do not appear to be acted on by water, but others are immediately dissolved with production of a

deep magenta colour, which slowly changes to a brownish colour. These latter are undoubtedly the cause of the magenta spots, they present all the characters of fuchsine or rosaniline hydrochloride. On adding a few minute particles of fuchsine to a sample of pure phenazone it was found to behave in exactly the same way as the sample in question. The magenta spots seem therefore undoubtedly due to the presence of minute particles of fuchsine in the sample of phenazone. How it came to be there has not been ascertained, but probably fuchsine was being handled in the same works while the phenazone was being dried, and some floating particles of fuchsine dust had settled down upon it. The impurity was detected fortunately before the phenazone was taken into stock, otherwise it might have given rise to considerable trouble, for patients could not have failed to notice that something was wrong with the medicine. It is well for pharmacists always to be on their guard, especially when the patent monopoly for any of these synthetic remedies expires. During the currency of the monopoly one may rely generally on the reputation and ability of the patentee, but after that a great many new makers appear, and there is greater risk of some not being up to proper standard.

Mr. J. RUTHERFORD HILL read the next communication, on

The B.P. Solution of Acetate and Citrate of Ammonium.

In the 1885 Pharmacopœia the solution of ammonium acetate was directed to be made by dilution of a solution of five times the strength. The disadvantage of this method was that the solution contained a much smaller proportion of carbonic anhydride and possessed a more saline and less agreeable taste. In the new Pharmacopœia a return is made to the older method of the 1867 Pharmacopœia, except that a definite quantity of ammonium carbonate is to be neutralised instead of a definite quantity of acetic acid. The process is designed to retain in the finished product as large a proportion as possible of the carbonic anhydride, which gives it a pleasanter taste and adds to its therapeutic value by allaying vomiting in certain febrile cases. The process is a very tedious one on account of the difficulty of accurately determining the point of neutrality or slight acidity by boiling off the carbonic anhydride from successive small quantities in a test tube. It is open to the additional objection that you cannot boil even the neutral or slightly acid solution of ammonium acetate without decomposition and perceptible loss of ammonia. It occurred to me that a shorter and more satisfactory method might be devised, and a few experiments were made with that view. A convenient quantity of ammonium carbonate was reduced to coarse powder, and kept in a stoppered bottle. The alkalinity of the sample was determined by standard sulphuric acid solution, by dissolving a definite convenient quantity—about 1 gramme—in water, adding excess of standard sulphuric acid solution—21 C.c. for each gramme—boiling off the carbonic anhydride, adding litmus, and titrating back with standard sodium hydroxide solution. The operation can be completed in a few minutes. The mean of three determinations indicated that the sample required 19·9 C.c. of standard sulphuric acid solution for each gramme. The strength of the acetic acid to be used was determined with standard sodium hydroxide solution. It was found that each 1 C.c. required for neutralisation 6·7 C.c. of sodium hydroxide solution. Phenolphthalein is the most convenient indicator in this case. The standard solutions were rather hurriedly prepared and perhaps not absolutely of official strength, but they are exactly equivalent, and the results are thus quite accurate. A simple calculation shows that if each gramme of ammonium carbonate requires for neutralisation 19 9 C.c. of standard sulphuric acid solution, it will require 2 97 C.c. of the sample of acetic acid I used. An experimental quantity of liquor ammonii acetatis was made by dissolving 5 grammes ammonium carbonate in 50 grammes of water, adding in portions 15 C.c. of the sample of acetic acid, and making up the product to 100 C.c. with water. The solution gave a faintly acid reaction with test papers and was well charged with carbonic anhydride. The experiment was repeated several times with uniformly satisfactory results. Ammonium carbonate varies in alkalinity, and acetic acid also varies in acidity. It is most convenient, therefore, to determine each at the time of using, and it can be done in a few minutes. It is a distinct advantage to over-saturate the ammonium carbonate with sulphuric acid to begin with, as only one boiling, and that, too, before the addition of litmus, is then necessary, and there is practically no loss of ammonia in boiling the acid solution. The foregoing method greatly shortens the official process and ensures a highly satisfactory and definite finished product. It seemed that the same method might with advantage be applied to the preparation of the solution of ammonium citrate. In the 1885 Pharmacopœia this solution was directed to be made with solution of ammonia, but now it also is to be made by neutralising a definite quantity of citric acid with ammonium carbonate, so that the solution contains carbonic anhydride, which considerably improves the taste. The official method of adding the solid ammonium carbonate to the citric acid solution is, however, attended by a greater loss of carbonic anhydride than when the citric acid solution is added to the ammonium carbonate in solution, and my experiments were conducted with that point in view; 125 grammes of citric acid were dissolved in 250 C.c.—twice its weight—of water, and the solution made up to 375 C.c. This solution therefore contained 1 gramme of citric acid in each 3 C.c. of solution. The acidity of the solution was then determined with sodium hydroxide solution, and it was found that 1 C.c. required for neutralisation 5 C.c. of standard sodium hydroxide solution, phenolphthalein being used as indicator. For convenience the same sample of ammonium carbonate as that used in the ammonium acetate experiments was used. That sample required for each gramme 19 9 C.c. of standard sulphuric acid solution, the acidity of which is to that of this citric acid solution as 5 to 1. It therefore follows that every 3 98 or practically every 4 C.c. of the citric acid solution requires for neutralisation 1 gramme of this ammonium carbonate. My experiments had reduced the volume of the citric acid solution to 360 C.c., which, divided by 4, gives 90 grammes as the quantity of ammonium carbonate, of this ascertained degree of alkalinity, required to form a neutral or slightly acid solution. Ninety grammes of ammonium carbonate were therefore dissolved in 500 C.c.—about five times its weight—of water, and to the solution the 360 C.c. of citric acid solution were added in portions, and the product made up to 960 C.c. The resulting solution is slightly acid to test papers, and, owing to the use of ammonium carbonate in solution, more fully charged with carbonic anhydride, and therefore more pleasant-tasted than when the official process is followed. The whole process can be completed in much less time and with much greater precision than the official process. The citric acid solution appears to hold the carbonic anhydride more tenaciously than the acetic acid solution, and consequently even more boiling is required in this instance. Of course the full process includes the determination of the alkalinity of the ammonium carbonate as described under solution of ammonium acetate. Both these solutions keep best when the acid is in slight excess.

Mr. J. RUTHERFORD HILL also contributed the next paper, on

Tincture of Hops.

My attention was directed to this preparation a short time ago, when investigating the cause of an unsightly precipitate in a mixture containing a dilute mineral acid and tincture of hops. The

tincture of hops of the new Pharmacopœia is made with 4 ounces instead of 2½ ounces of hops to 1 pint of 60 per cent. alcohol. It is therefore about 60 per cent. stronger in hops, and the menstruum is slightly stronger in alcohol than the former proof spirit of 1885. I naturally expected to find that the new tincture would contain much more resin and give a larger precipitate with dilute mineral acid than the old one. I was not a little surprised to find, on trying the samples I had, that the contrary was the case. On examining the two samples it was noticeable that the 1885 tincture was of a deeper colour than the new, but this was no doubt partly due to age. But the odour and taste of the old sample were also distinctly stronger. I also found that the old tincture had a specific gravity of 0 930, and yielded 3·1 per cent. of extractive, while the new tincture had a specific gravity of 0·929, and yielded only 2·6 per cent. of extractive. I had reason to believe that the old tincture was carefully made from good hops, and it looked as if the hops used as well as the menstruum in the case of the new tincture were not up to the same standard. Hops are very bulky and require careful manipulation, and the quantity of menstruum, 20 ounces to 4 ounces, is relatively small in the case of such a bulky material. It is to be noted that the Pharmacopœia does not say the product after maceration is to be made up to one pint. I fear this is sometimes done, and it would ensure accuracy if the Pharmacopœia stated explicitly that this is not to be done. The difference in these two tinctures was so striking that a few others were examined, and the results are given in the following table :—

Sample.	Extractive per cent.	Specific gravity.	Odour.	Taste.	Colour.
A. 98.	2·60	0 929	Fifth	Weakest	Lightest.
B. 85.	2·66	0·933	Fourth	Fourth	Second.
C. 85.	3·10	0·930	Second	Third	Darkest.
D. 98.	3·12	0·931	Strongest	Strongest	Third.
E. 98.	3·30	0 926	Third.	Second	Fourth.

The strongest is placed first and the next second, and so on.

It will be noticed that all the samples except B and C are 1898 tincture. It is also noticeable that sample C is very little inferior to even the best 1898 sample, and much superior in every respect to sample A. None of the 1898 samples indicate such an advance on the 1885 samples as one might have expected from the increased proportion of hops to menstruum. These samples vary among themselves sufficiently to be noticeable by patients in the case of such mixtures as I have referred to. It was observed in evaporating sample A that it became opaque in the same way as sample C, when the alcohol passed off. But in the case of sample E, it remained clear throughout. This would indicate that sample A had been made with a weaker alcohol, and the gravity figures support that view. Tincture of hops is coming into pretty general use, especially in Edinburgh, where is is prescribed and recommended by an eminent teacher of the Edinburgh School of Medicine. It is important, therefore, that a definite product should be supplied. This is difficult of attainment with a drug so liable to variation as hops, and so apt to give rise to discrepancies from faults of manipulation. It has been suggested that a more definite tincture could be made from lupulin, which is regarded as containing the active constituents of the hops. But such a tincture wants the peculiar tannin of hops, the function of which as a therapeutic agent may be of some importance. It is proposed to continue this inquiry with a view to arriving at a suggestion which may secure greater precision and uniformity. It was intended to have determined the alcoholic strength of the tinctures, but this also must be left for further inquiry. It appears that the new official menstruum extracts a smaller proportion of the non-resinous extractive of the drug.

Discussion.

Mr. Lunan said he thought the process for the ammonium solutions was a distinct improvement. It was Proctor who drew attention to the advantage of adding the acid to the ammonium carbonate.

Mr. Dott asked what indicator Mr. Hill had used. He found cochineal the best indicator. He did not think a tincture of lupulin would be a true equivalent for tincture of hops.

Mr. Boa said he would expect the new tincture of hops to give less precipitate, because the stronger alcohol would dissolve a smaller quantity of extractive. His opinion of samples A and C was that A possessed the true odour of hops and C had a manufactory odour which he did not like.

Mr. Henry said the difference in colour of the hop tinctures might be due to the same cause as with chiretta, where the presence of more twigs than leaves sometimes gave a lighter tincture. He disagreed with Mr. Hill as to the point of making up to a pint. In the case of the maceration tinctures, the Pharmacopœia stated that details were left to the discretion of the chemist, and he thought the universal plan was to make up all these tinctures to one pint.

Mr. Duncan said the Pharmacopœia allowed no latitude in the acidity of acetic acid, and the proportion equivalent might be added straight away. He had tried methyl orange as indicator, but it failed; he had tried also cochineal, but it did not prove very satisfactory.

Mr. Hill, in reply, said he used litmus as indicator, but he quite agreed with Mr. Dott as to the value of cochineal, which he had used very frequently more than twenty years ago. When one got familiar with the change of tint it worked well, and carbonic anhydride did not interfere. The old tincture of hops possessed a peculiar valerianic odour, which he thought was developed only on standing. He could not agree that either in odour or in taste, more especially the latter, sample A represented what the new tincture of hops should be. He believed the Pharmacopœia did not intend maceration tinctures to be made up to one pint. A more uniform product was obtained by not doing so, for one operator would press the marc more completely than another, and the made-up tinctures would vary by not making up. The tincture was always of the same strength, no matter how much might remain in the marc.

Additions to the Library and Museum.

Mr. Hill then directed attention to a donation of opaque bdellium, sent to the Museum by Mr. J. S. Ward, of Messrs. Hodgkinson, Clarke and Ward, of London, and to some additions to the Library.

On the motion of the Chairman, votes of thanks were awarded to the authors of papers and donors of specimens.

Mr. Duncan subsequently exhibited a specimen of exalgin coloured by some aniline dye.

The meeting then closed.

Heroin.—Dreser (*Therap. Monats.*) advocates the use of the diacetyl-ester of morphine, to which the name heroin has been applied, as a substitute for codeine. Floret also reports favourably upon it, stating that its action is prompt and certain, allaying irritation in the throat and affording relief in both chronic and acute affections of the respiratory organs attended by cough. It is applicable to all those cases in which codeine phosphate is used. The dose is one-half to 2 centigrammes in powders with sugar, or in aqueous solution.—*Pharm. Zeit.*, xliii., 668.

REVIEWS AND NOTICES OF BOOKS.

A TEXT-BOOK OF BOTANY. By J. M. LOWSON, M.A., B.Sc., F.L.S. Pp. 394. Illustrated. Price, 6*s.* 6*d.* London: W. B. Clive. 1898.

Botanical students have been sorely troubled during recent years by the lack of text-books of moderate size, which should yet give a clear account of the most recent developments in the science under consideration and intelligibly define all the new terms that have sprung into existence within quite a brief space of time. Several attempts have been made to supply this widely-felt want, but whilst some books have been too limited in their scope, or have dealt with too much matter in the space available, others have not been free from the reproach that their compilers were evidently not sufficiently familiar with their subject to explain it satisfactorily to others. An ideal text-book should not require interpretation by an expert, neither should its explanations need reference to larger works to make their meaning clear, but in respect of many points such aids are unfortunately a necessary accompaniment to some botanical text-books now in use. No such fault, however, can be urged against the book now under notice, which appears, beyond question, far and away the best work of its size (and many larger ones are not nearly so good) that has yet been published. It is convenient to handle, moderate in price, printed in very clear type, and freely illustrated in the best possible manner for students, *i.e.*, with well-conceived diagrammatic sketches, the main points in which are boldly indicated in such a manner as to avoid any risk of misconception.

After a brief introductory chapter the book is divided into four parts followed by an appendix. Part 1 is general in its scope and deals with external morphology and physiology, together with histology—the cell, tissues, and tissue systems. Clear general ideas cannot fail to be grasped from these pages regarding the differentiation of vegetative and reproductive shoots, the specialisation and symmetry of plant-members, nutrition and growth, reproduction, relation to environment, homology and analogy. The cellular structure of plants is also explained in a most satisfactory manner, the tissues and tissue systems being clearly distinguished, and only a sufficiency of practical work being required to make the student as thoroughly acquainted with this branch of the subject as is requisite in most cases. Modern views of the structure of the stem, for example, the explanations of which are very difficult to comprehend in most text-books at present in vogue, are here explained in a manner that leaves nothing to be desired.

Part 2 is devoted to the study of the angiosperm, and occupies more than half the volume. The seed and embyro, stem, root, and leaf, are described in turn and at length, after which half-a-dozen chapters treat respectively of nutrition and growth, the plant and its environment, the structure of the flower, the inflorescence, the reproduction and life-history of the angiosperm, the seed and fruit. Then comes a synopsis of the natural orders, in which fourteen families have their characteristic features given in full. The only natural order which pharmaceutical students, preparing for the Minor examination, will not find described here, is Solanaceæ. What may be found lacking in the matter of classification will be fully supplied by Holmes' 'Botanical Note-book,' which most pharmaceutical students obtain and use as a matter of course. In Part 3, the structure and life-history of the fern, *Equisetum*, *Selaginella*, and *Pinus* are clearly explained, whilst chapters are devoted to homologies in angiosperms and the relationship between vascular cryptogams and flowering plants. Part 4 treats in like manner of liverworts and mosses, algæ and fungi, and in every case as fully as is required for the London University Intermediate Science and Preliminary Scientific Examinations.

Students who are working alone will do well to read the appendix carefully. Good advice is there given with regard to the method of reading, the drawing of diagrams, the use of test-questions, microscopical work, and the apparatus required for the same, the order of practical work, examination and description of plants, etc. Apparently nothing has been overlooked or omitted that could in any conceivable way make a text-book of moderate size as comprehensive and complete as possible. Regarding it from a pharmaceutical stand-point, the book will be found to cover the whole ground, with the trivial exception already mentioned, for students preparing for the qualifying examination of the Pharmaceutical Society, whilst those who are working for the Major examination and using this book will require to refer to other works for little, if anything, except the characteristic features of a number of natural orders. In fact, it represents the nearest approach to the ideal botanical text-book that has yet been produced, so far as pharmaceutical students are concerned, and it can therefore be most strongly recommended.

COLOUR IN NATURE, A STUDY IN BIOLOGY. By MARION I. NEWBIGIN, D.Sc. Pp. 344. Price 7*s.* 6*d.* London: J. Murray. 1898.

Not the least interesting fact in connection with this extremely interesting work is the fact that it is written by the daughter of a pharmacist—Mr. J. L. Newbigin, of Alnwick. It embodies an attempt to set forth in systematic order the main facts at present known in regard to the pigments and colours of plants and animals, and deals with the subject in a much more comprehensive fashion than any other work that has yet been published, the physiological side in particular, receiving for the first time the attention it deserves. After dealing generally with colour in nature and in organisms, the author treats in order of the colours and pigments of animals and of plants; the colours of protozoa, sponges and cœleutera; colour phenomena in worms; the colours of crustacea and echinoderma, of the lepidoptera, of insects in general and of spiders. The colours of mollusca, fishes, amphibians and reptiles, birds and mammals are then discussed in turn, the origin of the pigments in mammals being also considered. The concluding chapter deals with the relation of facts to theories, and is followed by a lengthy list of references, an index of authors and an index of subjects. The book is remarkably well arranged and a distinct addition to the literature of the subject of which it treats.

PHOTO-MICROGRAPHY. By EDMUND J. SPITTA. Pp. 163, with 41 half-tone reproductions from original negatives and 63 text illustrations. Price 12*s.* London: The Scientific Press, Limited. 1899

The numerous readers of the *Pharmaceutical Journal* who have derived pleasure and instruction from the series of articles on photo-micrography, which has just been concluded, will be rejoiced to hear of their speedy republication in volume form. The subject matter of the articles has been carefully revised and brought up to date wherever possible, by the insertion of foot-notes referring to accessories of quite recent introduction. Other additions include various appendixes, including a table of refractive indexes and a comprehensive list of twenty-five common faults in photo-micrographs, with their cause and means of cure. In addition to the plates issued with the articles published in the *Pharmaceutical Journal*, there are two others, equally good in every way, the type employed is very large, and altogether the book is an exceptionally fine example of the printer's art. We may claim credit for having suggested the production of the work, which all photo-micrographers will find a necessity.

THE STUDENTS' PAGE.

FLORAL CALENDAR FOR JANUARY.

The following list of plants is intended to serve as a guide to students who may wish to obtain and examine, during each month, the plants which are obtainable in the fields and woods, or purchasable at florists. The plants in blossom in botanic gardens are also given, since many might not wish to miss seeing them when in flower. The writer will be glad to receive lists of medicinal plants in flower each month in different botanical gardens, which could be indicated in the case of rarer plants by the first two letters thus—Re for Regent's Park. The capital letters following the names in the following list indicate respectively: F., obtainable of florists; B.G., visible in botanic gardens; those without initial letters are obtainable wild. References will be given in the pages of the *Pharmaceutical Journal*, where the flowers have been already described. When only a generic name is given it indicates that more than one species may be in flower.

Acanthaceæ.—*Strobilanthes isophyllus.* B.G.

Amaryllidaceæ.—*Eucharis amazonica.* F. *Galanthus nivalis.* F. *Narcissus.* F.

Araliaceæ.—*Aralia papyrifera.* B.G. *Hedera helix* (fruit), (*P.J.* [4], **4**, p. 30).

Aquifoliaceæ (Ilicineæ).—*Ilex aquifolium*, fruit (*P.J.* [4], **4**, p. 30).

Calycanthaceæ.—*Chimonanthus fragrans.* F. (*P.J.* [3], **8**, p. 581; [4], **4**, p. 70).

Caprifoliaceæ.—*Lonicera fragrantissima*, and *L. standishii.* F.

Compositæ.—*Bellis perennis. Cineraria. Eupatorium ageratoides.* F. *Senecio vulgaris* (*P. J.* [4], **4**, p. 50). *Taraxacum officinale* (*P. J.* [3], **20**, p. 21; [4], **4**, p. 336).

Coniferæ.—*Callitris quadrivalvis.* B.G.

Cruciferæ.—*Arabis alpina.* F. *Capsella bursa-pastoris* (*P. J.* [4], **4**, p. 50 and 254).

Cupuliferæ.—*Corylus avellana* (*P. J.* [3], **20**, p. 675).

Ericaceæ.—*Arbutus unedo.* B.G. *Azalea amœna.* F. *A. indica. Erica.* F.

Euphorbiaceæ.—*Euphorbia fulgens.* F. *Euphorbia splendens.* F. *Poinsettia pulcherrima.* F. (*P.J.* [3], **8**, p. 501; [4], **5**, p. 545).

Geraniceæ.—*Geranium* (*Pelargonium*). F. (*P.J.* [3], **21**, p. 42).

Hamamelidaceæ.—*Hamamelis virginica.* B.G. (*P.J.* [3], **11**, p. 509).

Iridaceæ.—*Iris alata and I. histrioides.* F.

Labiatæ.—*Lamium album* (*P.J.* [3], **20**, p. 934. *Lamium purpureum* [4], **4**, p. 110).

Lardizabalaceæ.—*Lardizabala biternata.* F.

Leguminosæ.—*Acacia dealbata*, etc. F. *Ceratonia siliqua.* B.G. *Ulex europæus* (*P.J.* [4], **4**, p. 50).

Liliaceæ.—*Aloe succotrina.* B.G. *Convallaria majalis.* F. *Hyacinthus.* F. *Ruscus aculeatus, R. tulipa* (*P.J.* [3], **9**, p. 613).

Linaceæ.—*Erythroxylon coca.* B.G. *Linum trigynum.* F.

Loranthaceæ.—*Viscum album* (fruit). F. (*P.J.* [4], **4**, p. 30).

Lythraceæ.—*Punica granatum.* B.G.

Magnoliaceæ.—*Drimys winteri.* B.G. (*P.J.* [3], **7**, p. 609). *Illicium anisatum.* B.G. (*P.J.* [4], **4**, p. 70).

Monimiaceæ.—*Peumus boldus.* B.G. (*P.J.* [3] **7**, p. 609; [4] **4**, p. 90).

Myrtaceæ.—*Eucalyptus globulus.* B.G.

Oleaceæ.—*Jasminum nudiflorum.* F. (*P.J.* [4], **4**, p. 90). *Osmanthus fragrans.* B.G.

Orchidaceæ.—*Coelogyne cristata.* F. *Cypripedium.* F. *Dendrobium nobile.* F.

Phytolaccaceæ.—*Petiveria alliacea.* B.G.

Rutaceæ.—*Citrus aurantium.* B.G. *Citrus limonum.* B.G *Xanthoxylon alatum.* B.G.

Ranunculaceæ.—*Anemone hepatica.* F. (*P.J.* [4], **4**, p. 179). *Helleborus corsicus.* B.G. *Helleborus niger.* F. (*P.J.* [3], **7**, p. 610; **8**, p. 501). *Helleborus purpurascens.* B.G.

Rosaceæ.—*Kerria japonica.* F. *Pyrus japonica.* F.

Scitaminaceæ.—*Amomum angustifolium.* B.G.

Scrophulariaceæ.—*Veronica buxbaumii* (*P.J.* [3], **20**, p. 934; [4], **4**, p. 70).

Selaginaceæ.—*Globularia alypum.* B.G.

Simarubaceæ.—*Picræna excelsa* (Re). B.G.

Solanaceæ.—*Capsicum annuum.* B.G. *Nicotiana tabacum.* B.G.

Sterculiaceæ.—*Cola acuminata.* B.G.

Thymelaceæ.—*Daphne mezereum* (*P. J.* [3], **7**, p. 610; **20**, p. 676; [4], **4**, p. 254).

EXPLANATORY NOTES ON THE B.P. 1898.

Liquor Hydrogenii Peroxidi.—The production of a blue colour by the action of hydrogen peroxide on chromic acid has been already explained (*vide* notes on Ether). The reaction between hydrogen peroxide and an acidulated solution of potassium permanganate is as follows:—

$$2KMnO_4 + 5H_2O_2 + 3H_2SO_4 = K_2SO_4 + 2MnSO_4 + 8H_2O + 5O_2.$$

Note that when permanganate is used as an oxidising agent in acid solution the manganese is found as a salt corresponding to the oxide MnO (*e.g.*, $MnSO_4$), while the permanganate may be regarded as derived for the oxide Mn_2O_7 (permanganic anhydride). From this it follows that every two molecules of permanganate yield five atoms of oxygen:—

$$2KMnO_4 \begin{cases} K_2O \\ Mn_2O_7 \end{cases} \begin{cases} 2MnO \\ 5O \end{cases}$$

It should also be carefully noted that one-half the oxygen evolved is derived from the permanganate, hence the commercial products known as 5, 10, or 20 vol. solutions should yield, under the circumstances described, twice the volume of oxygen indicated by their trade name.

Mel Depuratum.—The percentage of ash is a useful factor in detecting certain adulterants which may be added to honey, *e.g.*, molasses, and invert sugar or commercial glucose obtained by the action of dilute acids on starch. The presence of sulphates in the ash points to adulteration with starch sugar, because the sulphuric acid used for the hydrolysis of the starch is usually neutralised with chalk, hence this product contains calcium sulphate.

Misturæ.—Two of the "mixtures" official in the B.P., 1885, have been omitted, viz., Mistura Ferri Aromatica and Mistura Scammonii, while no new formulæ have been introduced. Several of those remaining have been subjected to alterations, the most important being described below. Tragacanth has been substituted for gum acacia as the suspending agent in Mistura Cretæ and Mistura Guaiaci, and the result is an improved product in each case, the deposit which forms on standing being more readily diffused by agitation. Gum acacia has been substituted for caustic potash in emulsifying the castor oil in Mistura Olei Ricini. This is a decided improvement. The same mixture has also been improved in flavour. Mistura Sennæ Composita has been altered in flavour by the substitution of tincture of senna by aromatic spirit of ammonia, while its purgative action has been increased by using five instead of four ounces of magnesium sulphate, and making the product measure exactly one pint, in place of nearly 22½ fluid ounces.

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THE INTERPRETATION OF THE PHARMACY ACTS.

In a case under the Pharmacy Act, 1868, heard at Bradford, Yorkshire, on Tuesday, one of the issues turned on a point, based on Section XV., which had never previously been raised in a court of law. It will be remembered that the Section provides, among other things, that any person . . . . who shall compound any medicines of the British Pharmacopœia, except according to the formularies of the said Pharmacopœia, shall, for every such offence, be liable to pay a penalty or sum of five pounds." In his paper recently read before the Manchester Pharmaceutical Association, Mr. J. Rymer Young, of Warrington, referred especially to this portion of Section XV., and pointed cut the difficulty that might be experienced in proving an offence of the kind aimed at, because of the term "compounding" being employed and not the word "selling." The actual difficulty, of course, is in connection with the definition of the word "compounding" wherever it appears in the Act, and particularly when reference is made in Section XV. to compounding medicines of the British Pharmacopœia. Fortunately, a suitable opportunity arose in connection with this Bradford case to attempt to get the word defined, and though a decision was given in the defendant's favour, a definite advance has been made towards obtaining a judicial interpretation of the term.

The facts of the case are given in detail at page 70. Briefly, they amount to this—defendant had sold paregoric to an agent of the Pharmaceutical Society on October 29 last, and the preparation proved on analysis to contain opium, but a similar preparation sold under the same name on November 19 was found to be devoid of that important constituent. Two charges were therefore brought against defendant under Section XV. of the Pharmacy Act, 1868—the first for having unlawfully kept open shop for the sale of poison, and the second offence charged being the compounding of a medicine of the British Pharmacopœia, which was not in accordance with the formularies of that Pharmacopœia. The case was tried by a jury, a somewhat unusual event under the circumstances, but an affirmative answer was given to every question put by the judge, and judgment was entered on the first plaint as a matter of course. In regard to the second plaint, however, the judge did not see his way clear to interpret the word "compound" in such a way as to imply a second judgment against defendant. The jury was satisfied that the preparation sold on November 19 was devoid of opium and that it was sold as paregoric; but the judge was not satisfied that the defendant had actually compounded it.

There was no question about the sale, but the Section says "compound" and not "sell." The definition of the word "compound" was therefore raised, and though the judge did not hold that the word must necessarily be interpreted in accordance with its derivation, he was very positive that it means something more than mere selling. In fact, the idea of manufacturing the preparation must, he thought, be interpreted into the word, and there was no evidence to prove that defendant had manufactured the preparation. Being a medicine the making of which is open to everyone, it could not be claimed that defendant alone could have made it. Had he claimed proprietary rights in the preparation, whether he had actually made it or not, judgment would in all probability have been entered against him on the ground that the proprietor of the article could alone claim to be its maker. To that extent, therefore, the words of the Section may be said to have been widened in their scope by the judge's decision. And though judgment has been entered against the Society, leave to appeal has been given, and the prospect presents itself of yet a little more light being thrown upon the actual meaning of that much tortured measure—the Pharmacy Act of 1868.

It is curious, by the way, to note how local feeling may pervert the object of the Pharmaceutical Society in undertaking these legal proceedings. The *Bradford Observer*, for example, in an editorial note, remarks that it is somewhat new to learn that a person may be punished for doing a certain act one day and punished again for not doing it another day. The possibility of this, it is suggested, was shown in the case heard at the Bradford County Court on Tuesday. On different dates, the local critic complains, an agent employed by the Society purchased two sixpennyworths of paregoric elixir from the defendant, who is not a registered chemist and therefore not qualified to sell poison, which the genuine elixir should contain. Continuing, he says, "only the first purchase was analysed, and the result confirmed the suspicions. It was found to contain 2½ grains of opium, and under the impression that the second purchase was a similar mixture, the Society applied to the defendant for the payment of two penalties of £5 each. Defendant refused to pay, and a County Court summons was issued. In the meantime, in consequence of his denial that either of the purchases contained poison, the second sample was analysed, and, unlike the first, was found to be free from opium. It might have been thought that in these circumstances the Society would have had to be content with exacting one penalty; but not so. The British Pharmacopœia, the legal standard, says that the elixir shall contain a certain proportion of opium, and upon finding that the drug was absent in the second purchase the prosecutors simply amended the particulars of their plaint, and in respect to that sample charged the defendant with compounding 'a medicine otherwise than according to the formulary of the said Pharmacopœia.'" The suggestion is then made that the defendant was unfairly treated in having to answer a charge of selling the genuine article on one day and a charge of compounding an article which was not genuine on another day. But that is an extremely absurd view of the case to take. If the defendant committed two distinct offences against public polity, there is no reason whatever why he should escape one of the penalties.

ANNOTATIONS.

The Adoption of Poison Regulations by the Pharmaceutical Society has been accompanied by a chorus of approval from the daily press, that would have been more satisfactory if giving evidence of better acquaintance with the matter in question, and a protest must, at least, be entered against tho suggestion that registered chemists are accustomed to handle poisons carelessly. Such a suggestion appears to be implied in the published statement, in one London paper, which says "It is considered that these new and very important regulations should have the effect of reducing to a minimum the possibility of error arising from the careless handling of poisons by chemists." But we have yet to learn that any practical possibility of error arising from such a cause exists, or has ever exceeded that minimum which is represented by a cipher. That poisons are often handled carelessly is notorious, but the offenders are not often registered chemists. The latter make a constant practice of handling all poisons with care; practice in that respect going far beyond the statutory requirements which apply to the extremely limited list of scheduled poisons. But in the public interest British pharmacists have ever been found prepared to sink their self-interest to some extent, and their voluntary adoption of poison regulations is but one more step in the path of self-abnegation for the public benefit. Such regulations have been voluntarily observed by most chemists for many years past, but because it is only now that the fact is definitely announced to the world at large, their observance is supposed to be a new thing, and chemists are being congratulated and patronised accordingly. Some day the public may gain a clearer idea of the extent of its indebtedness to registered chemists, but that time is apparently not yet.

Another Cause for Dissatisfaction is the groundless assumption by the lay press and certain public authorities that, inasmuch as registered chemists constitute a class specially trained to deal in drugs, all drugs retailed to the public must needs be sold by members of that class, and all deficient drugs and medicinal preparations are necessarily sophisticated or tampered with by them. But not a tithe of the unsatisfactory drugs purchased aro procured from registered chemists, and of the very limited number which are, it is safe to say that not in a single instance, from one year's end to another, is the deficiency intentional. Some of the craft are undoubtedly careless of their own interests, as witness the evidence in cases reported in the Journal from time to time, but that is the worst that can be said in this connection. Wilful adulteration or substitution is not a habit of the registered chemist, though with most of his business opponents it is probably as common a practice as any that exists. But the chemist does not protest enough or at the right time or in the right place. Local newspapers reporting cases under the Sale of Food and Drugs Act too frequently describe the defendants as chemists or druggists, when the individuals proceeded against have no right whatever to the titles. In such instances not a moment should be lost in setting the matter right in those newspapers, and the greater the number of chemists who write to the conductors of the papers on the subject the better. Self-effacement may at times be desirable in the public interest, but it is not to the public interest that law-breakers of all kinds should be allowed to adopt the titles of registered persons with impunity.

The Exceedingly Roundabout Way in which individuals and firms not connected with the Proprietary Articles Trade Association are prepared to proceed in order to obtain supplies of articles on the Association's protected list is well illustrated by a curious case concerning which details are given in a recent number of tho *Anti-Cutting Record*. An order sent to Messrs. W. Sutton and Co. for proprietary articles, including several on the protected list, was written on paper headed on "E. Pritchard, A.P.S., Chemist, Druggist and Drysalter, Swinmore, near Ledbury." The usual agreement form having been sent and returned duly signed, the order was executed, but when a second similar order arrived within less than three weeks, inquiries were set on foot. It was then found that Swinmore is a village containing a dozen houses only and no shop. The Register of Chemists and Druggists does not include the name of any "E. Pritchard," but it gives the address of an "Edward Thomas Pritchard" as New House, Swinmore, Ledbury. That, of course, is a private house, and the same address is given in the 'Medical Register' for 1897 as that of Edward Thomas Pritchard, M.B., but the 'Medical Directory' for 1899 gives the same person's address as "The Dell," Southampton. That, curiously enough, is the address of Mr. W. Day, one of the directors of a local joint-stock drug company, and another curious fact is that another director of the company is named E. T. Pritchard. Moreover, all the protected articles supplied by Messrs. Sutton and Co. havo been traced to the Southampton drug store in question. It would be interesting to know how conduct of the kind implied by the foregoing facts is viewed by the medical authorities, and also what justification Mr. Pritchard has for assuming the style "A.P.S.," since he is not in any way connected with the Pharmaceutical Society. Meanwhile, Mr. Glyn-Jones is to be congratulated on a smart piece of detective work, which has resulted in the stoppage of supplies of protected articles to the fictitious A.P.S.

"Censurable" is the word heading a letter addressed to the editor of the *Medical Press*, by a correspondent who refers to the case of the dispenser to the Stockport practitioner, who recently caused the death of a woman by putting too much morphine into her medicine and inadvertently changing the dose from teaspoonfuls to tablespoonfuls. The conduct of the dispenser was declared at the inquest to be "censurable," while his employer was censured for having written his prescription in an incomplete form. As this correspondent points out, there does not appear to have been any excuse for so gross an error, and the statement of the culprit in extenuation of his conduct, that he was "confused" by neuralgic and domestic trouble, is interpreted as implying incapacity for performing the work of dispensing properly. But the point to which attention is more especially called is the inadequate protection to human life which the law affords in such matters. "In any other country than this such an incident would, of a certainty, have entailed upon the delinquent a term of imprisonment, and his employer would have been mulcted in heavy damages in a civil court. Here they are both simply declared 'censurable.'" A medical man who employs an unqualified dispenser is declared to incur a heavy moral responsibility, but it appears to the writer of the letter from which we quote to savour of "infamous conduct"—and he commends that point to the consideration of the General Medical Council.

Medical Halls of a Notorious Type came in for severe condemnation at an inquest held at Lambeth a few days ago. According to the evidence, the deceased—a woman of seventy-six—had not been properly attended to by the medical practitioner called in to treat her for a fractured thigh, and the jury added a rider to the verdict, to the effect that the medical attendant was

deserving of grave censure. But in addition to condemning his treatment, the jury in general terms condemned the so-called "medical hall," describing it as a fraud on working people, and as evidence that the rider was thoroughly justified, the coroner—Mr. Braxton Hicks—endorsed the jury's expression of opinion. No meaner fraud ever existed than the "medical hall" where advice and medicine—the latter usually dispensed by an individual who knows nothing about it—can be obtained from sixpence upwards. In this case the fee charged was half-a-crown for four visits, or sevenpence halfpenny per visit, an honorarium which cannot by any stretch of the imagination be regarded as unduly munificent. But what a depth for a duly registered medical practitioner to fall to, and what an easy-going body the General Medical Council must be to tolerate such scandals!

Pharmaceutical Students working in London are favoured by the addition of a new feature to the Museum at 17, Bloomsbury Square, in the shape of a Wardian case containing living medicinal plants. The idea—originating with the Curator, Mr. E. M. Holmes—is that an additional interest will be imparted to the study of vegetable materia medica if as many as possible of the plants yielding medicinal products can be seen in the living condition by students. The first lot of specimens exhibited includes *Eucalyptus globulus* (Myrtaceæ), with flowers and flower buds, gathered at Cannes and sent by Mr. R. Goodwin Mumbray, of Kew; *Smilax aspera* (Liliaceæ), the root of which is used in Italy in the same way as sarsaparilla, also gathered at Cannes and sent by Mr. Mumbray; and *Hamamelis virginica* (Hamamelidaceæ), from the Cambridge Botanic Garden. Reference may also be made here to the fact that the Students' Page this week contains a fairly complete list of plants that are at present to be found in a fit state for examination in fields, woods, and botanic gardens. The names of such of the plants as have been described in previous volumes of the Journal are indicated, full references to the back numbers being given, and it is hoped that the monthly floral calendar will prove useful to many students.

The Chelsea Physic Garden is the subject of a leading article in last week's *Gardeners' Chronicle*, and especial pleasure is expressed by our contemporary that scientific instruction and research in systematic botany and vegetable physiology are to be provided under the new scheme. Thirty or forty years ago, it is pointed out, vegetable physiology was at a very low ebb indeed in this country. Histology, or the investigation of the minute anatomy of plants by means of the microscope, was in arrears in comparison with its condition in other countries; and the natural history of the so-called flowerless plants was scarcely studied here at all. Without contrasting at length the present state of things with the past it is noted that the pendulum has swung to the full in the opposite direction, and that systematic botany is nowadays, in spite of its great importance, scarcely studied at all. "Without in the slightest degree derogating from the other departments of the science in which such great progress has been made, we may lament the little attention now paid to the knowledge of plants in general, and of their affinities and uses. Nowadays the student gets to know about parenchyma and sclerenchyma, centrosomes and mitoses, when he is unable, it may be, to recognise the botanical differences between the flower of a cabbage and that of a cucumber." The medical profession till lately furnished the great majority of our botanists, but the fear is expressed that the medical men of the future will not be so well equipped for this purpose as their predecessors were, and that systematic and economic botany will suffer proportionately. The matter is also of much consequence to horticulturists, who are expected to be familiar to some extent with the leading natural orders of plants, their relationships, points of difference, and economic uses. The hope is expressed, therefore, that the old Chelsea garden "will not be given up wholly to microtomes and staining agents, but that the old traditions will be kept up in the shape of practical instruction in systematic botany." That hope we re-echo, whilst cordially endorsing all the views expressed in the article referred to.

The Chemists' Assistants' Association has got a pleasantly varied programme for the half session extending from the present month to May next. Arrangements have been made for thirteen evenings, of which music, dancing, and dining will monopolise four, and the annual general meeting one. The remaining eight are to be devoted to serious work, including papers on "The Spectacle Makers' Company," by Mr. S. W. Woolley; "The Alleged Decline of Pharmacy and Pharmaceutical Research," by Mr. F. Upsher Smith; "Antitoxins: Their Preparation, Properties, and Administration," by Dr. R. T. Hewlett; "Dairy Produce," by Messrs. A. H. Mitchell Muter and P. R. Hill; "The Commercial Study of Drugs," by J. H. Heap; "The Chemistry of Gout," by Dr. A. P. Luff; "Methods of Alkaloidal Assay in Their Pharmaceutical Application," by Dr. H. A. D. Jowett; and "The Hygiene of the London Streets," by Mr. T. A. Ellwood This is truly a good and varied programme, without too many topics bearing on the work of the pharmacist's everyday life. The chemists' assistants of London are wise to bear in mind the desirability of occupying the mind during leisure hours with an occasional change of subject, and still wiser to act in accordance with that notion.

Patents in the United States have been the subject of an important decision affecting many English inventors, given by the Commissioner of Patents at Washington on December 20. According to section 4,887 of the new Statute which became operative on January 1, 1898, an inventor who had first applied for a patent in a foreign country will not be debarred from receiving a patent for the invention in the United States by reason of having first been patented abroad, unless the application for the said foreign patent was filed more than seven months prior to the filing of the application in the United States. Now, as pointed out by the signatories of a letter to the *Times*, since the majority of inventors in England file a provisional specification and obtain provisional protection before they file a complete specification on the basis of which the patent is granted, a few experts had arrived at the conclusion that in the case of the English patent the date of application referred to in the said Statute would be the date of filing the complete specification. When, however, the question came before the Commissioner of Patents, he held that the date of application for an English patent is the date on which the original application was filed, even if it had been accompanied only by a provisional specification, the reason being that according to English law provisional protection is not analogous to a caveat, and the patent, when granted, is dated as of the day of application instead of bearing the date of actual grant or issue, as in the case in the United States and some other countries. English inventors are, therefore, warned to be careful to apply for a United States patent in good time if they wish to obtain protection for their invention in the United States.

LIVERPOOL CHEMISTS' ASSOCIATION.

The annual general meeting of this Association took place on Thursday evening, the 12th instant, at the Royal Institution, the PRESIDENT, Mr. J. Bain, in the chair.

The SECRETARY, Mr. Wardleworth, reported the receipt of several donations of books, English and American, to the givers of which a vote of thanks was accorded on the proposition of Mr. A. BUCK.

The annual report of the Secretaries showed a satisfactory condition of affairs notwithstanding the age of the Association, which this year reaches its fiftieth year of existence. Its total strength is 120, and during the past year nine new members were elected, five members resigned and three died—Messrs. Conroy, Dutton, senr., and Mitchell. Equally satisfactory was the report of the Hon. Treasurer, Mr. Wellings, showing a balance in hand of £10 14*s.* 3*d.*, as well as a valuable asset in the shape of about 600 copies of the new edition of the price-list. Cordial votes of thanks to the President and officers were then accorded with unanimity.

A letter of apology was read from the President-elect, Mr. E. Evans, who was unable to attend personally and deliver his presidential address, in consequence of a severe cold and the inclement state of the weather, which, in view of his advanced age, rendered it unadvisable for him to travel to Liverpool from his home at Wrexham.

Dr. SYMES announced the adoption as regulations by the Pharmaceutical Society at a special general meeting, of the storage of poisons recommendations. It was decided to forward to the Society the resolutions arrived at by the Association at its former meeting relative to this question, and also to send them officially to the Secretary of the Federation of Local Pharmaceutical Societies.

A question arose respecting the sale by unqualified persons of ammonium sulphocyanide, which Mr. COWLEY thought was illegal, as he considered it came under Part I. of the Poisons Act. As to whether the salt was poisonous or not, no very definite opinion was elicited from the meeting, but it was advised that the question be examined and a report submitted at a future date.

The scrutineers, Messrs. Parke and Hudson, then announced that the following gentlemen had been elected to the vacancies on the Council of the Association: Messrs. Abraham, Hocken, Stockdale, Swinton, Symes, Thompson, Wellings, and Wyatt.

In the absence of Mr. Edward Evans, the following address was then read by his son, Mr. JOHN EVANS:—

Seventy Years' Reminiscences of the Drug Trade.

Allow me first of all to thank the members of your Association for conferring on me again the honour of presiding over your meetings—a position which I held for the first time early in the history of the Association—and then permit me to thank you for asking me to give the recollections of my connection with the drug trade, but in this latter case you will readily understand that a very wide field is covered by remembrances of London that carry me back to the time when I was a boy in the crowd which stood near London Bridge to see that now historic structure opened by King William the Fourth, and also by recollections of Liverpool that are associated with trips to Bootle in order to spend a day on the sands at the seaside. It would be impossible, even within the compass of a book, to do anything like justice to the subject, and therefore you will have to be content with a *résumé*, more or less fragmentary, of the leading points which come back to me after the lapse of many years.

After passing through the usual school experiences of the youth of the day, I was apprenticed to my father in 1830. As was frequently the custom in those days in London, I was bound to my father through one of the London companies, namely, the Musicians' Company—another wholesale druggist, Mr. Herring, having induced my father to become a member of that body. The indenture is such a quaint document that I venture to give you the text of it.

This indenture witnesseth that Edward Evans, son of John Evans, Citizen, Musician of London, doth put himself apprentice to his said father, John Evans, to learn his art, and with him after the manner of an apprentice, to serve from the day of the date hereof, until the full end and term of seven years from this next following to be fully completed and ended. During such term the said apprentice his said master faithfully shall serve: his secrets keep: his lawful commands everywhere do. He shall do no damage to his said master, nor see it be done by others, but that he to the utmost of his power shall let or give warning to his master of the same. He shall not waste the goods of his said master, nor lend them unlawfully to any. He shall not commit fornication, nor contract matrimony within the said term. He shall not play at Cards, Dice, Tables, or any other unlawful game whereby his said master shall have any loss. With his own goods or others during the said term without licence of his said master he shall neither buy nor sell. He shall not haunt taverns or playhouses, nor absent himself from his said master's service day nor night unlawfully, but in all cases, as a faithful apprentice, he shall behave himself towards his said master and all his during the said term, and the said master in consideration of the natural love and affection which he hath for his said son, and also in consideration of 5/- stg. of lawful money of Great Britain, being the money given with his said apprentice, his said apprentice in the art and mystery which he useth by the best means that he can teach and instruct, or cause to be taught and instructed, finding to his said apprentice meat, drink, apparel, lodging, and all other necessaries, according to the custom of the city of London.

During the said term for every true performance of all and every the said covenants and agreements either of the said parties bindeth themselves into the other by this presents, in witness thereof the parties above named to this indenture interchangably have put their hands and seals the 28th day of June in the first year of the reign of our Sovereign Lord William of the United Kingdom of Great Britain and Ireland, King, Defender of the Faith, in the year of Our Lord, 1830.

JOHN EVANS.
DANIEL WOOD, Clerk.
J. J. SKILBECK, Master.

Well do I remember the first day I donned the apron and began my first experiences in the dry room. My first task was to pick gum. To render this operation more congenial I found a barrel, which was utilised as a temporary seat. Shortly after, my father came round, and strongly protested against such an easy-going way of doing business, which would lead to no good end. The barrel was banished as a seat, and the gum was finished by the youthful apprentice in a standing position. This kind of work was all done by men or boys, as my father had no faith in having any "petticoats," as he called them, about the place in those days. This austerity on the part of the head of the firm was manifested in other directions—he thought that no one should read anything but the Pharmacopœia, or works of a kindred nature. Now, my brother John was a great reader, and once, when caught in the act of reading the poet Byron, he was severely reprimanded, and told that if he were caught again the book would be thrown behind the fire. The wholesale trade claimed all my attention until 1833, when I was again bound apprentice, this time to a retail druggist at Poplar, named Talbot, who had been in my father's employ, and who was thought a capable teacher of the mysteries of the retail trade. Here I stayed nearly twelve months, learning much that was of great service to me in after life. At this place I had to work "like a nigger," do all the heavy work of the shop, work from 8 a.m. to 10 p.m. every day, with one Sunday off in four, and on this occasion had to walk from Poplar to the other side of London to dine with my father, and then walk back again at night. Once when left in charge of the establishment a sailor entered and complained that he had a pain in his stomach and wanted a remedy at once. Unwilling to display my ignorance, and anxious for the credit of the shop, I at once made up a mixture consisting of aqua pura and syr. rhœados. It looked nice, and I charged my patient 1*s.* Like the Scotchman, "I had my doots" about that prescription, which were not lessened when the shadow of the man darkened the door of the shop on the day following. Imagine my relief when he blurted out that he had called to thank me for the medicine I had given him. On thinking the matter over, I came to the conclusion that there was probably some virtue in my having charged him a shilling. While entering fully into the work of the shop, there was one thing I detested—that was the weighing of one lb. parcels of ground alum, which we used then to sell to bakers for whitening the bread—a practice very common in those days.

About this time my father recognised the advantage of Liverpool as a centre for developing the Welsh and North trade. He came to Liverpool to investigate, and boasted on his return of having travelled between Liverpool and Manchester by the new railway. Whether he was on the train by which Huskisson was killed I cannot say, but I know the incident was referred to fully by him on his return. At the end of twelve months, it became necessary for me to come to Liverpool, and at the Christmastide of 1833 I turned my steps toward that city to join the business started by my father in 1833, and carried on by my brother John. I left Talbot with a measure of regret, as we had been good friends. I had a letter from him written shortly after coming to Liverpool, telling me of the completion of the Pier and New Hotel at Poplar, and congratulating me on the success of the Liverpool house. Seeing that the house had only been established months, not years, his congratulations in light of later events were not at all premature. I have also a copy of my reply, and I find that I recommended him to take a partner—he was a bachelor. When I read the letter now, and remember that I was only a stripling then, I am rather shocked

at my temerity—still I cannot help feeling, even after the lapse of years, that the advice was good. In his letter he alludes to an attraction he had added to his shop, namely, a gas lamp on the counter, put in at my suggestion, and in a quaint way, he says, the novelty had been a success. On the journey down, as it was Christmas-time, I took a holiday with some relations in Shropshire, and on presenting myself at the office found that my father considered the time had been ill spent; a holiday was not to be thought of at that time. My brother and myself had to be everything—invoice clerks, returns clerks, ledger clerks, and be ready to do everything. My father often kept us late to post up the books and make out invoices. Well do I recall my father's jubilation over the first entry in the Liverpool journal of the account of a man named Wood, of Dale Street—a name which remained a long time on our books. Those were the days of long hours. We began at 6 a.m. in the warehouse, and went on until 8 at night. Wetmen, drymen, and packers had half an hour for breakfast, one hour for dinner, and no other break until work ceased at 8 p.m. There were no summer vacations, no Bank Holidays, no Saturday half-holidays. This, as you know from experience, is now all changed, but I am glad to say we led in this direction, and as a firm have again and again shortened hours and lessened work to the advantage of all concerned. Once I remember Gladstone (then a young man) gave a lecture at the Literary and Philosophical Society, and I managed to find time to hear him. I had the pleasure of reminding him of this fact at Wrexham only a few years ago. I may say here that little or no work was done before breakfast—namely 8 a.m.—beyond dusting the counters and other light work. In thinking of the enormous changes which have taken place, it must be remembered that when I commenced my business career there were no railways, no telegraphs, no telephones, no typewriters, no penny post, few "post" orders. The invoices had to be written, and then put into the hamper with the goods. The chief means of conveyance in those days was the coach, with its characteristic driver and guard, beloved of Dickens and redolent of Weller. On some of the coach routes it was possible to visit a series of small towns in the day, and by a judicious "tip" to the guard it was quite feasible for a coach to be kept in a town while the traveller visited all his customers—the protests of the other passengers notwithstanding. I remember one such journey Whitehaven way. The commercial travellers used to see much of each other, and on my journeys very frequently did I see faces at the table that I had met before that journey under similar circumstances. A van ran between Liverpool and London carrying goods only, and took two or three days to complete the journey. Heavier goods went by waggons or canals, while the coasting vessels carried many packages to the towns near the coast. The last-named method of transit was very irregular, as I have known goods to be delayed fully six weeks waiting for a vessel to carry them to their destination. Speaking of means of transit reminds me that on one occasion I saw the first 'bus run in London, Shilliback's, and hurried with others to a shop door to see the novelty pass—a lumbering 'bus with three horses abreast—a sight which caused great crowds to assemble, as the motor cars do to-day. Those were the days for orders. Druggists had to lay in much larger stocks then than now. One of my clearest recollections of these matters is the starting of the mail coach from Old Post Office Place—then Post Office Place. This Royal mail, in all its glories of paint and red-coated driver and guard, used to leave at 4 or 5 o'clock in the evening, reaching London the next day towards nightfall, and my father often used to travel by it in his journeys north and south.

Clear cut and sharp in my memory are the incidents of the American war, and its effects on Liverpool life and trade. While it produced the direst results among the cotton operatives and others engaged in the spinning and weaving trades, it was a harvest time for many trades, and, among others, that of the chemist and druggist. Everybody in Liverpool was for the South, and we shared in the trade which arose through the running of the blockade. Supplies for the Confederate Army had to be obtained somehow, and Liverpool came in for a large share of the traffic. Orders amounting to £8000 and £10,000 worth of drugs, bandages, lint, and medical comforts were not infrequent, and just before the war closed we shipped a large line which had to be brought back to Liverpool. The goods were sold at auction, and realised such full prices that there was no loss to the Confederate agents. This we considered a distinct compliment to the suppliers of the preparations. One fact connected with this period lingers in my mind a little unpleasantly. When the Southern cause seemed in the ascendant we were induced to accept a number of Confederate bonds as a guarantee for an order which an enthusiastic Southerner placed in our hands, with a result that can be easily imagined—we still have those bonds I believe somewhere. To-day when I look at your price-lists, I am amazed at the enormous number of the preparations, synthetic and otherwise, which have been introduced since my time. The advent of quinine at £2 to £3 per oz. was an important event, and to-day I understand you reckon the price at pence per oz. instead of pounds. Borax was also new at that period, and the price asked was astounding compared with the figure ruling now. Its use was limited in the extreme, and now you tell me that its uses are too manifold to be enumerated, ranging from the glazing of pots and pans to the killing of cockroaches. Opium was then an important drug, as it is to-day, but we had none of its alkaloids to bother us, and no tests as to its strength to worry the druggist. It was simply judged by its appearance, and everything depended on the acumen of the dealer as to what he was getting. Among other articles bought and sold in this way was scammony—an esteemed drug at that time. Elegant pharmacy was in its infancy, and the blue pill followed by a black draught was considered a remedy beyond compare by nearly everybody. During my experience, podophyllin was introduced under the name of vegetable mercury, and seems to have held its own, while many of its contemporaries have gone out of existence to be remembered no more. In these days of the Norwegian and Newfoundland fisheries many pharmacists will be interested to know that we used to do a very large trade in cod-liver oil made from livers pressed by ourselves. £15 to £20 used to be paid by us every week in the season for the true fresh livers, and well do I recall the process of pressing—especially the smell. We once managed to sell a quantity of the exhausted livers to a farmer for use as a fertiliser, but he never came back for a further supply, evidently the land cared no more for it than we did. Rhubarb was an important article with us in those days; and truly a change has taken place in our method of procuring it. The finest so-called Turkey rhubarb used to come from Russia, and was bought in condition known as "trimmed" when we got it. Undoubtedly the quality was choice, but for some reason the source of supply from that direction stopped, and we had to take the untrimmed variety from China direct, and that description has held the market since. It was said of some wholesale druggists that they supplied in those days all grades of powdered rhubarb from the same bin, and there is reason to fear that in some cases the rumour was justified. Trimmed rhubarb was largely used by dandies and fashionable people, who used to constantly carry small pieces in their pockets. In addition to the nibbling of rhubarb, there was also a craze for taking whole mustard seed as a liver stimulant. It used to be carried in small pouches, and was taken by the teaspoonful. Of leeches I need say nothing, except that, as you know, they have fallen from their high estate, and the leech jar is now no longer an important item in our stock. Blistering was an institution of which much less is heard to-day than in years past, when the leech and the blister were the most popular remedies in the hands of the family practitioner, and the chemists' show cases exhibited choice assortments of heart-shaped blisters of all sizes. The use of mercury in many forms was distressingly frequent, and much suffering was caused by its abuse as a medicine.

What the world did for pills seventy years ago I cannot imagine when I see the enormous mass of machinery we now employ, and think of the millions turned out by ourselves, to say nothing of our important contemporaries. We used to consider it a good line to sell a pill machine to make twelve or twenty-four pills—always 5 grain, as only one size was then made. Long lines of huge percolators, such as I see in our laboratories, would have found no use with us when I travelled, as nearly every druggist made his own tinctures, and to such an extent was this done, that my own father, notwithstanding his keen eye for business, was opposed to our having any laboratory work done on the premises. Truly a mighty change has taken place in the sixty to seventy years.

Opening a new account is always a delicate operation, and glad is the heart of the traveller when he has a novelty that takes the popular fancy. Such a line came to me in a form which will amuse the modern mind. Lucifer matches were only just introduced, and they were a source of great wonder to the public so long dependent on the flint and steel of the tinder box. We secured

the importation into Liverpool of these lucifer matches, or "St. Romers" as they were called, and I found them exceedingly valuable in opening many new occounts on my journeys. Few alkaloids were known in the earlier part of my career, and the crudest methods were adopted in employing such preparations as ext. bellad. so as to get the benefit of the active principles. Prior to the invention of chloroform by Sir James Simpson, which was first manufactured by Duncan, Flockhart and Co., it was usual to use ether. On the advent of chloroform, I remember we had a big stock of brass ether inhalers, and we had to carry them as dead stock for many a year, owing to the change wrought by the use of chloroform. Our sundry department at that time occupied a small room over the doorway, about one-twentieth the size of our present showroom.

When the Liverpool Chemists' Association was formed, I was deeply immersed in the affairs of our young but growing house. I therefore had but little time to devote to its practical working, but what time I could spare I gave, and was its first Vice-President and Treasurer. In the course of a few years, I served you in the capacity of your President. Among those most closely associated with its fortunes were Mr. Robert Clay (President), Mr. Abraham, Mr. R. Sumner, Mr. Mercer, Mr. McGuffie, Mr. Lathburgh, Mr. Fisher, of Bold Street, at the corner of Slater Street—this man used to call every morning at the office and leave an order. Dr. Edwardes, of Berry Street, was a very active man, and I believe he is still living in Montreal. Dr. Nevins also contributed some valuable papers. Mr. Alpass was also a leading light, and became a member of the Town Council—Messrs. Geo. Thompson, J. H. Johnson, Rawle, Rowland, Wagstaffe, Tierman, Shaw, and Jardine, with Professors Brett and G. Hamilton, helped the Association very ably. The first meeting was convened at the Queen's Hotel on June 4, 1849, by Mr. Jacob Bell. All these and others did much to secure the foundation of the Society, and, as its records prove, much valuable service was rendered to our calling. I am glad to note that the Association is still constantly contributing in some form or other to the sum of pharmaceutical knowledge, and that it has by its past history so fully justified its existence. One feature which disturbed the even tenor of the chemist's way in Liverpool for a time was the establishment of the Liverpool Apothecaries' Company, of which Mr. R. Clay was the first manager. This institution sought to get a special Act of Parliament for incorporation, but the Liverpool chemists, supported by the London houses, offered such opposition, that the Act was refused, as also was application for an order from the Board of Trade to confer special power on the Apothecaries' Company. Some of our customers became shareholders, but the original scheme was ultimately much modified, and Mr. Clay took up more congenial labours elsewhere.

You will be interested to know that I was one of the original members of the Pharmaceutical Society after its incorporation, and have been a member ever since. I remember the starting of the *Pharmaceutical Journal*, which was first edited by Jacob Bell, and I recall the umbrage which the appearance of his name as editor on the title page caused to one of his rivals, who strove for a long time to have it removed, alleging that it was not the correct thing for him to put it there, as the Journal was the property of the Pharmaceutical Society. In 1859 the *Chemist and Druggist* was started, not so much as an opposition paper, but to voice the feelings of the trade with regard to "early closing," a subject which is still with us as lusty as ever, and to protect more fully trade interests, a line of policy which it seems to have adhered to throughout, with manifest advantage to itself and the trade. One of the striking features of one's memories of the early days spent among the pharmacists in the early part of this century would always be the figure of the Quaker druggist, Jacob Bell, who was an enthusiast, and longed so to benefit his brethren of the craft, that he went into Parliament to further the interests of the chemist, asserting stoutly that the ordinary private members of the House were too indifferent to be affected by the claims of the dealer in drugs and compounder of medicine. Many were the amusing stories told of this bachelor druggist, who, though a Quaker, had queer views on some points, and some of his practical jokes might hardly have been realised by the "unco guid" of to-day. Bell was a great friend of Landseer, the painter, and secured many of his pictures, which were afterwards bequeathed to the nation. It is said that after Landseer had painted "The Horse Shoeing"—I think that was the picture—he was dissatisfied with the general effect, and disclosed the fact to Bell. The latter, on looking at the work, suggested that a donkey should be painted in, standing under the head of one of the horses. This was done, and the result proved satisfactory to the artist, the donkey being allowed to remain.

Mr. Lescher, father of our present London partner, was at that time on the Council of the Pharmaceutical Society, and I recollect that associated with him were many famous in pharmacy, among others, Thomas Herring (Herring Brothers were then recognised as the head of the profession in London, but I am now told that all the old members have ceased to be), Ince, Morson, and others. The honour of being a member of the Pharmaceutical Society was conferred upon me, and for some time I served the Society in that way, giving place in time to my younger brother, H. Sugden Evans, who, as you will remember, died several years ago while on a visit to New York—occupying at that time the position of Chief Analyst to the Dominion of Canada, and who, during his residence in Liverpool, contributed many papers to the Liverpool Chemists' Association.

Much has been said, and is being said, as to work that the Society has done, and what it has not done for the chemist, but looking over the years covered by my association with the trade, I am bound to say that the Society has done much for the chemist. It has vastly improved his status in many ways, and contributed to his well-being. It could have done more if the chemists had rallied round it in a more whole-hearted manner. The new conditions of membership I hope will lead to new activity, and more solid union among chemists as a body, thus realising as one the forecasts and the hopes of its founders.

Now, when my hair has been whitened by the kindly frosts of many winters, I lay down my pen with a strong and abiding sense of hope. True that the conditions of life are to-day more intense, and the struggle of life keener—still men make fortunes, win competencies; and I have lived to see much wrong righted, many abuses checked, great and lasting benefits conferred on the masses; ample room left for the man of energy and talent to rise in his profession, and find the fullest play for the faculties that God has given him.

At the close a vote of thanks to the President was proposed by Mr. Bain, seconded by Mr. T. F. Abraham, and supported by Mr. Edward Davies, F.C.S., one of the oldest members of the Association.

After a hearty response on the part of the large audience, Mr. John Evans briefly thanked the Association for the honour done to his father, which he stated was highly appreciated by him.

Mr. T. H. Wardleworth then read a short note on

Ginseng Root (Panax quinquefolium),

saying that he ventured to bring this drug under the notice of the Association in consequence of several inquiries which had been received from druggists in this country. A great deal of doubt seemed to exist as to what was intended, and he therefore ventured to give the members a few particulars and to supplement, if it were possible, the somewhat meagre accounts in text-books. A variety has been known for a long time in the East—*Panax ginseng*, collected chiefly in Tartary, Manchuria, Corea, China, and Japan, but the variety which is of most interest to the British pharmacist is the American. This—*Panax quinquefolium*—grows chiefly in the northern States of America and in the Dominion of Canada, and for a long time was looked upon as a weed. In consequence of the immigration of the Chinese into the States its value has been recognised, and it is now an important article of commerce, fetching very high prices in America, and in China it is said to command fabulous sums, having been sold at times for its weight in gold. This enormous increase in value is due to the veneration in which it is held by the Chinese, who look upon it as a veritable panacea, having the power of prolonging life to a miraculous extent, and being a most wonderful aphrodisiac. Dorvault only mentions the Eastern variety—*Panax ginseng*—and adds "the root is made into lozenges and used in a much vaunted wine." "It is also said to be a good febrifuge." Hanbury and Flückiger dismiss the drug with two or three lines, saying that it is used as an adulterant of senega and serpentaria, but the writer of the note thought that this could only happen with the small or immature roots, as the sample he was showing was far too large to be confounded either with senega or serpentary. The specimens shown were fusiform roots, measuring 12 Cm. to 15 Cm. in length by 2 to 4 Cm. in the widest part; they broke with a starchy fracture, and possessed a peculiar aromatic odour and taste.

Their colour was pale straw, and they were covered with a number of narrow annular markings, which were the chief characteristic. He had been informed by a valued correspondent that the demand for ginseng outside of China was very small indeed, as it had been found to possess little or no medicinal value beyond being a carminative and demulcent. In view of recent inquiries, however, he had ventured to notice the drug, so that any members of the Association who might come across it in their business might be in a position to know what it was.

In the discussion following, Mr. Cowley said he had never seen it mentioned except as a possible admixture with senega, for which it might be mistaken when in small-sized roots.

Mr. Prosper H. Marsden said it was more correct to describe it as an accidental admixture when found in senega, giving as his authority Mr. Holmes.—After a vote of thanks to Mr. Th. H. Wardleworth for his communication, a very successful meeting came to an end.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At the meeting of this Association, held on Wednesday, January 11, Mr. G. H. C. Rowland, President, in the chair, the first communication was by Mr. William Duncan on

An Incompatible Mixture.

The following is the mixture :—

℞	Sodii Bromidi	ʒiv.
	Phenazoni,	
	Chloral Hydrat.	aa ʒiss.
	Syr. Limonis	ʒi.
	Aquam	ad ʒiv.

On mixing the chloral and antipyrin solutions an insoluble compound is immediately produced, either as an oily liquid, as in this case, or by varying the proportions a crystalline salt may be obtained. This was pointed out about eight years ago, and, indeed, the compound has been introduced into medicine under the name of "hypnal." The reaction was fully explained in the *Pharmaceutical Journal*, [3], **20**, p. 602.

The next communication was by Mr. George Somerville, a

Dispensing Note on Bromoform and Creosote.

A medical practitioner recently mentioned to the author that he had a difficulty in dispensing bromoform. There were three methods in use—(1) emulsification, which was unsatisfactory ; (2) giving it in capsules or pearls, but for children this answered badly ; (3) giving it in drops—this also was liable to error of overdose. After trying several plans the idea occurred of dissolving the bromoform in glycerin. A most satisfactory formula, which has stood the test of time, was found to be the following :—

Bromoform	M. 32.
Alcohol, 90 per cent.	ʒii.
Glycerin	ad ʒi.

It has been tried by several practitioners, and all express satisfaction. It has the advantage of mixing well with water, and many other drugs can be added without throwing the bromoform out of solution. Flavouring agents can also be added—an important requirement in the case of children. The foregoing remarks about bromoform apply equally in the case of creosote, and an analogous formula has been found to work satisfactorily. Glycerin is frequently prescribed along with bromoform and also with creosote in whooping-cough, phthisis, and certain types of indigestion, and there can therefore be no objection to its employment in the foregoing formula.

The next communication was by Mr. J. G. Nicholson on

Incompatible Strychnine Mixtures.

Recently the following was presented to be dispensed :—

℞	Hydrarg. Perchlor.	gr. ii.
	Potass. Iodid.	ʒiv.
	Liq. Strychninæ Hyd.	ʒii.
	Glycerini	ʒiss.
	Infus. Quassiæ	ad ʒviii.

This is an instance of the well-known double iodides of mercury and potassium acting as an alkaloidal precipitant. The difficulty was overcome by dispensing the medicine in two separate bottles. No other method is safe. It had been twice previously dispensed elsewhere—first as a cloudy mixture, and then as a clear one. How the latter result was attained was not disclosed. Incidentally, while experimenting with the mixture, an advantage possessed by the 1898 liquor strychninæ hydrochlor. over that of 1885 was observed. One drachm liquor strychninæ hydrochlor., 1885, with 1 grain hydrarg. perchlor. in 2 ounces of water shows separation of crystals in a few minutes. The same mixture with 1898 liquor strychninæ remains quite clear at the end of four days. The second instance is—

℞	Liquor Strychninæ Hydrochlor.	ʒiii.
	Elixir Saccharin	ad ʒii.

Sig. : 20 drops thrice a day.

There is an immediate precipitation in this mixture, due to decomposition of the soda saccharin compound by the strychnine hydrochloride with separation of strychnine and saccharin, and sodium chloride remains in solution. A separate experiment, omitting the saccharin, showed that the strychnine carbonate separates in small crystals, which adhere closely to the sides of the bottle. This precipitate in a concentrated solution, to be administered in drop doses, is decidedly dangerous, but when consulted the prescriber refused to make any change. An improvement might be to use 90 per cent. alcohol as a vehicle.

Mr. J. G. Nicholson then read a note on

A Pepsin Mixture.

In the *Pharmaceutical Journal* for December 10, 1898, there was a report on a pepsin mixture by Mr. Wokes, read at the Liverpool Association, in which he alleged that the pepsin forms tenacious clots, which require to be separated and rubbed down with the mixture. The author had tried the mixture with various pepsins, including the brand which Mr. Wokes thought he used, mixing the ingredients in all kinds of ways, and without in any instance finding any tendency to clotting such as Mr. Wokes referred to. The author produced a series of bottles, all of which showed the pepsin in a uniform, easily diffusible powder. So far as his experience goes, therefore, Mr. Wokes' alleged difficulty appears to have no real existence.

Mr. Rutherford Hill then exhibited a number of fresh botanical specimens illustrating the unwonted mildness and openness of the season, and also a number of specimens illustrating the winter conditions of trees. He also exhibited an abnormal orange, consisting of a double endocarp, the one inside the other, in a single pericarp.

The reading of the papers was followed by an interesting discussion, and the meeting closed with a vote of thanks to the authors.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.

The monthly meeting of the above Association was held on Wednesday evening, January 11, at the Hotel Métropole, Newcastle-on-Tyne. There was a moderate attendance. In the absence of the President, Mr. W. Kerse presided. After the minutes of the previous meeting had been confirmed and adopted, the election of Secretary was proceeded with. This was rendered necessary on account of Mr. G. F. Merson, F.C.S., having resigned. Ultimately, Mr. F. Gilderdale, F.C.S., 19, Great Market, Newcastle-on-Tyne, was appointed to act until the end of the session. A hearty vote of thanks was accorded to Mr. Merson for the excellent work he had rendered to the Society in the past, and Mr. Merson, in reply, signified his intention to help forward the Society's interests in the future.

Mr. Gilderdale, F.C.S., then read a very instructive paper on the

Relative Values of First and Second Biennial Henbane Leaves.

Having explained that his attention had been drawn to this subject by the fact that the last season's crop of second biennial henbane was not up to the average as regards the yield, which had caused extreme prices to be asked for these plants and their respective preparations, whereas the first year's plants, which are not official, could be had at considerably less cost, led him to chemically examine these plants to see what alkaloidal and other differences existed. Mr. Gilderdale first of all gave a very graphic and lucid description of their botanical differences, drew attention to the different opinions held by the

older botanists as to the duration of henbane, sketched the history of these plants and showed the gradual way the second year's biennial plant became to be recognised as possessing greater virtues than the leaves of the first year's plant, reminded those present that up to 1890 no attempt had been made to determine with accuracy their relative merits until Mr. A. W. Gerrard read a very interesting and instructive paper before the British Pharmaceutical Conference at Leeds, which he supplemented by another paper the following year before the same Society at Cardiff. After referring to other articles and works on the same subject, Mr. Gilderdale put before the meeting his results, which showed that although the first year's leaves do not contain as much extractive matter as the leaves and tops of the second year's plant, they do contain as much alkaloid, and in many instances slightly more. Samples of tinctures, extracts, etc., made from both these plants were on the table for comparison and inspection, as well as samples of the plants, photographs, diagrams, etc.

The paper was listened to with much interest, and a good discussion followed, in which Messrs. Merson, Pittuck, Buckley, Kerse, Dudderidge, and Pescod took part.

A vote of thanks was accorded to Mr. Gilderdale for his paper, and he was asked to put before them at some future time the results of his further examinations.

Mr. Dowthwaite, chemist, Prudhoe-on-Tyne, was elected a member of the Society.

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACTS.

PHARMACEUTICAL SOCIETY *v.* ROBINSON.

At the Bradford County Court on Tuesday, before His Honour Judge Bompas, Q.C., and a jury, the Council of the Pharmaceutical Society of Great Britain brought an action against James Robinson, herbalist, 54, Barkerend Road, Bradford, for the recovery of two penalties of £5, alleged to be due for breaches of the Pharmacy Act, 1868. Mr. R. E. Vaughan Williams, of London (instructed by Messrs. Flux, Thompson and Flux, of London), appeared for the Pharmaceutical Society, and Mr. James Freeman represented the defendant.

Mr. Vaughan Williams asked His Honour to allow him to amend the particulars in regard to the second plaint. The first plaint charged the defendant with having, on October 29, 1898, sold or kept open shop for the retailing, dispensing, or compounding of a poison, to wit, opium, or a preparation of opium contained in and forming part of the ingredients of a compound known as paregoric elixir, contrary to the provisions of the Pharmacy Act, 1868. The second plaint was for a penalty for the sale of paregoric elixir on a subsequent date. But upon analysis of the second sample it was discovered that it contained no poison. Consequently it was desired to amend the plaint, and they now asked for a penalty in respect of another part of the same section, which made it an offence to compound medicines of the British Pharmacopœia unless they were made up according to the formularies of that Pharmacopœia. The other side had had due notice of the proposal to amend.

His Honour having allowed the plaint to be amended,

Mr. Williams, after drawing attention to the reasons why the Pharmacy Act was passed, pointed out that Parliament had thought fit to entrust the enforcement of the Act to the Pharmaceutical Society, and that it was the only society which could take proceedings under this Statute. The Society employed persons to see that the Act was being enforced. On October 29, Arthur Foulds was sent to Bradford for that purpose, and in consequence of instructions, he went to the defendant's shop and there purchased some castor oil and sixpennyworth of paregoric elixir. On November 19, he went again, and made another purchase of paregoric. He paid the second visit because long experience had taught the Society that it was desirable, in the interests of justice, not to rely upon a single instance. The two bottles were sent to the Registrar of the Society, and afterwards submitted to a distinguished analyst. On analysing the contents of the bottle purchased on October 29, he found nearly 2½ grains of opium. The solicitors to the Society were then instructed to write to the defendant, informing him that he had committed two breaches of the law, and stating the penalties which he had thus rendered himself liable to. He might say that the bottle purchased on November 19 was not at first analysed, because it was not thought necessary to incur the expense. But in answer to their letter the solicitors to the Society got a letter from Mr. Freeman, stating that the mixture sold to Mr. Foulds did not contain either opium or any other poison, and that the Bradford City Analyst had analysed a quantity, and had certified that it was absolutely free from opium. Mr. Eastes, who had analysed the sample first purchased, then analysed the second sample, and found it to be free from opium. It then occurred to the Society that if the second sample was sold as a medicine of the Pharmacopœia, and did not contain poison, another offence had been committed.

Arthur Foulds, inquiry agent, Manchester, spoke as to making the purchases. He took his own bottles, and asked for paregoric elixir. Defendant labelled the bottles "Paregoric Elixir" and "Poison." He sealed the bottles, and afterwards handed them to Mr. Moon, clerk to the Registrar of the Society.

Harry Moon produced the authority of the Council of the Society to proceed for the recovery of the penalties. He said he handed the bottles given to him by Mr. Foulds to Mr. Eastes.

Ernest John Eastes, analyst, London, ex-demonstrator in practical chemistry to the Pharmaceutical Society, said he analysed the contents of the bottle produced, which was handed to him by Mr. Moon on November 3. It contained 1¼ oz. of paregoric. It was fairly well up to the standard of genuine paregoric. There was the equivalent of about 2½ grs. of opium in it. He afterwards received another bottle (produced) from Mr. Moon. The liquid it contained was considerably darker in colour than that in the first bottle, and weighed 1¾ oz. He applied all the known tests, but was unable to find any traces of opium, though all the other ingredients of paregoric were present. Opium being absent, he would have expected the second sample to be lighter in colour than the first, and from its appearance he judged that some colouring matter, such as burnt sugar, had been introduced.

Cross-examined by Mr. Freeman, witness said he had known analysts to disagree, but he could not possibly see how the result of the analysis made by Mr. Richardson could be different from the result obtained by him on analysing the first sample, if both samples were taken from the same bottle, the method of ascertaining whether opium was present or not being so clear and definite.

For the defence it was contended that neither of the samples sold to Mr. Foulds contained poison. It was further contended that the mixture was not sold as genuine paregoric, which should contain opium, but as "paregoric substitute."

The defendant went into the witness box, and said he bought the mixture from Brook, Parker and Co., of Bradford, as "Paregoric without Poison." He had never sold any mixture containing poison, and he had been in business for sixteen or seventeen years. Defendant also swore that he sold Mr. Foulds 2 oz. on each occasion, and that he told the latter it was "Paregoric substitute." He only had one bottle of paregoric, and he served Mr. Foulds from it on both occasions.

The bottle was produced. It bore two labels, one "Paregoric elixir" and the other "Paregoric substitute."

Cross-examined by Mr. Williams, defendant said the part of the bottle bearing the label "Paregoric substitute" generally faced the wall in his shop. Asked why he labelled Mr. Foulds' bottles "Poison," he at first said he did it as a precaution, but on Mr. Williams pointing out that there was no need for precaution if the mixture did not contain poison, he said he could only say that he did it in mistake.

Mr. F. W. Richardson, City Analyst, Bradford, said he analysed a quantity of "paregoric" which was taken to him by the defendant, and was unable to find any trace of opium in it.

Cross-examined by Mr. Williams, he said he had no evidence to show that the liquid he analysed came from the same bottle as the first sample which Mr. Eastes analysed. After Mr. Eastes' evidence he could not doubt that there was opium in the first sample which that gentleman analysed.

His Honour held that to recover the penalty in the second plaint it must be shown that the defendant compounded the mixture which was sold by him. Compounding meant something more than mere selling or retailing, it meant some form of manufacturing, and there had been no evidence whatever to show that the defendant had done this. He did not know that it was necessary for him to decide exactly what compounding meant. He should think it would not be confined literally to the mixing of two medicine togethers. He thought it must be taken in the wider sense of making or manufacturing. The only doubt that was in his mind was whether a man having a

mixed medicine in his shop was *prima facie* evidence that he had mixed it himself. He did not see how, according to the ordinary rules of evidence, without something more, the mere having a thing was evidence that one had compounded it. Perhaps he was wrong in dealing with that question first. The defendant would have gone into the witness-box on the first part, and then he might have been asked, but His Honour did not see himself that there was any evidence there of medicines having been compounded other than according to the formularies of the Pharmacopœia. One of the grounds he had for saying that compounding was making, was based on the words "according to the formularies of that Pharmacopœia." He understood that the formularies of the Pharmacopœia described the manufacturing of medicines, and he understood, therefore, that compounding was a word used in the sense of manufacturing in regard to medicines. With reference to the other plaint, they had in the two phials produced by Mr. Eastes something very like proof that defendant was mistaken when he said that both samples were sold out of the same bottle. He asked the jury to answer the following questions: (1) Did the liquid sold by the defendant on October 29 contain opium? (2) Was the liquid sold by the defendant on November 19 free from opium (and both sides agreed that it was)? (3) Was the liquid sold by defendant on November 19 sold as paregoric elixir?

The jury gave an answer in the affirmative to each question, and His Honour then entered judgment for £5 on the first plaint.

Mr. Williams asked leave to appeal against His Honour's interpretation of the word "compound." He said the point involved was one of great public interest.

Mr. Freeman objected to leave being given, on the ground that his client was not in a position to bear the costs of an appeal.

After some discussion His Honour gave leave to appeal, on condition that the appellants would undertake to pay the respondent's taxed costs in the event of the appeal being successful.

PHARMACEUTICAL SOCIETY *v.* S. GRAHAM.

When this case (which stood for trial at the Liverpool County Court on the 16th inst.) was called on, the defendant, an unqualified assistant, appeared in person, and stated that he had that morning confessed judgment formally, and making an offer for payment of the amount of penalty and costs by instalments.

The defendant was examined as to his means by Mr. C. W. Langley Flux (representing the Society), and the Registrar entered judgment for the Society with costs, and making an increased order in respect of the amount of the instalments.

PHARMACEUTICAL SOCIETY *v.* J. AUSTIN.

In this case, which was tried before His Honour Judge Shortt at the County Court, Great Grimsby, on August 2 last, and reported in the Journal of August 6 last, the defendant not having paid any instalments into Court as arranged, proceedings by way of execution became instituted, and his wife claiming the goods seized, an interpleader summons was issued, and was tried before His Honour on the 17th inst.

Mr. C. W. Langley Flux represented the Society, and the claimant was represented by Mr. Mason, solicitor, Grimsby.

After hearing the evidence, and the claimant having produced receipts for the goods seized, His Honour gave judgment in her favour.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

AS I BEGIN MY LETTER the (Victorian) Poisons Amendment Bill is being discussed in the Legislative Assembly, and judging by the progress so far, there seems to be good grounds for anticipating that if pharmacists will not get all they want, the measure when passed will be on somewhat more liberal lines than those to which the Government proposed to confine their proposals. In my next I hope to report considerable progress with the Bill, if not to give you an actual copy of it as adopted.

THE DENTISTS' AMENDING BILL (VICTORIA) has also been introduced into the Legislative Council, and read a first time. I enclose a copy herewith for your perusal, but, so far as I can see, the only portion that is of special interest to you in England is Section 8, which reads as follows:—Any person who has attained the age of twenty-one years, and who (*a*) is registered or is entitled to be registered in the United Kingdom, in accordance with the law for the time being in force therein, as a dentist or medical practitioner, or (*b*) is entitled, pursuant to the express provisions of this or the Principal Act, to be registered as a dentist, or (*c*) has gone through such course of study and professional practice and training and passed such examinations before the Dental Board or examiners appointed by the Dental Board, and has obtained from the Dental Board such certificate of fitness or diploma to practise dental surgery or dentistry as the said Board, by regulations approved by the Governor in Council has prescribed, shall be entitled to be registered as a dentist.

THE DEATH, ON NOVEMBER 8, of Mr. Joseph Bosisto, C.M.G., has removed from amongst us one who has for nearly half a century occupied a leading position in Victorian pharmacy, and, to whom, indeed, Victorian pharmacists of the present day owe much of the privileges they now enjoy. Born in Yorkshire, and educated at the Leeds School of Medicine, Mr. Bosisto came out to Adelaide (S.A.), in 1848, and proceeding from thence to Melbourne, settled down in the suburb of Richmond, where he established himself in a large and profitable business. Mr. Bosisto took an active interest in the formation of the Pharmaceutical Society, and when it was inaugurated on February 16, 1857, was elected Vice-President. In December, 1874, Mr. Bosisto, who had from his first appearance in Victoria taken an active interest in municipal affairs, was elected a member of the Legislative Assembly of Victoria, and held his seat continuously until 1889. In the year 1876 he was greatly instrumental in securing the passing of the Pharmacy Bill, and in 1879 succeeded in obtaining the exemption of registered pharmaceutical chemists from serving on juries. Mr. Bosisto was nominated by the Government as the first President of the Pharmacy Board, which position he occupied for six years; held the position of examiner in materia medica at the Melbourne College of Pharmacy during the past eighteen years; and in 1887 was elected an honorary member of the Pharmaceutical Society of Great Britain. Among many other important positions held by him was that of Chairman of the Victorian Commission at the Indian and Colonial Exhibition in London in 1886, for his services on which occasion he was created a Companion of the Order of St. Michael and St. George. Mr. Bosisto was one of the first in Australia to turn to commercial account the extraction of the essential oil of the eucalyptus, and his many contributions to medical and scientific journals in connection with this subject will be familiar to most of your readers. Privately, Mr. Bosisto was greatly esteemed as a genial, unassuming gentleman.

IN REFERRING TO MR. BOSISTO'S DEATH, at a meeting of the Pharmaceutical Society of Australasia, the President (Mr. Wm. Witt) stated that of the number who had attended the inaugural meeting of the Society on February 16, 1857, the only survivors were, in addition to himself, Messrs. C. R. Blackett, J. T. Thomas, E. Walton, Wm. Bowen, J. W. Don, and J. B. French. Needless to say, resolutions expressing esteem and regret have been unanimously passed by both the Pharmacy Board and the Pharmaceutical Society.

FROM NEW ZEALAND we have the gratifying news that after efforts extending over some nine or ten years, a Pharmacy Bill which, if not an ideal one, is at least a moderately satisfactory one, has at length been placed on the Statutes, to become operative on January 1, 1899. While in Victoria the Pharmacy Board and the Pharmaceutical Society are, theoretically at least, quite distinct bodies, the New Zealand Act provides for the incorporation of registered pharmaceutical chemists under the name of the Pharmaceutical Society of New Zealand, and that the affairs of such society shall be managed and controlled by a board, to be elected under certain provisions.

THE PHARMACEUTICAL SOCIETY OF SOUTH AUSTRALIA has not only a chemist but an artist for its president, and the announcement that Mr. J. White's latest efforts, "In the Land of the Saltbush," has been secured by the S.A. Fine Arts Committee, appointed to select pictures for the formation of a purely South Australian National Art Gallery, under the Elder bequest, is gratifying not only to his own immediate friends, but to Australasian pharmacists as a class.

LETTERS TO THE EDITOR.

The Adoption of Poison Regulations.

Sir,—Now that we are on the subject of the proper storage of poisons, allow me to suggest a method which I have adopted for poisonous liquids for some time now, and found to answer very well. In each bottle containing a liquid poison put a glass marble, then when the poisonous liquid is poured out, a rattling on the side of the bottle gives a warning which is again repeated when the bottle is placed upright. Of course the bottle must never be kept much more than half full, or they will not be tilted sufficiently to cause the marble to roll.

313, Sydenham Road, S.E., January 6, 1899. A. W. Nunn.

Sir,—A useful addition to the regulations proposed and about to be adopted, would be that a "toxicological chart," showing at a glance the symptoms and treatment in poisoning cases, etc., until arrival of medical man, should be hung up in every pharmacy. Works of reference are as a rule a scarce commodity in most shops.

January 6, 1899. Toxic (164/2).

Sir,—After reading the report of the special general meeting of the Pharmaceutical Society in the current number of the Journal, I wish to ask you to allow me to make a brief comment thereon. I shall confine my remarks to the resolution which was passed as No. 3, page 44, relating to "the dispensing and selling of poisons." It is recommended that all "liniments, embrocations, and solutions containing poisons be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each bottle . . . a label giving notice that the contents are not to be taken internally." Truly this is a masterpiece, for how in the name of commonsense and everyday experience can it be expected that the general public can be trusted to recognise by touch bottles containing poison? Are they to be asked to attend classes for instruction, or will professors be appointed to lecture and demonstrate on the subject? For the wording of this resolution presupposes that each and all must be familiar with these conditions. The chairman observed that the subject for which the meeting had been convened was "one which had been before the Society for something like thirty years." In the first place, it is absolutely necessary that the "ordinary medicine bottle" should be exactly and officially defined by the Society. Question: Does a really "ordinary" one actually exist? I doubt it. What is the use of any number of labels and "particular instructions" on the bottle, if the person who has charge of it is illiterate, or perhaps cannot read at all? Why, has it not occurred to the learned gentlemen who sit in the conclave and deliberate so profoundly to advise the simple expedient and precaution that some sign or warning shall be always prominently affixed to each article dispensed by the chemist which contains a poison. When a wrapper is placed over the bottle how easy it would be to stick a red poison label or warning notice outside so that the dangerous nature of its contents would be at once recognised. It often happens in the hurry of the moment in administering a dose of medicine that only the paper covering the neck of the bottle is torn off, without any notice being taken of the directions underneath. Surely simple precautions are practical, and can be easily tested without any of the risks which must obviously be incurred in trying to distinguish different varieties of medicine bottles by sense of touch. The great importance of this subject will, I trust, be accepted as a reasonable excuse for trespassing so greatly on your valuable space.

January 17, 1899. Ex Fidi Fortis (165,38).

The Qualification of Dispensers.

Sir,—The lamentable dispensing mistake made by a dispenser in a doctor's surgery near Stockport again brings home the importance of dealing with the subject of the dispensing of poisons by unqualified persons. The accident referred to was, of course, that in which the doctor's dispenser put 50 grains of morphine in an 8-oz. mixture, and directed two tablespoonfuls to be taken. If dispensing of poison by unqualified men constitutes a public danger—and the existence of the Pharmacy Act proves that our legislators are of this opinion—accidents of the kind, more or less serious, must, by the very nature of things, be expected. That so typical a case should come before the public notice is, however, remarkable, and it behoves chemists to see that the circumstances receive the fullest attention by the proper authorities, with a view to an inquiry as to the efficacy of the present poison laws, and, if necessary, such an amendment of them as would ensure that, whether poisons are dispensed in doctors' surgeries or chemists' shops, they would be dispensed under the direct supervision of a qualified man. I enclose copy of a letter which I have addressed to the Privy Council, and which speaks for itself. The meeting of the Pharmaceutical Council referred to in the report (B) was the meeting at which the following resolution sent by the Chemists' Assistants' Union was considered:—

> "That the attention of the Pharmaceutical Society be respectfully drawn to the practice of dispensing poisons by unqualified persons in doctors' surgeries, and that they be urged to take every possible step to minimise the evil."

During the discussion several prominent members of the Council stated that they did not understand the resolution. If it referred to open surgeries, the Pharmaceutical Council, they stated, were doing all that was possible. If it did not refer to open surgeries, Mr. Carteighe explained that those who drew up the resolution ought to have known that the Council had no power to deal with the matter. In the face of the treatment this resolution received, I felt it would be wasting valuable time to communicate with the Pharmaceutical Society before writing to the Privy Council. The matter is an exceedingly grave one, and I think the time is quite ripe for concerted action in the matter by chemists generally. We are told that the Government will certainly deal with the poisons question at an early date. The occasion is, therefore, a particularly opportune one. Should not letters be sent by every chemist to the Privy Council and the Pharmaceutical Society urging the immediate remedying of this evil?

Aveley, Essex, January 18, 1899. W. S. Glyn-Jones.

[Enclosure.]

Aveley, Essex,
January 17, 1899.

To the Clerk of the Privy Council.

Sir,—Though the Poisonous Substances Bill, 1898, was withdrawn, it is understood that the Government intend dealing with the laws affecting the sale and distribution of poisons. I respectfully suggest that the existing conditions under which poisons are dispensed in this country require immediate and serious attention. The Pharmacy Act of 1868 requires that those who keep "open shop" for the sale and dispensing of poisons shall be legally qualified—indeed, it insists upon the qualification of the actual seller of a scheduled poison. It would appear, however, that the law requires no qualification of any kind from the thousands of persons engaged in dispensing poisons in doctors' surgeries and dispensaries, unless the surgery or dispensary is kept as an "open shop." It is comparatively the few and well-to-do who are attended by doctors who write prescriptions but do not dispense their own medicines. In these cases the prescription is taken to a chemist to be dispensed, and the Pharmacy Act protects the patient by requiring that, when scheduled poisons are included, the dispensing must be done under the direct supervision of a qualified chemist. Still further protection will be afforded those whose medicines are made up at chemists' shops by the regulations passed at the recent meeting of the Pharmaceutical Society, which have been submitted to the Privy Council for approval. These regulations will afford no protection whatever to those whose medicines are dispensed in doctors' surgeries. At least three-quarters of the medicines taken in this country are dispensed in doctors' dispensaries without any legal restriction as to the qualification of the dispenser or regulation as to the mode of dispensing. The danger to the public is exceedingly great, and is clearly shown by the enclosed report (A) of an inquest held at Heaton Norris on January 9. The reported evidence makes it apparent that the accident was as much attributable to the ignorance as to the carelessness of the dispenser. It may be argued that an isolated case does not prove that such occurrences are common, but the facilities possessed by a doctor afford such a strong temptation to prevent an inquiry, by giving a certificate of death, that it is a wonder that any case should be made public. The numerous advertisements in the *Lancet* and *British Medical Journal*, in which doctors stipulate that they require unqualified men to dispense for them, show that the practice is very general. It is an anomaly that the law should hedge round with proper restrictions the selling of a penny-

worth of oxalic acid, and yet permit the dispensing of the most poisonous and dangerous medicines by unqualified and utterly incompetent persons. The enclosed report (B) of the meeting of the Council of the Pharmaceutical Society, held in November last, shows that that body has had its attention drawn to the subject. It appears from this report that the Pharmacy Acts afford no remedy for this state of things. If this be so, I respectfully suggest that, in the interests of the public safety, the poison laws urgently need amendment. If it would not be expedient to prevent (as on the Continent) doctors dispensing their own prescriptions, it should be easy to enact that the assistants employed by doctors to dispense should be either legally qualified chemists or doctors.

W. S. GLYN-JONES,
Member of the Pharmaceutical Society.

BOTTLES FOR METRIC PRESCRIPTIONS.

Sir,—A medical friend wishes to prescribe in metric terms, and wants to know what will be the most convenient sizes of mixture bottles to stock and what the most simple series of doses to calculate in. But I am in doubt as to what should be the answer. I have been thinking in this way: It is evident the sizes of the bottles will depend entirely upon the series of doses he decides to adopt. At present a series of four doses is generally adopted—teaspoon, dessertspoon, tablespoon, and two tablespoons (℥j., ℥ij., ℥iv., ℥j.). I will call them the extra small, the small, the medium, and the large dose. If the prescriber adopts 30 C.c. as his usual large dose, he will want to stock bottles holding 45, 60, 90, 120, 180, 240, 300, 360, 480, and 600 C.c. respectively. What seems at first sight the most appropriate sizes for a decimal system would be a set of bottles holding 50, 75, 100, 150, 200, 250, 300, 400, and 500 C.c. respectively, but in this case 25 C.c. would have to be selected as the large dose (neither 30 nor 40 would do), and this in mixtures containing much saline matter would often not be large enough. The medium dose also would be 12½ C.c., which is not only small, but is an awkward number to use, besides which it is not sufficiently removed from the small and extra small doses. 40 C.c. might be adopted as the large dose, and the medium dose would be 20 C.c. In this case mixtures would have to be made up to 80, 120, 160, 200, 240, 320, 400, and 480 C.c. respectively. But probably 40 C.c. would be considered too large a dose in general, and 20 C.c. is too large for a medium dose. Of course, a prescriber may give 40, 30, 25, 20, 16, 15, 12½, 10, 8, 5, or 4 C.c. for a dose, but he is not likely to play the tune upon so many, he will probably select a quartette and stick to that for general use. The only practicable quantities for the extra small and small doses would seem to be 5 C.c. and 10 C.c., and as far as I can see the most convenient series to adopt will be 5, 10, 15, and 30 C.c. (with bottles in accordance); the 5 and 10 C.c. will more nearly represent the modern teaspoon and dessertspoon than do the ℥i. and ℥ij. The 15 and 30 C.c. have the advantage of being very nearly the same as the present ℥ss. and ℥i., and may just as safely be translated tablespoon and two tablespoons. The only apparent flaw in this series is that the tablespoon would be assumed to be only 1½ dessertspoons, instead of 2, as in the present system, but if this errs at all, it errs on the safe side, and of course all difficulty may be avoided by directing 1/3rd, 1/4th, 1/6th, 1/8th, 1/10th, 1/12th, 1/16th, or 1/20th part to be taken according to the size of bottle. One more thought suggests itself. Would it not simplify matters by speaking in terms of Centilitres rather than in Cub.c.? This would make the numbers smaller; we should then have, say, ½, 1, 1½, 3, 4½, 6, 9, 12, 18, 24, 30, 36, 48, and 60 Centilitres. This is a question that has probably not been considered by very many, and if you could publish some definite instructions upon the subject it might be of great service to many in securing uniformity.

January 12, 1899. DOUBTFUL (22/5).

OL. RICINI AND B.P. TESTS.

Sir,—Having recently had occasion to test a sample of "Finest Tasteless Italian Castor Oil" which was offered at a rather low price, I tried also other samples taken from bulk, both Indian and Italian, and was surprised to find that all of them gave a brown colour with carbon bisulph. and ac. sulph. Wholesale firms with whom I have corresponded agree that there is no castor oil obtainable which does not give this colour, whilst one firm adds that their oil which was tried "is prepared under our own supervision from specially selected seeds." The test with petroleum spirit appears to be affected by a very slight difference in temperature, and the oil is not soluble in 5 vol. 60 per cent. alcohol under 60° F. I do not know who is responsible for introducing the sulphuric acid test into the B.P., but it appears clear that it cannot have been fairly tried before insertion.

Kettering, January 12, 1899. J. F. THURSFIELD.

MUTUAL DEFENCE AGAINST ANALYSTS.

Sir,—From the great and constant interest you take in matters of importance to chemists, I trust you will publish this letter of mine, which may be a means to an end in ameliorating a very unhappy state of things existing. Since the Food and Drugs Act has been in operation very great energy has been expended by inspectors and analysts particularly directed against chemists. Often through want of technical knowledge and perhaps carelessness, the chemist is summoned, fined, and made miserable by having to appear in a police court, and I will venture to say, in the majority of cases, without the slightest intention to defraud or adulterate. Without going into such technical vexatious prosecutions as Gregory's powder, syrup tolu, tr. of actæ racemosa, tr. senna, and liq. calcis, as well as many more items, he is now attacked by ol. eucalyptus. Admitted the B.P. of 1898 says *E. globulus* is "official," it certainly says, "and other species of the plant"; and when we read in Squire's 'Companion to the B.P. of 1885,' it refers to the oils as a class, and goes on to say, "but it must be borne in mind that, if the original reputation of eucalypt. oil was not actually gained by *E. amygdalina*, this was for many years the most esteemed variety." And for selling this to the inspector the chemist is fined. Is it not a crying anomaly? I am not going into the legality of the business, but only the equity. Now my suggestion is this: Let the chemists combine and subscribe to a mutual "defence" fund to fight these energetic nuisances, and I venture to say half the prosecutions will not be repeated. I do not wish in any way to interfere with technical societies or even trade ones. This is unique to itself, and those who combine for a yearly subscription would have the benefit of proper and educated counsel to defend them in time of need. In the town in which I live a "dairyman's" association has been formed on such lines, and with such good results that there has scarcely been a successful prosecution since the commencement. The story of the bundle of sticks is "Union is strength." If this will provoke public opinion my end will be achieved, and I should be glad to co-operate or take an initiative in same.

January 16, 1899. X. Y. Z. (165/15).

THE APOTHECARIES' ASSISTANTS' CERTIFICATE.

Sir,—This is to give notice to all whom it may concern that any person acting as an assistant to an apothecary in the compounding and dispensing of medicines, unless he is the possessor of the Apothecaries' Assistants' certificate, is liable to a penalty of £5 (any person acting as assistant to any other medical man in the compounding and dispensing of medicines requires to be qualified as a good groom, gardener, or housekeeper). I am the proud possessor of this certificate, and I know how to use it. I have studied the Pharmacy Act, and I find that the 1869 amendment of the Act exempts medical men and veterinary surgeons in the dispensing of medicines for animals under their care from the provisions of the first fifteen sections of the Act. Unfortunately, it does not exempt their assistants. Being a personal qualification that the Act requires, this applies to the chemist and medical man's assistant with equal force. I cannot sell nor dispense medicines because my certificate states that I must not act as an apothecary, so that if I sold or dispensed medicines I should be acting as an apothecary and infringing Section 3 of the 1869 amendment to the Pharmacy Act. This section states that a legally qualified practitioner is exempt from the provisions of Section 17 of the Act, providing the medicines dispensed be distinctly labelled with the name and address of the seller. You see I am only the assistant, not the seller, and my master is far too conscientious to allow me to hand it over to the purchaser, except under his own personal supervision. If I should unfortunately lose my situation I shall apply to some hospital or Board of Guardians which accepts this valuable certificate. In fact, so anxious are they for you to have it that in some instances they will engage you without any qualification whatever, and pay you a salary until you can obtain it. You thus get grand opportunities to practise amateur dispensing of medicines and poisons for the great British public, which pays your expenses and takes all the risk. I am not the seller—oh, dear no. The public find the cash, the authorities purchase the medicines, etc.,

and I give them away. You see if they were to engage a chemist to dispense, they would have to pay him a salary that would, perhaps, help to recoup him for the expenditure of time, money and labour, which the Government compels every man to expend before he can lawfully dispense poisons. This would leave so much less to expend in charitable objects, so they prefer to take the cheaper article, and employ an

January 16, 1899. Apothecaries' Assistant (165/16).

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials or pseudonym. Replies will, in all cases, be referred to such initials or pseudonyms, and the registered number added in each instance should be quoted in any subsequent communication on the same subject.*

Preliminary Examination.—No such information is furnished to unsuccessful candidates [*Reply to* Cymro.—22/9.]

Composition of Powder.—It appears to consist chiefly of acetanilide. [*Reply to* W. H. H.—22/10.]

Carpospores.—The name is applied to sexually-produced spores, such as are found in the red seaweed, and from which new individuals are produced. [*Reply to* Aro.—22/8.]

Bonson's Digestive Tea.—Several correspondents write to say that this tea can be procured from Messrs. S. Harvey and Co., Foster Street, Walsall, and one adds that the article gives great satisfaction to customers. [*Reply to* J. H. S.—22/4.]

Suggestions for Improvement.—Any practical suggestions will always be gladly welcomed, but what is the use of writing to inform us that "the spirit of the age undoubtedly is utilitarian and democratic"? If the Irish Society is "cramped with narrowness," a statement of which we doubt the accuracy, surely the fault rests with yourself and other licentiates. [*Reply to* S. H.—165/3.]

Microscopy and Bacteriology.—The best place to study bacteriology in London is the Jenner Institute, Grosvenor Road, S.W. Write to the Secretary for particulars of the classes and laboratory courses. If you should require any special training in the use of the microscope other than you will gain there, you might with advantage join the class in practical microscopy at the Birkbeck Institution, Chancery Lane. [*Reply to* D. S.—22/12.]

Glycerin Suppositories.—If you had carefully perused the columns of the Journal as an adjunct to your academic studies your experience with the prescription sent would have been more satisfactory. In the Review of Current Work of the *P.J.*, Nov. 12 last, p. 505, there is a translated abstract from a paper in the *Répertoire de Pharmacie*, dealing with glycerin suppositories and pessaries, showing how tannin may be introduced without producing the thick precipitate of gelatin tannate which bothered you. [*Reply to* Student.—22/7.]

Coloured Bottles for Children's Medicine.—In response to your query as to where "a pretty coloured (pink) 2-ounce bottle for children" can be procured, inquiries made in the most likely quarters have so far proved fruitless. We are placing your query under the head of "Information Wanted," but doubt whether you will procure what you want unless you order a large quantity to be made specially. [*Reply to* A. M.—22/11.]

Petroleum Emulsion with Hypophosphites.—The amount of hypophosphites you name, 33 per cent., cannot be dissolved in the emulsion, but must be suspended. First make an emulsion of petroleum thus: Liquid paraffin, B.P., 24; powdered gum acacia, 6; powdered gum tragacanth, 2; tincture of quillaia, 2 fluid parts. Rub down smooth, then add at once water, 16. Then rub down until an emulsion results. Take calcium hypophosphite, 1, and sodium hypophosphite, 1; rub them to a very fine powder. Then gradually add petroleum emulsion as above and mix thoroughly. [*Reply to* A. M. W.—21/27.]

Compressed Tablets.—The articles on making compressed tablets appeared in the *Pharmaceutical Journal* for October 26 and November 2, 1895. [*Reply to* C. P. T.—22/15.]

Fungus on Rotten Wood.—It is rather late for it to be found, but the same remark applies to everything in the botanical world this season. [*Reply to* A. W. H.—22/16.]

Conf. Rosæ Gallicæ as an Excipient.—It is quite compatible in the case you mention, though confection of hips would not be so. [*Reply to* Veritas.—22/13.]

DISPENSING PROBLEMS AND NOTES.

Precipitation of Quinine.

Sir,—I should be glad if you can tell me if it is possible to dispense the following prescription as a clear mixture:—

℞	Potassii Iodidi	Gr. xx
	Hydrargyri Perchloridi	Gr. ¼.
	Quininæ Sulphatis	Gr. iv.
	Acidi Sulphurici diluti	M. iv.
	Aquam ad	ʒ iii.

I have tried it several ways, both with the addition of simple syrup and without, but a white precipitate is always formed.

Student (22/3).

Note.—The potassium iodide and mercuric chloride in the prescription react to form potassio-mercuric iodide. A solution of this double salt made with certain proportions of the two salts constitutes Mayer's reagent, a reagent which is used to detect alkaloids, because it forms a distinct precipitate in very dilute solutions of these bodies. It is obvious, therefore, that the addition of the quinine to the mixture will result in the production of a precipitate such as you have observed. This cannot be prevented by any practicable means, so that the quinine must be omitted by the prescriber. The composition of such precipitates is that of a double iodide of mercury and alkaloid; they are, therefore, dangerous, on account of the mercury they contain, and especially so when they are obtained from poisonous alkaloids like strychnine.

Liq. Strychninæ B.P.

Sir,—I made 40 oz. of liq. strychninæ B.P. the other day. How is the strychnine to be dissolved if the solution is made according to the directions given? Ludensian (21/31).

Note.—We do not see any difficulty in dissolving the strychnine hydrochloride. Since this salt is soluble in 35 parts of water or 60 parts of alcohol (90 per cent.), the quantities of these fluids in the official formula for liquor strychninæ hydrochloridi are amply sufficient for the purpose. You will have noticed, of course, that strychnine *hydrochloride* and not the free alkaloid strychnine (which is much less soluble) is now directed to be used.

INFORMATION WANTED.

Cassarite.—An article bearing the name of "Cassarie" is made by a firm called Beardall and Metcalf. The address of the firm is required.—(J. A.—21/16.)

Stains.—Particulars are wanted regarding the composition of Stirling's aniline gentian violet stain and Austin's fuchsine stain Can any reader oblige?—(X. S.—21/17.)

Posological Table.—Where, and at what price, can a posological table be had, mounted on cloth, with rollers, and varnished? It should be very complete, giving doses of all new synthetic remedies and out-of-the-way articles, including old-fashioned drugs.—(Toxic.—21/33.)

Coloured Vials.—Where can I get a pretty 2-ounce bottle for children's medicine? Amber and blue are not suitable colours; pink would be preferable.—(A. M.—22/11.)

CORRECTION.

Special General Meeting.—Mr. W. J. Barnes, of Dover, asks us to state that the remarks attributed to Mr. Hambrook, at p. 42, ought to have been credited to himself.

ROYAL COLLEGE OF SURGEONS LIBRARY 27 JAN 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Determination of Formaldehyde.

Blank and Finkenbeiner recommend the oxidation of formaldehyde with hydrogen peroxide, and titration of the formic acid produced as a suitable mode of determination. A weighed quantity of the solution (3 grammes) is mixed with 25 C.c. double normal solution of caustic soda in a tall flask, 50 C.c. of hydrogen peroxide (2·5 to 3 per cent.) is added gradually through a funnel, and after two or three minutes the filter is washed down with water and the remaining soda titrated with double normal sulphuric acid, litmus being used as indicator. In operating with solutions containing less than 30 per cent. of formaldehyde, completion of the reaction requires ten minutes to be allowed. The hydrogen peroxide must be tested as to acidity, and a corresponding correction applied, and in cases requiring great accuracy the water used must be free from carbonic acid. The percentage of formaldehyde is obtained by multiplying the number of C.c. soda solution used by 2 when 3 grammes of solution are taken, or by 6 when 1 gramme of solid formaldehyde is taken. The reaction takes place with considerable evolution of heat and frothing, according to the following equation :—

$$\left.\begin{matrix} 2H\cdot CHO \\ 2NaOH \\ H_2O_2 \end{matrix}\right\} = \left\{\begin{matrix} 2H\cdot COONa \\ H_2 \\ 2H_2O \end{matrix}\right.$$

and possibly also according to the equation—

$$\left.\begin{matrix} H\cdot CHO \\ NaOH \\ H_2O_2 \end{matrix}\right\} = \left\{\begin{matrix} H\cdot COONa \\ \\ 2H_2O \end{matrix}\right.$$

The same method was tried with other aldehydes, but generally the reaction was very slow.—*Berichte*, 31, 2979.

Species in Plants.

In an interesting address as President of the Botanical Section at the recent meeting of the American Association for the Advancement of Science, Professor W. G. Farlow gave a sketch of the changes which have taken place during recent years in the conception of species, taking his illustrations chiefly from the group of fungi. He laid stress on the fact that theoretical considerations with regard to evolution now play a much less important part than they did when the Darwinian hypothesis first came to be generally accepted. The best systematist, he said, is not he who attempts to make his species conform to what he believes to be the ideal of nature, but he who, availing himself of all the information which the histology, embryology, and ecology of the day can furnish, defines his species within broad, rather than narrow limits, in clearly and sharply cut words which can be readily comprehended, and do no force one to resort to original and perhaps single specimens to learn what the author of the species really meant.

Development of the Florideæ.

The very complicated process of fertilisation in the higher Florideæ has been, in recent years, the subject of much investigation and controversy. The account given by Schmitz that, in some species at least, a double act of impregnation takes place, has been generally accepted ; but this is now disputed by Oltmanns (*Bot. Zeitung*, 1898, 1te. Abtheil., p. 99). Examination of the process in *Callithamnion*, *Dudresnaya*, *Dasya*, etc., has convinced him that the only true act of impregnation in these seaweeds is the fusion between the male nucleus of the pollinoid and the female nucleus of the carpogone, which results in the production of the sporogenous nucleus. The processes described by Schmitz as secondary acts of impregnation are not really such, since no fusion of male and female nuclei takes place. In *Dudresnaya purpurifera*, for example, when the protoplasm of the sporogenous cell unites with that of the auxiliary cell, there is no fusion of the two nuclei. On the contrary, the nucleus of the auxiliary cell travels away from the sporogenous nucleus to the most distant part of its cell. When the sporogenous filament unites with the terminal cell of a lateral branch, there is again no fusion of the nuclei ; they remain far apart, the auxiliary nucleus gradually decreasing in size. The process is described by Oltmanns as of the nature of a parasitism of the sporogenous on the auxiliary cell.

Distribution of Starch.

It is known that injury to the tissues of a plant causes local increased activity in the respiration and in other vital processes. A somewhat similar effect appears to be produced by the action of parasitic fungi. Professor B. D. Halsted states that in the cells adjoining those attacked by a parasitic fungus there is frequently a large increase in the production of starch, as can be shown by the ordinary iodine test. He has found this to be the case whatever part of the host-plant is attacked, whether stem, root, or leaves. Among other examples he especially mentions the parasitism of *Uredo maydis* on Indian corn, of *Plasmodiophora brassicæ* on the turnip, and the tubercles of various leguminous plants attacked by *Rhizobium leguminosarum*. *Bull. Torrey Bot. Club*, 1898, p. 573.

Non-inflammable Celluloid.

M. Béthisy has obtained a French patent for the manufacture of a celluloid that is claimed to be non-inflammable. The process of manufacture is the same as usual as far as the manufacture of the nitro-cellulose, but 10 to 15 per cent. of dried egg or blood albumin is then added, with 10 to 15 per cent. of powdered mica to obtain the transparent kind, or 10 to 15 per cent. of alum and asbestos in powder for the opaque kind. The mass is further incorporated with vaseline oil dissolved in acetic ether, and afterwards solution of zinc chloride and white gelatin are added, and the mass allowed to stand for some hours before pressing into blocks.—*British Journ. Photog.*, 46, 4.

Anabsinthin.

In addition to the yellow neutral body from wormwood recently described (*P.J.*, *ante*, p. 1), Adrian and Trillat have isolated another new crystalline body, which they call anabsinthin. The formula is given as $C_{18}H_{24}O_4$. It occurs in long white prismatic needles, having a persistent bitter taste. Dried at 120° C. it melts at 258° to 259°. After exposure to the air, however, it melts at 236° to 238°. With concentrated sulphuric acid it gives a bright red-violet colour, turning to blue ; with dilute hydrochloric acid it gives a brown colour. It is without reaction on Fehling's solution and does not form any combination with phenylhydrazine. It appears to be without marked physiological reaction.—*Comp. rend.*, 128, 115.

Cerium Salts in Volumetric Work.

A. Job suggests that, since the ceric salts are very stable, and at the same time active oxidising agents, they should be employed in volumetric analysis, in place of the unstable permanganates now used. Not only are these ceric solutions more constant, but they are available in many cases where permanganates cannot be employed. The presence of the accompanying metals of the same group as cerium does not interfere with the result, so that a standard cerium solution may be prepared from monazite, or from any commercial ceric salt.—*Comp. rend.*, 128, 102.

A MATERIA MEDICA CABINET.*

BY T. E. WALLIS.

Before entering upon a detailed consideration of the subject it will be well to define the terms used in the title, and then we shall better understand the topic with which we have to deal. On hearing of a cabinet there naturally rises before one's mental vision the likeness of a finely-polished mahogany case with drawers and elegant brass fittings. I must ask you to free your imaginations from any such elaborate piece of furniture, and to fix it upon a home-made article which any man can easily construct for himself out of boxes which abound in most pharmacies. Materia medica, again, must be used in the restricted sense now commonly given to it, and as including only those medicinal substances which are obtained in a crude state from the vegetable and animal kingdoms, and commonly known as "drugs."

In following out this subject it will be convenient to divide it into various sections, which will enable us to treat the matter more systematically. The subject naturally falls into the following divisions, each of which will be considered in turn :—

1. The drugs to be selected.
2. The manner of obtaining the drugs.
3. The kind of specimen to be chosen.
4. The arrangement and labelling of the specimens.
5. The method of packing.
6. The practical use of the collection.

I.—The Drugs to be Selected.

The most natural selection to make is to take the list of drugs required for study in preparing for the Minor examination, and to obtain as many as possible. This is a most desirable method of procedure, and a convenient list of specimens (about 280 in number) will be found in the School of Pharmacy prospectus. Although this would lead to a useful selection of specimens, it is well not to confine oneself strictly to the list, for some of the articles are very rare and scarcely obtainable at present, while, on the other hand, there are some drugs now in use which will not be found in the list, as well as many of the more important substitutes and adulterants, which should, so far as possible, be included in an ideal collection.

II.—Method of Obtaining the Drugs.

A vast majority of the drugs, being those now commonly used in medicine, will be found in most pharmacies, and typical specimens may well be selected from the general stock. In many shops also a drawer may be found where odd drugs have accumulated during the lapse of time, and it will repay the student to search over any such collection and to select from them any specimens which will be useful. The wholesale drug houses will, as a rule, be glad to give samples of drugs to their customers, and this will form another most useful means of obtaining some of the rarer drugs and those which, though in common use, are not generally found in a crude state in our pharmacies.

III.—The Kind of Specimen to be Chosen.

The specimens should be strictly typical of the drugs in question and should show all their notable macroscopic characters ; thus, in choosing a specimen of gentian, a piece of the root should be taken, and also a piece of the rhizome showing the rings formed by the leaf-traces. The size of the pieces chosen is also an important point ; two extremes are to be avoided, viz., the choice of such large samples that the whole collection becomes unwieldly, and secondly, the choice of very small specimens with a view to making the cabinet as small as possible. The size to be aimed at should be as small as will correctly show all the diagnostic characters of the drug in question and still large enough to be of practical use for future work.

IV.—The Arrangement and Labelling of the Specimens.

In the study of materia medica, students will find it very useful to tabulate the drugs in a small note-book kept for the purpose. An arrangement such as the following will be found useful; divide the page into six columns, which may be headed thus :—

Name.	Origin.	Nat. Ord.	Habitat.	Description.	Constituents.

Under "Name" write the ordinary English name for the drug ; under "Origin" put the zoological or botanical source of the drug ; under "Description" give the diagnostic characters by which the drug is most readily identified ; in the column headed "Constituents," the chief active principles should be put. A narrow margin should be left on the left-hand side and each drug as it is entered should be numbered so that the number may be used for reference. The specimens for the cabinet should be, as far as possible, arranged in the order of the drugs in the table, which will form an index and key to the cabinet.

The box or bottle containing each specimen should be carefully labelled, and as many of the specimens are rather small, it is frequently inconvenient to write the name upon the label, and it will be found better to use the numbers put in the margin of the table, as these can be written on a very small label. As the table will follow the order of the drugs as they are treated in the lectures, the leaves, barks, roots, etc., will be arranged together in their respective groups.

V.—The Method of Packing.

Specimens are sometimes packed by taking a shallow wooden tray and dividing it into numerous divisions, into each of which is placed a specimen ; the whole is then carefully covered with glass and all the cracks filled with cement of some sort so that the whole is air-tight. The specimens are thus preserved intact and free from injury ; but the method shows a serious disadvantage in that the different drugs cannot be taken out and examined or cut ; the only means of comparison with the standard being to compare the features as seen through the glass. It is evidently preferable to pack each specimen separately, and in such a way that the container can be readily opened, enabling one to handle and examine the standard sample with ease and exactness. There are various ways in which this end may be gained. We will consider three :—

(*a*) Perhaps the neatest and most suitable method of packing is to put the drugs into glass specimen tubes of various sizes. Each specimen is thus kept entirely to itself and can be readily labelled for reference, also the drugs are preserved from the ravages of mites and other destructive insects.

(*b*) One might also pack the specimens in cardboard boxes or in willow boxes ; but this method is open to objection. The boxes are always liable to become the homes of harmful insects, which are ruinous to the specimens, and the willow boxes especially would take up too much room to be convenient.

(*c*) It will be seen that some specimens are from their nature best preserved in glass vessels such as small tubes or bottles ; thus the starches, lycopodium, kamala and lupulin, the small umbelliferous fruits and many of the seeds can be neatly and to the greatest advantage packed in small glass tubes ; while such specimens as spermaceti, manna, camphor, squill bulb, colchicum, etc., are most suitable stored in small bottles or larger sized specimen tubes. Again, there are many drugs, such as gentian root, belladonna, and other hard rhizomes and roots, the larger and more

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woody seeds, the majority of the barks, woods, resins, etc., can be perfectly well preserved in boxes. Very handy boxes for this purpose are the ordinary slide boxes for six or twelve powders. Two, three, or more specimens can be packed in each, and the numbers of the specimens marked on the top and also on the ends of the boxes. Many of the leaves will not readily lend themselves to either of these methods of treatment, and it will be found useful to make special cases in which to pack them. Take a piece of window glass about six inches by three or four to form a top to the box. The sides can be readily constructed of strips of wood about half-an-inch wide and a quarter of an inch thick, which can be pasted together with the glass with a strip of paper. A back of cardboard can be hinged on to one side by a strip of gummed paper. The leaves can be seen through the glass top, and if it is necessary to take them out for further examination the hinged cardboard bottom enables one to get at them without difficulty.

Such specimens as a poppy head, colocynth fruit, bael fruit, etc., will not need any special packing, and can be put in as they are. Thus, by suiting the container to the substance to be packed, one can pack the specimens to the greatest advantage.

Having packed each specimen in its special box or tube, the whole of the samples must for convenience be put into some suitable box which will keep them together and allow one easily to find any particular drug which may be wanted on an emergency. If the slide powder boxes are used to pack the specimens, it will be found convenient to choose a box about twice as wide as the cardboard boxes are long; then, if a partition is made down the centre and the sides made to open instead of the lid, the boxes can be packed in so that their numbered ends face outwards, and any specimen can be easily found by inspecting the numbers, which should be as nearly as possible arranged in numerical order.

VI.—The Practical Use of the Collection.

It would be utterly useless to take the trouble of constructing any such cabinet as that suggested, unless one has some object in doing so.

To Apprentices and Students.

1. An aid to the memory.

Artificial memory systems are based on the principle of association, and the student can associate the characters of the drugs with those he has seen on his own specimens. The construction of the table also helps to impress upon the mind the more troublesome but equally necessary details as to habitat, natural order, etc.

2. It adds to the interest in materia medica.

The material for the cabinet is best collected during the period of apprenticeship, and puts before the student a definite object to be attained in the pursuit of a study, which is otherwise rather tame and uninteresting.

3. The table will form an excellent means of revision.

All the prominent and diagnostic characters are noted down and one is enabled at a glance to learn the important points without the trouble of searching them out from the notes of old lectures or from the mass of information given in a text-book.

4. To make microscopic preparations.

A student, if desirous to make a permanent microscopic preparation of a drug, can do so from material ready to hand and without the trouble of getting a specimen for the special purpose.

To Pharmacists in Business.

1. As a standard with which to compare drugs both as regards macroscopic and microscopic characters.

2. A pharmacist with some leisure time can study the anatomy of various drugs with a view to original research, and as an aid in the examination of any powdered drugs whose purity he may wish to determine.

3. Any conscientious pharmacist will have an eye to the welfare of his apprentice, and will be able to lend him specimens of rarer drugs so that he may become acquainted with their characters.

MYRRH AND BDELLIUM.

BY E. M. HOLMES, F.L.S.,
Curator of the Museum of the Pharmaceutical Society of Great Britain.

(*Concluded from page 28.*)

The second group of trees includes species with

Leaves rarely exceeding 2 centimetres in length; flowers in small lateral clusters.

7. Commiphora Abyssinica, Engl.—The trec is spiny and the central leaflet is very variable in size, from 1½ to 5 Cm. or more long, not hairy, somewhat rigid, faintly toothed nearly to the base, and often furnished with two small lateral leaflets varying from one-fourth to one-tenth the size of the central one; the leaf-stalk varie from 2 Mm. to 1 Cm. in length. These variations may occur on the same branch. Sometimes the lateral leaflets are not developed.

Fig. 7.—Commiphora Abyssinica, Engl.—*a*. Young shoot. *b*. Flowering and fruiting twig, one-third natural size. *c* Male and female flower and fruit, enlarged. *d*. Male flower. *e*. Female flower. *f*. Longitudinal section of fruit showing inner coat and stone. After Engler.

Fig. 7A.—C. Abyssinica.—*g*. Stone of fruit, natural size. *h*. Ditto, front view. *i*. Ditto, back view. *j*. Ditto, lateral view. *k*. Ditto, basal view.

The flower-stalks are very short, the flowers forming small clusters. The fruit is elliptical, with a well-developed point. The stone is quite smooth, elliptical, obtuse, convex on the larger side, and less convex but slightly angular in the upper half of the other. It also has a short linear fissure on either side of the apex. The inner coat is not specially developed, surrounding the stone equally. It has been found in Abyssinia, Khordofan, and Erythræa. The native name of the tree is "Chaddasch." The gum resin obtained from this tree by Dr. Schweinfurth, and sent to the writer, was not myrrh.

8. C. Schimperi, Engl.—This shrub or small tree has a pale bark, the outer layer of which is thin and becomes free. The

leaves resemble those of *C. africana* (see Fig. 13), but are smaller and more crowded. The leaf, which is not hairy, consists of three toothed leaflets, of which the central one is 1·5 to 2·5 Cm. long and 1·5 to 2 Cm. broad, the lateral leaflets being a little smaller and less narrowed to the base. The leaf-stalk is 2 to 3 Cm. long. The fruit has a stalk less than a centimetre long, is oval, tapering, into a pointed apex, about 9 Mm. long and 7 Mm. broad. The stone (Fig. 13A) is distinctly warty, convex on the larger side and lightly so on the smaller, with an angle in the upper half, acute,

FIG. 8.—COMMIPHORA SCHIMPERI.—Leaves and fruit, natural size. Drawn from material in the Berlin Herbarium.

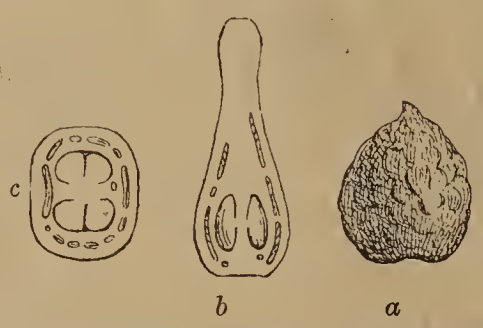

FIG. 8A.—COMMIPHORA SCHIMPERI, ENGL.—*a*. Transverse section of fruit. *b*. Longitudinal ditto. *c*. Stone showing warty surface, all enlarged. After Engler.

not rounded, at the apex. The plant is known to the natives (Tigre) as "Ankua" or "Oanka." It flowers in November and fruits from April to July. It is found in Abyssinia and also in Yemen in South Arabia. The specimens of gum resin from this plant seen by the writer have neither the taste nor the odour of myrrh. It is particularly necessary to obtain good specimens of this plant, of *C. abyssinica*, *C. quadricincta*, and *C. myrrha*, since all these have been suggested as myrrh-producing species.

9. C. SAMHARIENSIS, SCHWF. (Fig. 9).—This species, found near Massowah, in Erythræa, has not yet been described, but the figure of the leaf is drawn from a specimen from Dr. Schweinfurth in the Kew Herbarium (by the kind permission of the Director). The leaflets (*a*) are not hairy and bear some resemblance to those of *C. abyssinica* as does also the stone (*b*, *c*, *d*, *e*), but the lateral leaflets are proportionately larger, and the leaf-stalk is much longer.

10. COMMIPHORA SERRULATA, ENGL.—A small tree about 8 feet high. Adult branches grey, with tufts of leaves at the end of the branches, leaves having three leaflets with serrulate margins, the central leaflet 1½ to 2 Cm. long, and about 10 to 12 Mm. broad, elliptic or obovate with a wedge-shaped base, a little larger than the lateral leaflets, which are 1·2 to 1·5 Cm. long, and

FIG. 9.—C. SAMHARIENSIS, SCHWF.—*a*. Leaf, natural size. *b*, *c*. Stone of fruit, natural size. *d*, *e*. Ditto enlarged, showing lateral and front view of the smaller surface. Drawn from material in the Kew Herbarium.

a little oblique at the base. Leaf-stalk semi-cylindrical, 1 to 1½ Cm. long; leaflets minutely hairy above but hairless beneath.

FIG. 10.—COMMIPHORA SERRULATA, ENGL.—Leaf, natural size. Drawn from material in the Museum of the Pharmaceutical Society.

The veins and veinlets slender, reticulated, slightly prominent beneath.

It is found on the Ahl mountains at Meid, Somali-land, at an elevation of about 1100 metres.

The tree is intermediate between *C. schimperi* and *C. samhariensis*.

11. C. RIVÆ, ENGL.—A much-branched tree with greyish spiny branches, central leaflet narrowly spoon-shaped, about 2 Cm. long and 6 to 7 Mm. broad, with the margin indistinctly toothed, the lateral leaflets elliptical, about 5 Mm. long and 3 Mm. broad,

FIG. 11.—COMMIPHORA RIVÆ, ENGLER.—*a*. Fruit, natural size. *b*. Stone and inner coat, natural size. Drawn from material in the Berlin Herbarium.

smooth, the leaf-stalk slender, about 2 Cm. long. Fruits nearly sessile, 9 to 10 Mm. long, 6 to 7 Mm. thick, the fleshy inner layer about 4 to 5 Mm. high and 5 to 6 Mm. broad, the outer rind resinous, the stone 5 to 6 Mm. long and 5 Mm. broad. I have been unable to obtain a leaf of the plant.

Collected in Somali-land and Berber.

12. C. GURREH, ENGL.—The branches are spiny, with a brownish bark. The leaves are not known. The fruits are stalkless, between globular and egg-shaped, with a short point at the apex, 7 to 8 Mm. in diameter, the outer rind very resinous, splitting into two halves, the stone sub-globular, slightly wrinkled, triangular, with a nearly circular section. The plant was found in Somali-land,

fruiting in July and August. The leaves are unknown, but the characters of the stone indicate a close alliance to *C. africana*, found at Merehan, Somali-land.

FIG. 12.— COMMIPHORA GURREH, ENGLER.—*a*. Fruit. *b*. Stone, face view. *c*. Ditto, lateral view. All natural size.

13. C. AFRICANA, ENGL.—A small branching tree about 3 metres high, the older branches purplish and smooth, the younger downy. The scattered leaves consist of three leaflets, and are thin, coarsely

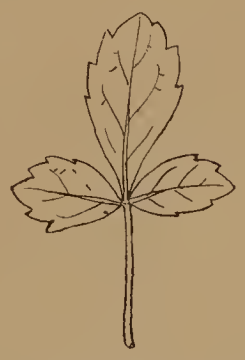

FIG. 13.—COMMIPHORA AFRICANA.—Leaf, one-third natural size.

toothed, hairy on both surfaces, especially on the under, the leaf-stalk 1·3 to 2·0 Cm. long. The central leaflet is somewhat rhom-

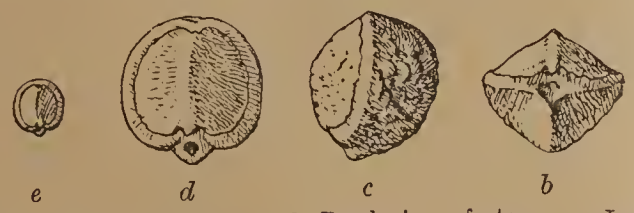

FIG. 13A.—COMMIPHORA AFRICANA.—*b*. Basal view of stone. *c*. Lateral ditto. *d*. Front view. *e*. Stone, natural size. Drawn from material in the Museum of the Pharmaceutical Society.

boid, with a wedge-shaped base 3 to 4 Cm. long and 2 to 2·5 Cm. broad above, the lateral leaflets a little smaller, 2 to 2·5 Cm. long and 1·5 to 2 Cm. broad. The flowers are scarcely stalked (stalks 1 Mm. long). The fruit is 1 Cm. long and 7 to 8 M. in diameter, elliptical. The stone is warty, nearly globular, the very convex side forming three-quarters of the stone, and the slightly convex side only one quarter. On both sides there is an indistinct central ridge from base to apex. The tree is found in Abyssinia and Khordofan, and is apparently called "Oanka" in Abyssinia equally with *C. abyssinica*. There is little doubt that this species yields part of the gum resin known in commerce as African bdellium.

14. COMMIPHORA HILDEBRANDTII, ENGL.—A tree about 6 M. high, the older twigs blackish, the younger whitish. Flowers and leaves densely covered with short hairs, borne at the apex of short branchlets. The leaves consist of three leaflets, which are doubly toothed, the central one reversely egg-shaped, wedge-shaped

FIG. 14.—COMMIPHORA HILDEBRANDTII, ENGL.—Small leaf, natural size. Drawn from material in the Museum of the Pharmaceutical Society.

towards the base, the lateral unequal-sided. The leaf-stalk is about 7 to 10 Mm. long, the central leaflets 1·5 to 2 Cm. long and 1·5 Cm. broad, the lateral 1 to 1·5 Cm. long, and 6 to 8 Mm. broad. The rounded apex of the leaflets forms a characteristic feature. The fruit has not been described. The plant is found in Somali-land and the vernacular name is "Hagr-möddu."

15. C. SOMALENSIS, ENGL.—A small tree, about 8 M. high, with grey or blackish twigs, not spiny, the leaflets grey, with short hairs, somewhat leathery, central leaflet oblong, 2 to 2½ Cm. long, and 1·5 to 1·8 Cm. broad, the lateral leaflets obliquely oblong, 1 to 1·5 Cm. long, and 0·5 to 1 Cm. broad, the upper part of the central

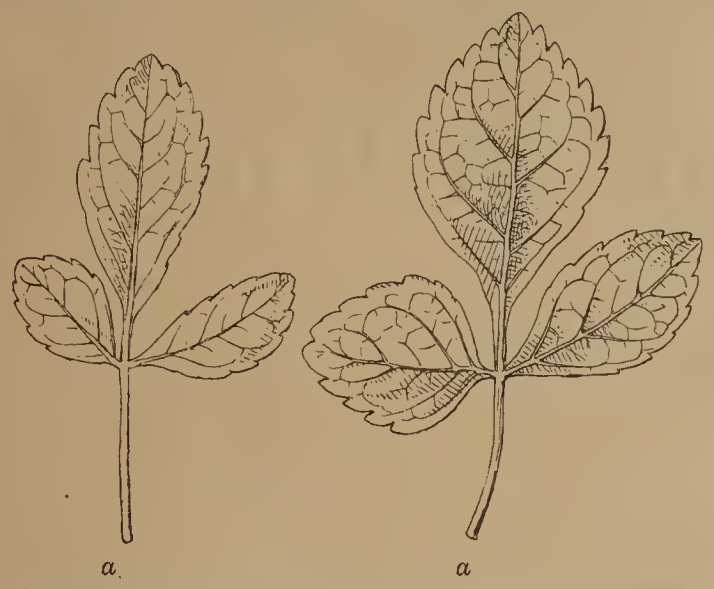

FIG. 15.—COMMIPHORA SOMALENSIS, ENGLER.—*a*. Leaf, natural size. Drawn from material in the Berlin Museum.

leaflet, and the outer margins of the lateral ones with rounded teeth, the leaf-stalk a little shorter than the leaves (2 Cm.). Fruit not known. It differs from *C. hildebrandtii* in the large leaflets, entire below, with shorter hairs and a longer leaf-stalk. It is found on the Ahl mountains in Somali-land. The bark is used for tanning.

The third group of trees includes species with

Leaflets exceeding 2 centimetres in length; flowers borne on elongated branched flower-stalks.

16. C. KATAF, ENGL.—A tree with with white wood, and branches not spiny, with leaves crowded at the tips of the branches, long

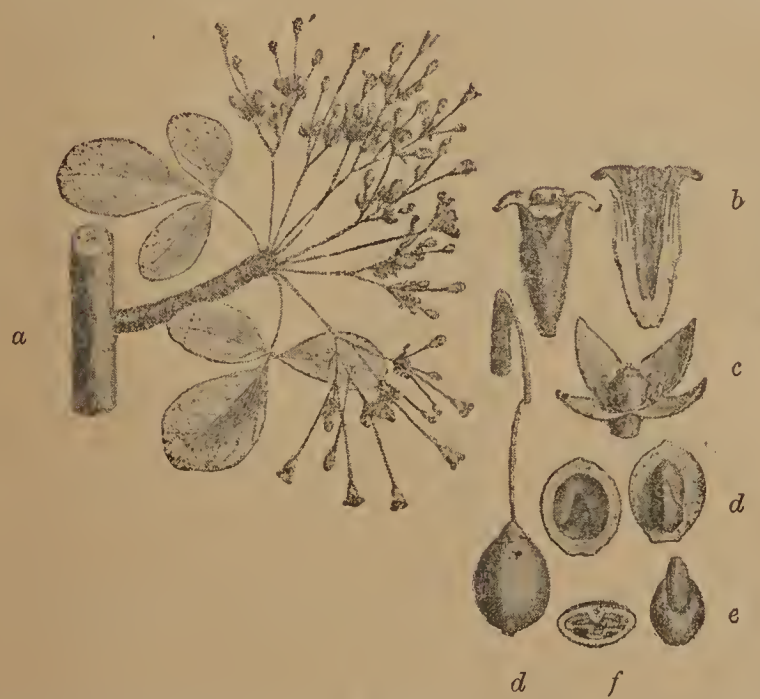

FIG. 16.—COMMIPHORA KATAF.—*a*. Flowering twig, one-third natural size. *b*. Male flower entire, and in longitudinal section. *c*. Female flower. *d*. Fruit, with stone, front and side view. *e*. Stone with inner coat *f*. Transverse section of stone.

stalked (2 Cm.), but not hairy, the central leaflets obovate, obtuse, tapering below, 2 to 2½ Cm. long and 1½ to 2 Cm. broad, much

narrowed from the middle to the base and obsoletely toothed, the lateral leaflets oval, 1½ to 2 Cm. long and 13 to 15 Mm. broad. The

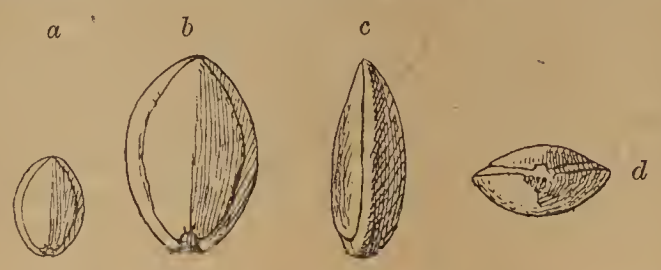

FIG. 16A.—COMMIPHORA KATAF, ENGL.—*a*. Stone of fruit, natural size. *b*. Ditto, enlarged front view. *c*. Ditto, lateral view. *d*. Basal view.

primary flower-stalks are 4 to 5 Cm. long, and the secondary 5 to 8 Mm. long. The fruit is ovate, the stone plano-convex and

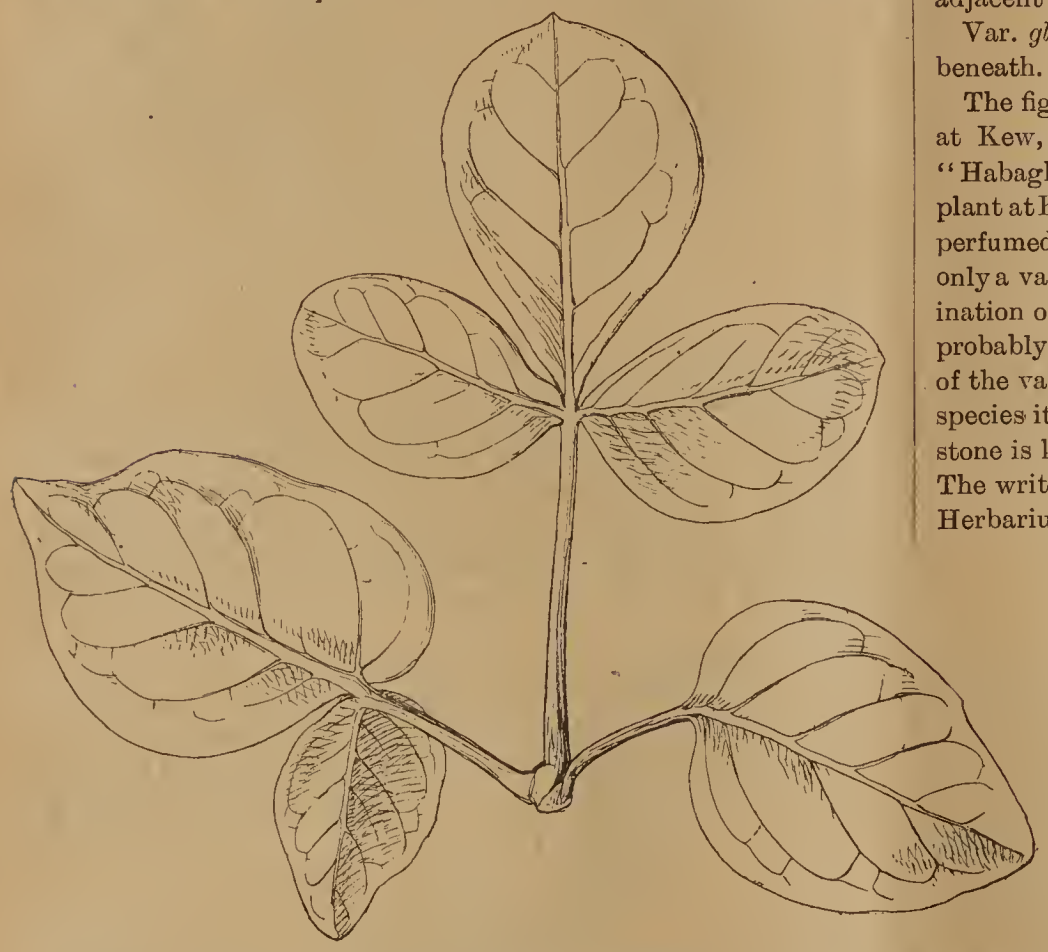

FIG. 17.—COMMIPHORA ERYTHRÆA, VAR. GLABRESCENS, ENGLER.—*a*. Leaf, natural size. Drawn from material in the Kew Herbarium.

elliptical. Forskal supposes that his "Kataf" may be the young plant of his "Kafal," the wood (heartwood?) of which is red and is sold in Egypt for impregnating fictile water vessels with its smoke when burnt. The kataf, he states, "exudes

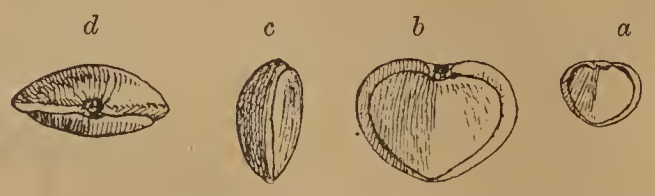

FIG. 17A.—COMMIPHORA ERYTHRÆA, ENGLER.—*a*. Stone of fruit, natural size. *b*. Ditto, enlarged, front view. *c*. Ditto, lateral view. *d*. Ditto, basal view. Drawn from material in the Museum of the Pharmaceutical Society.

in the rainy months a fragrant red powder, which is used by the women to wash their hair. Kafal is said to be a taller tree. It grows in Arabia." The stone is oval, somewhat compressed and smooth. The shape of the stone distinguishes the two species, being longer than broad in that of *C. kataf*, and broader than long in *C. erythræa* ("Kafal.")

17. C. ERYTHRÆA, ENGL.—A small tree, 3 metres high, not spiny, with greyish branchlets, at the apex of which the flowers and leaves are clustered. The leaves and flower-stalks are covered with short greyish downy hairs, the central leaflet is from 3½ to 7 Cm. long, and 2 to 4 Cm. broad, the lateral leaflets 2½ to 4 Cm. long, and 2 to 3 Cm. broad, obovate and narrowed below, the lateral, ovate, more or less oblique, the margin entire or remotely and slightly toothed, the lateral veins very prominent and reticulate beneath, becoming smooth in the adult leaves.

The fruit is 1 to 2 Cm. long and 8 Mm. broad, the stone ovate, compressed 9 Mm. long and 7 Mm. broad. The stone is transversely oval, broader than long, and compressed; the primary flower stalks are 3 to 4 Cm. long, and the secondary 5 to 7 Mm. long. It is found on the islands of Ketumbul and Macau, and the adjacent coasts.

Var. *glabrescens*, Engl. In this variety the leaves are not hairy beneath. Collected at Kismayo and Somaliland.

The figure here given is that of the leaves of the plant so named at Kew, and which certainly yields the perfumed bdellium or "Habaghádi" of the Somalis. A tear of gum resin exuded on the plant at Kew was tasted by the writer, and found to be identical with perfumed bdellium or Habaghadi. Whether it is a distinct species or only a variety of *C. erythræa*, yet remains to be proved by an examination of its fruits and flowers. The male flowers and fruits will probably be found on separate trees. The fruit has not been described of the var. *glabrescens*, Engl., and it is not possible to say to which species it belongs, or whether it is a distinct species, until the stone is known, since the leaves vary in hairiness according to age. The writer is much indebted to Dr. K. Schumann of the Berlin Herbarium for help in obtaining and forwarding drawings of several of the above species from material in the Berlin Herbarium, but not procurable in this country, to the Director of Kew Gardens for courteously permitting drawings to be made from material in the Kew Herbarium, and to Mr. J. N. Fitch fo the accurate drawings made from material in the Museum of the Pharmaceutical Society of Great Britain. For this material the Society is indebted to the liberality of Dr. Schweinfurth, of Cairo, who generously contributed a series of specimens to the Herbarium, as well as specimens of some of the products to the Museum.

REFRACTIVE INDEX AND ALCOHOL-SOLVENT POWER OF A NUMBER OF CLEARING AND MOUNTING MEDIA.*

BY C. E. M'CLUNG.

As far as the author's observation goes there has not been published any very extensive list of the refractive index and clearing value of the reagents commonly used by microscopists. Such a want is noted by Lee in the fourth edition of his 'Vade Mecum,' page 66. In the hope of assisting in the compilation of such valuable information, the writer has experimented on the reagents named in the following table with the results there noted. The instrument employed in the determination of the refractive index was the Pulfrich refractometer, the sodium flame being used as the source of illumination and the conditions of temperature being kept as nearly constant as possible.

In ascertaining the clearing value of the substances a number of methods were tried, but finally abandoned for the simple one of testing the strength of alcohol that would dissolve in the reagent and produce a clear solution. While this method does not truly

* From the *Kansas University Quarterly*.

represent the conditions present in a tissue where the clearing agent is replacing the absorbed alcohol, yet actual practice indicates that the results are approximately correct, at least nearly enough so to make the figures of practical value. Strengths of alcohol varying by 5 per cent. were employed, and the weakest one that the reagent would dissolve is given in the table as the lowest grade of alcohol from which it will clear.

The different substances tested were taken from the ordinary laboratory supply and supplemented by others obtained from the Pharmacy department of the University. The latter consisted almost entirely of essential oils from the house of Lehn and Fink, New York. When possible, more than one sample of each reagent was obtained and tested.

Following is the table :—

	Refractive Index.	Strengh of Alcohol dissolved	Price per pound.
Chloroform	1·4395	95 per cent.	$ ·65
Linalool	1·45941	80 ,,	—
Oil Eucalyptus	1·46090	90 ,,	1·25
Linaloe	1·46090	85 ,,	—
Oil Petitgrains	1·46090	90 ,,	—
,, Coriander	1·46288	85 ,,	·75 oz.
,, Peppermint	1·46327	85 ,,	1·25
,, Cedar	1·46626	95 ,,	·30
,, Pinus sylvestris	1·46882	100 ,,	1·10
Turpentine	1·46882	100 ,,	1·40 gal.
Oil Lemon	1·47078	95 ,,	1·25
,, Eucalyptus glob.	1·47097	90 ,,	—
,, Orange	1·47176	95 ,,	4·00
,, Pinus picea	1·47274	100 ,,	—
,, Juniper berries	1·47394	95 ,,	1·75
,, Pinus pimlionis	1·47620	100 ,,	—
,, Citronella	1·47909	90 ,,	1·25
,, Origanum	1·47919	95 ,,	1·10
Turpineol	1·48005	75 ,,	—
Oil Celery	1·48054	95 ,,	1·20
,, Nutmeg	1·48054	95 ,,	·30 oz.
,, Origanum	1·48103	95 ,,	1·10
,, Caraway	1·48441	90 ,,	1·75
,, Ginger	1·48807	95 ,,	65 oz.
Xylene	1·49348	95 ,,	—
Benzene	1·49488	95 ,,	·45
Carvol	1·49535	85 ,,	—
Oil Thyme	1·49538	95 ,,	1 49
,, Copaiva	1·49723	Immisc.	1·10
,, Cedarwood	1·50188	95 per cent.	—
,, ,,	1·50326	95 ,,	—
,, Cumin	1·50373	90 ,,	4·50
,, Sandalwood (E. In.)	1·50510	90 ,,	6·00
,, Calamus	1·50602	95 ,,	·30 oz.
,, Sandalwood (W. In.)	1·50820	80 ,,	3·50
,, Cedarwood	1·51533	95 ,,	—
Xylene Balsam	1·52397	—	—
Oil Sassafras	1·52724	95 ,,	·50
,, Allspice	1·53062	85 ,,	·25 oz.
,, Cloves	1·53171	80 ,,	·65
,, Sweet Birch	1·53329	90 ,,	—
,, Cinnamon leaves	1 53535	85 ,,	—
Safrol (sp. gr. 1·108)	1·53584	95 ,,	—
Oil Fennel	1·53885	95 ,,	1·75
,, Cloves	1·53723	80 ,,	·65
,, Mirbane*	1·54982	95 ,,	·35
,, Anise	1·55795	95 ,,	2 25
Anethol	1 55208	90 ,,	—
Anilin	1·58457	60 ,,	—
Oil Cassia	1·60160	80 ,,	1·80

The table speaks for itself, so that comment is scarcely necessary. From the list given, a series of clearing agents may be selected in which almost any refractive index from 1·44 up to 1·60 is obtainable. Since many of these are suitable agents in which to mount objects, the proper refractive power for most structures may be selected. Where it could be found, the price of the reagent per pound is given.

Particular attention is called to the value of the oil of cassia, which has a refractive index of 1·60160 and clears from 80 per cent. alcohol. It is a most excellent reagent according to all experience in the laboratory, and in addition to its other good qualities it dries hard enough to make permanent mounts.

ON THE BEST FORM OF PHOTOGRAPHIC APPARATUS.

BY PERCY LUND.

No specific form of camera and attachments will meet every need. The different purposes required by different applications make this impossible. The architectural photographer, for instance, must have, among other particular requirements, a lens of wide angle ; the pictorial photographer one of narrow angle ; the instantaneous photographer one which will work at a large aperture, and so on. In the midst of all this differentiation, the question may be reasonably asked, what should the all-round man go in for ? By the term "all-round" we imply the man who wishes at times to photograph buildings, on other occasions landscapes, and yet again to take snap shots of people or events which interest him. One way of having means at hand for the satisfaction of a catholic taste is, of course, to have a bit of several cameras and several types of lenses ; from the finest anastigmat with its marvellous covering power and biting definition to the simple spectacle glass having that important quality, depth of focus. But to take all this weight in instruments out into the field, if not beyond possibility, would be a most unpractical proceeding, and a photographer with several strings to his bow must, if he intends to carry out all his ideas, be likewise provided with a very lengthy purse.

Is it possible, then, one may ask again, for the photographer of general tastes to be provided with an instrument adapted for his various requirements at a moderate price, and equally moderate in size and weight ? We say briefly at the outset that it is, and we now propose to back up that statement by describing a form of camera which we have recently had made for ourselves, fulfilling to a great extent the qualifications already alluded to. Let us first give an account of the instrument, and then enumerate very briefly different directions in which it can be employed.

The entire catalogue of our apparatus comprises a quarter-plate camera with six double dark slides, two lenses of the casket type, each having four interchangeable glasses fitting into the same mount, and a light wooden tripod. The camera and tripod can be carried in the hand, for no bag is really necessary, and the lenses and slides disposed of in various pockets, though it is a convenience to put them all in a bag when going away for more than a few hours. When this is the case, we use instead of the ordinary chest compressing camera bag, which is always getting in one's way by swinging round at awkward moments, one of the rücksack pattern as adopted by most Alpine climbers. This bag goes over the shoulders, hanging more comfortably and lower down than a knapsack, while it has the advantage of leaving both arms and the chest perfectly free, and at the same time a very great weight can be carried if necessary. This capacity is decidedly convenient when touring, either on foot or by cycle, since a change of clothes could be carried in addition to the photographic apparatus.

Now to describe the camera in detail. It is of the pattern usually called "hand and stand," that is to say, it closes up in the form of a box, leaving no projecting parts save the shutter screws. The camera when racked out at full is capable of extending twenty inches ; its shortest focus is just under six inches. At the back is the usual focussing screen for use when the camera is placed on a stand. When employed in the hand a reflecting mirror throws the image on to a screen at the top, and no focussing cloth is then required, for this screen has above it a tapering arrangement made of leather, having at its apex only a small narrow slit just sufficiently wide for the eye to peep in without allowing the access of any perceptible quantity of extraneous light. The height of this tapering cone of leather is about six inches. Many cameras, on what is called the reflex principle, at present on the market, have instead of this focussing cone, a short arrange-

ment about two inches high, with an opening almost an inch across. Such an arrangement is useless in practice, for it is an impossibility to keep direct light from reaching the ground glass, and so obscuring the image. Hence, accurate focussing becomes out of the question. At the back of our camera, working just in front of the dark slide, is a focal plane shutter acting in connection with the mirror, and released by a little knob in front. When this knob is pressed, the mirror rises so as to leave the field clear, and the focal plane shutter simultaneously flies past. When, however, it is desired to use the camera on a stand, the focal plane shutter can be thrown out of gear, the mirror raised for the time being, and exposures may be made either by a roller blind shutter at front or with the cap in the ordinary way. Those are the main points in the construction of the camera. There are other details, but they are not essential, and need not be mentioned now. When closed the camera measures $8\frac{1}{2} \times 6\frac{1}{2} \times 6$ inches, and weighs four pounds six ounces.

The lenses are each in separate leather cases of very modest dimensions. In one series there are four achromatic single lenses of six, ten, fourteen, and twenty inches focal length respectively. The lens mount is fitted with an iris diaphragm, the lenses can either be used singly or two together to form rectilinear and wide-angle combinations. The other series consists of four simple spectacle glasses, as they are called, uncorrected for achromatism, and necessitating a slight backward movement in the camera after focussing to bring the chemical rays into range. The lengths of the component lenses are as in the other case, six, ten, fourteen, and twenty inches, and they also can be used in combination if required.

The tripod is a light wooden one of the usual kind, two sections folding and the third drawing out. The total cost of this apparatus, inclusive of carrying case, need not exceed £12 or £14, and when we have described the principal uses to which it can be put, no doubt the reader will agree that it is a very cheap outfit indeed. That it is comparatively light and portable has already been shown.

Let us assume, in the first place, that the photographer has pictorial inclinations, and wishes to attempt what we may call artistic portraiture and landscape. For portraiture he will employ the camera on its stand, and probably work with either the twenty or the fourteen-inch single spectacle lens. He will focus carefully on the back screen, having thrown the shutter and mirror out of the way, and carefully attended to the necessary corrections for achromatism. By this means he can obtain large heads with a varying degree of definition according to his notions of what is best. His portraits will have a beautiful softness, and according to the aperture of the diaphragm, exposure may be either a long or a short one. If, on the other hand, it is with landscape he is concerned, the longer focus lenses will usually serve him best, and with the spectacle series he can get that splendid diffusion of focus which is not procurable with any other form of lens. Should the photographer, however, belong to what we will term for the moment the topographical school, he can substitute for the spectacle series the others which have been corrected, and he may also, by making a combination, obtain a rapid rectilinear lens, which the presence of buildings in the views may render necessary. With this rapid rectilinear he can secure biting definition on any plane, and again, by altering the focus, include just the necessary angle which the subject demands. Supposing he wishes to deal with interiors, he can bring into play the combination of shortest focus, and include a very wide angle indeed. With the long focus achromatic combination, the camera may be very advantageously used for copying pictures, or other details of architecture, and the twenty-inch single lens would give quite a large image of distant objects, as, for instance, a capital figurehead, or statue, or any subject where the slight distortion of a single lens would not be noticed.

So far we have spoken solely on stand work. It remains only to mention the camera's capabilities when used in the hand with the reflex focussing arrangement, and the focal plane shutter. Some little practice is necessary at first to enable the focus to be adjusted with accuracy, but the experimental sacrifice of perhaps half-a-dozen plates will put the photographer *au fait* with this part of his work. Suppose he wishes to snap at birds in flight, let him put in the achromatic single lens of twenty inches focus, rack out his camera to the full, and peeping down the focussing cone he carefully brings any fixed object at the right distance into focus, making the exposure just at the proper moment when it appears in the middle of the field. The worries of view finders do not trouble him at all; he is looking actually at his focussing screen, and knows that only adroitness is necessary to secure the passing object just in the centre of the field. What applies to birds applies also to animals, ships, and other objects, but where the objects are not small and it is not desired to obtain as large images of them as possible, the photographer will find it more convenient to use a lens of shorter focus, and the reasons for this are obvious. The longer the focal length the greater the difficulty of focussing accurately, and the smaller the field of view. For ordinary instantaneous work a lens of six inches focus is the right thing to use, but it is not advisable to employ a shorter focus lens than this, as pictures of false perspective are necessarily the result. The majority of quarter-plate hand cameras have a focal length not exceeding about four and a half inches, and the baneful effect of this is to be seen in the thousands of amateurs' prints in which exaggerated perspective is present to no small degree. This is particularly noticeable where a wide road extending into the distance forms any part of the view. The road usually occupies almost the whole of the foreground, but tapers off with extraordinary rapidity towards the distance, so that the landscape has something of the appearance of what one sees when looking through the wrong end of a field glass.

The great advantage of the reflecting mirror is that one can see the field of view up to the moment of exposure, and can bring into focus that plane upon which the principal object lies with far greater accuracy than by the focussing scale, where no image is seen. The twin-lens camera, it is true, possesses this power, but only at the cost of greatly increased dimensions. It will be seen, therefore, that there are very few purposes for which a camera of this description cannot be advantageously employed. Perhaps the only strong evidence which can be brought against it is that quarter-plate is too small a size for many purposes. We are not of this opinion ourselves, especially when it is considered that enlarging can be performed with great facility. But if the photographer desires it, it would be quite possible to construct a half-plate camera upon the same principle, though the apparatus would not then be by any means so light and portable. After using during the last fifteen or twenty years cameras of many different kinds, we have no hesitation in stating that, for the general purposes of amateur work, the particular form just described, almost Protean in character, is unquestionably the most convenient.—*Photography.*

Taphosote.—Taphosote or creosote tanno-phosphoric-ester is stated to be valuable in the treatment of a tuberculous condition accompanied by diarrhœa. It is a greyish syrupy liquid.—*Pharm. Cent.*, 39, 608.

NOTICES OF BOOKS AND OTHER PUBLICATIONS

THE 'CALENDAR' FOR 1899 of the Pharmaceutical Society of Great Britain makes a somewhat belated appearance this week. As a general rule it is published early in the second week in the year, but the delay on this occasion will readily be excused when one turns to page 291, and tries to realise the enormous amount of painstaking labour involved in the compilation of the new list of "members." Formerly there were three lists of guinea subscribers —pharmaceutical chemists, chemists and druggists, and associates in business, and varieties existed even among these, for some were examined and some were not, and some were life members, whilst others were annual subscribers. To weld these three divisions into one harmonious whole, and yet preserve the subtle distinctions aforesaid was no light task, but it has been done in a manner deserving of commendation. The arrangement whereby the pharmaceutical status of each member may be seen at a glance is admirably clear and succinct. Speaking of lists, there is one in this edition which appears for the last time, namely, the list of "Associates not in business." Strictly speaking, the grade of "Associate" passed into the category of pharmaceutical history on July 25, 1898, when the Royal assent was given to the Pharmacy Acts Amendment Act; but the names of those who supported the Society in the Associate stage have received honourable mention in the present 'Calendar,' and will, it is hoped, be transferred to the more exalted roll of membership in a future edition.

Apart from the re-arrangement of these lists—which, from a literary point of view, one may be pardoned for regarding as the least interesting portion of the 'Calendar'—the changes are neither numerous nor extensive, being simply those necessitated by the natural progress of events. In admitting this there is nothing derogatory to the value of the work, for the absence of new features is by no means a drawback in a compilation which preserves the efficiency of its old characteristics. Whatever of importance has happened has been added, and whatever has become obsolete has been omitted. Thus the new Pharmacy Act, the latest Bye-laws, and the recently launched Examination Schedules (to come into force next October) are all to be found in their proper places, and the student with a passion for research work may gratify it by comparing the new schedules with the old, for both are printed together. The Parliamentary extracts have been revised by competent authorities or by reference to reliable sources of information, and they are now as useful as they well can be in their present form. The various lists of Prizemen, Honorary and Corresponding Members, Council, Committees, Boards of Examiners, Local Secretaries, and other officers include the very latest changes, in witness whereof reference may be made to the knighthood of Mr. Thiselton Dyer, which is duly noted on page 287, though the honour was only a few hours old when the book went to press.

Those who desire to know more about the "body politic" to which they belong—and it is a form of knowledge not very general —are unhesitatingly recommended to purchase a copy of the 'Calendar' just published. Useful matter, in the shape of last year's examination papers, is also provided for the younger generation, whose interest in pharmacy is largely confined to preparing for examination. Tutors, too, would find in the Society's year-book a good deal of official information of advantage in directing the training of pupils for the various examinations. Copies of the 'Calendar' can be obtained through any bookseller, or of the Secretary, 17, Bloomsbury Square, London, price 2*s.* each (postage 4*d.*) Subscribers to the Society are not called upon to bear the cost of forwarding the book by post.

THE 'PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION FOR 1898' constitute the forty-sixth volume of the finest series of pharmaceutical reference books in the world. There are 1225 pages in the book, and about half of them are devoted to the invaluable annual report on the progress of pharmacy. This section of the book is well up-to-date and, as usual, the index is most exhaustive.

PRACTICAL PICTORIAL PHOTOGRAPHY, Part II., by A. Horsley Hinton (London: Hazell, Watson and Viney, Ltd. Pp. 69. Price 1*s.*), contains numerous types and examples, showing the application of the practice and theories dealt with in Part I., which was noticed in these pages a few months ago. There are numerous excellent half-tone illustrations in the book.

THE 'REVUE DES MÉDICAMENTS NOUVEAUX,' by C. Crinon (Paris: Rueff et Cie. Pp. 414. Price 4 francs) has now reached its sixth edition and remains as useful as ever. The plan of the work remains unaltered, but monographs on several medicaments, including anytine, cresamine, heroïn, iodoformogen, serums, thiocol, etc., are now introduced for the first time.

'SAINT THOMAS'S HOSPITAL REPORTS' FOR 1897 (London: J. and A. Churchill. Pp. 490) are just published. The volume contains an interesting illustrated article by Dr. J. F. Payne, on some old physicians of St. Thomas's Hospital; apart from that the contents are of purely medical and surgical interest.

'POISON ROMANCE AND POISON MYSTERIES,' by C. J. S. Thompson (London: The Scientific Press, Ltd. Pp. 255. Price 6*s.*), is a reproduction in book-form of a series of popular articles, treating of the poisons of antiquity, royal and historic poisoners, and much that will attract readers who may be interested in the subject of poisons generally. The matter is treated in the author's best manner, the book is extremely well printed, and it is also handsomely bound.

'THE EDUCATIONAL REVIEW' (London: 203, Strand, W.C. Price 4*d.*), of which a new series has just commenced, is a pedagogic monthly which is intended to deal with the science and art of education rather than with the ephemeral interests catered for by so many existing publications. The conductors of the paper hope to be able to arouse the average teacher to the fact that education is one of the things which make the world go round, and, if well done, "one of the few activities that will be reckoned wholly to a man's credit on the Day of Judgment." The contents of this first number certainly appear calculated to make teachers think, and everyone interested in education, either as a science or as an art, will do well to order a copy.

THE "GOLDEN RULES SERIES" of booklets, published by Messrs. John Wright and Co., of Bristol, at one shilling each, should constitute a useful addition to the stock of medical publications kept by chemists for sale to medical men. The 'Golden Rules of Surgical Practice,' by E. Hurry Fenwick, F.R.C.S., is an old favourite and now in its fifth edition; the 'Golden Rules of Obstetric Practice,' by W. E. Fothergill, M.A., B.Sc., M.D., and the 'Golden Rules of Gynæcology,' by S. Jervois Aarons, M.D., are new. The contents of all three books are arranged in the most convenient manner, and an ordinary waistcoat pocket will accommodate any of them without difficulty.

THE STUDENTS' PAGE.

EXPLANATORY NOTES ON THE B.P. 1898.*

Liquor Morphinæ Tartratis.—Morphine tartrate is a very useful salt. It is more soluble in water than the sulphate and hydrochloride, and more stable than the acetate, which becomes basic and partly insoluble in water through loss of acetic acid. For these two reasons it has been selected for making the hypodermic injection which was formerly freshly made from the acetate.

Alterations.

The so-called 1 per cent. liquors have been the subject of much controversy, and have undergone various modifications in successive editions of the British Pharmacopœia. They are now directed to be made so that one part *by weight* of the dissolved substance is contained in one hundred parts *by volume* of the solution. Note carefully that this is neither one per cent. nor one grain in one hundred minims. A true one per cent. liquor, *i.e.*, one containing one gramme in 100 grammes, or one grain in 100 grains, would not be convenient for use in medicine in this country, since it is customary to prescribe fluid preparations always by measure. Owing to the fact that there is no simple relationship between the grain and the minim, the liquors containing one part by weight in one hundred parts by measure, although definite and simple to make, do not afford the desired facility for administering simple fractions of a grain of the substances from which they are made. Thus 1/10th grain strychnine hydrochloride is contained in 10 fluid grains of the liquor. The fluid grain has, however, never succeeded in displacing the minim as a prescribing unit, and 10 minims of the liquor will contain *about* 1/11th grain of alkaloid. To obtain similarly ¼ grain of strychnine hydrochloride it is necessary to take 27½ minims, and to obtain 1/50th grain, 2⅕ minims of the liquor. During the time the minim is destined to maintain its present position it would be far more convenient to have the strength arranged in grains per 100 minims. Simple fractional parts of a grain would then correspond to integral numbers of minims. Other changes in this group beyond those connected with the adjustment of their strength just discussed are:—

Liquor Atropinæ Sulphatis.—Camphor water, which is practically without antiseptic action, is replaced by water containing ½ grain of salicylic acid to the ounce. The dose has also been reduced.

Liquor Arsenii et Hydrargyri Iodidi.—The maximum dose is now 20 minims (instead of 30 minims). This quantity still, however, contains nearly ⅕th grain mercuric iodide, although the maximum dose of this substance is given elsewhere as 1/16th grain.

Liquor Strychninæ Hydrochloridi.—This is now made from the crystallised salt, instead of preparing the salt in solution by dissolving free strychnine in dilute hydrochloric acid. The quantity of acid ordered in the B.P., 1885, was in excess of that required for the formation of the neutral hydrochloride, and in cold weather the liquor deposited crystals of a more sparingly soluble acid hydrochloride.

Attention may also be directed to alterations affecting the following liquors:—

Liquor Bismuthi et Ammonii Citratis.—This is now made from the freshly precipitated bismuth citrate, which is much more readily soluble in this state than after it has been dried.

Liquor Epispasticus.—The strength of this has been doubled, to secure a more efficient blistering action.

Liquor Hydrargyri Perchloridi.—The ammonium chloride is now omitted because its presence is not considered to confer increased stability upon the solution. This depends chiefly upon the employment of very pure distilled water.

Liquor Plumbi Subacetatis Dilutus.—The water used for diluting the strong liquor is now directed to be freshly boiled to expel carbon dioxide, so as to avoid the formation of lead carbonate.

Lotio Hydrargyri Nigra.—Mucilage of tragacanth has been added to this in order to suspend the black precipitate. Since the lotion is usually applied on lint some glycerin is also added, so that when the lint is dry it shall not adhere to the surface of the skin.

Magnesii Sulphas.—The quantitative determination of the magnesium is now made as pyrophosphate in place of oxide. Neglecting the intermediate stage of the operation, *i.e.*, the precipitation of ammonio-magnesium phosphate, which is afterwards converted into pyro-phosphate by ignition—

$$\underbrace{Mg_2P_2O_7}_{221{\cdot}12} \equiv \underbrace{2(MgSO_4,7H_2O)}_{489{\cdot}36}$$

since

$$221{\cdot}12 : 489{\cdot}36 :: 0{\cdot}22 : 0{\cdot}487,$$

the 0·22 gramme of pyrophosphate obtained in the official test corresponds to 0·487 gramme of $MgSO_4,7H_2O$ in the 0·5 gramme of Epsom salt taken for analysis equivalent to 97·4 per cent. purity.

Morphine Salts.—The free alkaloid morphine is distinguished from all the other common alkaloids by its sparing solubility in ether, chloroform, benzene, and petroleum ether. The only solvent, immiscible with water, in which it is fairly soluble is amylic alcohol, which is usually employed in the separation of small quantities of morphine in toxicological investigations. The purity of the official salts is determined by weighing the morphine precipitated by addition of ammonia to a solution of 2 grammes of each salt in morphinated water, the precipitate being washed with the same fluid. The morphinated water, *i.e.*, water saturated with morphine by maceration with excess of alkaloid for several days, is employed in place of plain water to avoid the loss of alkaloid which would result from the slight solubility of the alkaloid in the wash-water used during the operation. The Pharmacopœia directs this morphinated water to be prepared with chloroform water, the presence of the chloroform preventing the decomposition of the weak morphine solution without, however, perceptibly influencing the solubility of the alkaloid.

* NOTE.—This series of articles should be read in conjunction with the series referring to the 1885 B.P., and published in the *P.J.* during 1897-8.

FLORAL CALENDAR FOR JANUARY.

In response to our request for lists of medicinal plants in flower in botanic gardens, Mr. G. Pinchbeck sends the following list of plants he noticed in flower during a recent visit to the Royal Garden, Kew:—

AMARYLLIDACEÆ.—
Galanthus cilicus.

CAPRIFOLIACEÆ.—
Lonicera standishii.

CRUCIFERÆ.—
Arabis procurrens, A. albida.

ERICACEÆ.—
Erica carnea.

EUPHORBIACEÆ.—
Euphorbia sibthorpii.

IRIDACEÆ.—
Crocus imperialis.

POLEMONIACEÆ.—
Phlox reptans.

PRIMULACEÆ.—
Primula.

RANUNCULACEÆ.—
Adonis amurensis, Helleborus niger v. Sylvestris, H. orientalis v. roseus.

ROSACEÆ.—
Potentilla fragariastrum v. alba.

SOLANACEÆ.—
Mandragora autumnalis.

As our correspondent remarks, this list speaks much for the mild weather we have been having lately.

PHARMACEUTICAL JOURNAL.

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THE SOCIETY AND THE TRADE.

The extent to which the Pharmaceutical Society represents the trade is of exceptional interest at the present moment, in view of the necessity for a very decided increase in the forces at the command of the Society's Executive, if a vigorous attempt is to be made to secure parliamentary powers to regulate the practice of pharmacy. At the end of 1898 the Society was apparently slightly weaker than at the end of 1897 in regard to the number of subscribing students, and actually much stronger in the support of the registered persons who constitute the real strength of the Society. The number of registered chemists subscribing to the Society was not only considerably more than it was twelve months earlier, but also exceeded the total for December 31, 1896, when high-water mark was last touched. The actual position at the end of each of the three years is shown in the following table:—

Subscribers.	1896.	1897.	1898.
Registered Chemists ..	4,825	4,775	4,840
Students	846	873	866
Total	5,671	5,648	5,706

In addition, whereas in January, 1897, only 76 registered persons and 91 students joined the Society, whilst in January, 1898, the additions were only 89 registered persons and 101 students, the figures for the current month were 326 registered persons and 141 students. The real position, therefore, at the date of the first Council meeting in January for three years past was as shown below:—

Subscribers.	1897.	1898.	1899.
Registered Chemists ..	4,901	4,864	5,166
Students	937	974	1,007
Total	5,838	5,838	6,173

That is to say, after being practically at a standstill for twelve months, the Society is now steadily increasing both in numbers and in force. There are, of course, some seven hundred associates who have not yet formally applied to have their names transferred to the list of members, but a fair proportion of those may be depended upon to take up their full qualification as members before the end of April next, and meanwhile the roll of members who have not formerly been connected with the Society is being steadily augmented.

Naturally, comparison of the membership roll of the Society with the Register of Chemists and Druggists reveals an equally marked improvement. The figures for the past three years, up to December 31 in each year, are as shown in the following table:—

Registered Chemists.	1896.	1897.	1898.
Subscribers.....	4,825	4,775	4,840
Non-subscribers	10,341	10,440	10,633
Total	15,166	15,215	15,473

If, however, we include the additions to the Register up to the date of the first Council meeting in January, the real position is shown to be much more satisfactory. Thus:—

Registered Chemists.	1897.	1898.	1899.
Subscribers.....	4 901	4,864	5,166
Non-subscribers	10 377	10,481	10,412
Total	15,278	15 345	15,578

The number of registered chemists connected with the Pharmaceutical Society, therefore, which has until recently been considerably below one-third of the total number of persons whose names are entitled to appear upon the Register of Chemists and Druggists, now virtually attains to that proportion, and is increasing as time goes on. In fact, the number of registered persons waiting for election at next week's meeting of the Council will make the total of members far in excess of that proportion.

But, encouraging as this increase is, it falls far short of what is requisite if the President and Council of the Pharmaceutical Society are to voice the desires of the whole trade in the matter of attempting to secure parliamentary sanction for regulating the practice of pharmacy and amending the existing poison law. If the hundreds of new members whose adhesion has recently been recorded had been thousands, the Society would now be in the proud position of including a definite majority of the registered chemists of Great Britain, such a majority as would have justified the Council in taking immediate action, in the direction of promoting legislative changes. As it is, the Society directly represents only one-third of the registered chemists in this country and includes barely half of those who are in business on their own account. From whatever point of view the matter is regarded, therefore, there is yet much too marked a disparity between the numbers of registered persons who do and do not support the Society, and a vastly greater measure of support may reasonably be looked for by those responsible for the conduct of affairs. If not a majority of those whose names appear on the Register of Chemists and Druggists, the Society should at least include a majority of the registered chemists in business on their own account, and the attainment of that ideal is the immediate task set before us.

ANNOTATIONS.

Registered Chemists have been Slandered without justification on many occasions, but no more unreasonable instance of the kind has presented itself of late than was illustrated by the *Daily Telegraph* of Monday last. A correspondent of that not always accurately informed newspaper wrote to complain that, having sent for a doctor at three a.m., and being in extreme need of the medicine prescribed, his servant was sent out to get it made up. "He visited no fewer than eighteen different chemists without success, and was unable to produce the medicine till eight the next morning. This was in the neighbourhood of the City." Accepting this statement as accurate, the *Telegraph* immediately assumes that it has discovered "another glaring example of how much London is behind large Continental and American cities" by the extreme difficulty there is, in certain quarters of the town, in getting a doctor's prescription made up between the hours of nine in the evening and eight in the morning. But no such difficulty really exists, and we quite fail to see why a purely imaginary state of things should be assumed to be a real danger and scandal in such a city as London, or why there need be any occasion to assert that it should no longer be tolerated. The real facts of the case are probably that the person who went in search of medicine came across a certain number of lock-up shops, most of which, doubtless, are not owned by registered chemists, and, moreover, did not know his London well enough to find what he required. Presumably, also, it never occurred to him to "ask a policeman."

Neither Chemists nor Doctors are very numerous in the City of London, properly so-called, for the residential population is not much greater than that of many small country towns which are unable to support more than one or two of each. Under the circumstances there does not appear any good reason why a large and constant supply of either medical men or chemists should be laid on in every street in the City, for the sake of the solitary correspondent of the *Daily Telegraph* who happens to require medical treatment between the hours of nine in the evening and eight in the morning. One would like to know whether it did not occur to the helpless person who could not find medicine being dispensed "in the neighbourhood of the City" at three a.m. to try Fleet Street, Holborn, or several other well-known thoroughfares which are usually regarded as being quite in "the neighbourhood of the City"? And is the grumbling correspondent always in the habit of obtaining his medicine from a registered chemist, or does he patronise drug-stores owned by unqualified persons between 8 a.m. and 9 p.m., and only remember the existence of the legitimate chemist when he ought to be in bed? In the latter event the best thing he can do is to establish a penny-in-the-slot pharmacy on his own doorstep, and abstain in the future from slandering chemists without good reason.

Is an Apothecary a Physician and Surgeon, and entitled to style himself so if he thinks fit? The question has been only imperfectly answered by Justices Lawrance and Channell, sitting as a Divisional Court (see p. 92). Some time ago a country medical practitioner, registered as a licentiate of the Society of Apothecaries, was convicted under the Medical Act, 1858, of "wilfully and falsely pretending to be and taking and using the name and title of physician," contrary to Section 40 of that Act. The defendant appealed, however, contending that, inasmuch as he was in possession of a diploma granted by the Society of Apothecaries, in pursuance of which he was entitled to practise medicine, surgery, and midwifery, he was entitled to take and use the titles of physician and surgeon. Mr. Justice Lawrance held that a person holding a certificate of the Society of Apothecaries is not entitled to describe himself as a physician, but he also expressed the opinion that the appellant's description of himself as a physician was not wilfully false, inasmuch as he used the title in good faith, believing that he was justified in doing so by a notice sent out by the Society of which he was a licentiate. Mr. Justice Channell was, upon the whole, of the same opinion. Dealing with the meaning of the word "physician," as used in Section 40 of the Medical Act, 1858, he pointed out that, before the passing of that Act, the word was commonly used as applying to persons in the highest grade of medical practitioners, and in that sense a licentiate of the Society of Apothecaries was not, in his opinion, a physician. But he did not think there was any binding authority as to the meaning of physician in the Section, and he must express his concurrence with Mr. Justice Lawrance in holding that the appellant had not wilfully misdescribed his qualification. The conviction was quashed accordingly. Apparently, therefore, though a licentiate of the Society of Apothecaries may practise as a physician, he must not style himself such.

The Unqualified Dispenser is one of the greatest public dangers that at present exists, and Mr. Glyn-Jones, by his timely letter to the Privy Council, is doing good service. The question is not whether medical practitioners are or are not exempt from the provisions of the Pharmacy Act, 1868, but whether they are justified in delegating a most important duty—affecting the safety of the public - to more or less incapable persons. Even the Local Government Board and other public authorities insist upon some sort of qualification being possessed by dispensers in the public services—though they place the standard low enough in all conscience—and we fail to see why medical practitioners should be allowed to extend their "licence to kill" to their coachman, page boys, maid servants, or any other untrained persons. The matter would be remedied very promptly if only the General Medical Council would deal with it as involving liability to be struck off the Medical Register for infamous conduct in a professional respect, and so long as the existing scandalous state of affairs is allowed to continue that Council is distinctly responsible and failing in its duty to the public. We are glad to see that at least one medical organ—the *Medical Press*—views the question of unqualified dispensers in a right light, and for the credit of other similar publications we hope to see equally definite expressions of opinion published elsewhere.

The Pharmacy Act Case reported last week is the subject of a note in the *Bradford Daily Telegraph*, which observes that there will probably be among its readers a few persons who will be disposed to regard the defendant as the subject of "persecution." A superficial reading of the circumstances disclosed, it is pointed out, is likely to cause perplexity to the uninitiated lay mind, and to lead to the conclusion that in the first place the defendant had to pay a penalty for selling a compound in which there was a poisonous drug, and in the second place that it was sought also to have him subjected to a penalty for having sold a compound in which there was no poisonous drug. Yet, the writer proceeds, it needs only a careful reading of the legal aspects of the matter to make it apparent that there was nothing really inconsistent in the whole proceedings initiated by the Council of the Pharmaceutical Society. A brief statement of the case is then given, which is remarkable both for its accuracy and for its fairness, much more than can be said of the comments in another local newspaper, referred to last week.

The 'Apotheker Zeitung,' in reviewing the events of the past year relating to the pharmaceutical affairs of this country, speaks of the provision now made for admitting all legally qualified persons to full membership of the Pharmaceutical Society, as being a provision of which there is the greatest necessity for advantage being taken if the qualified chemists and druggists desire to prevent the ground from being taken from under their feet. The intention of the Poisonous Substances Bill introduced last year by the Government is referred to as evidence which should stimulate activity in defence of the most vital interests of the craft through the medium of the Pharmaceutical Society, since it clearly demonstates that all available privileges should be exercised with that object. In speaking of the present position of the Pharmaceutical Society, the liberal policy of Mr. Carteighe in resisting opposition based upon false ideas of economy, and in providing the members with a journal of their own, as well as suitable premises in Scotland, is spoken of as being the basis on which his successor in the presidential chair has been enabled to carry through the important reform of giving the Society a broader foundation and greater influence in the future through its increased membership. The activity shown by provincial associations is also spoken of as a commendable manifestation, and the endeavour made by the Proprietary Articles Trade Association to check the unreasonable development of competition receives sympathetic approval.

The School of Pharmacy will hold its annual dinner on Wednesday, February 22, at 7 p.m., in the Caledonian Room, Holborn Restaurant. The chair will be taken by Professor Collie, Ph.D., F.R.S., F.I.C., Dean of the School. Application for tickets (price 5*s*. each) will be gladly received by the Honorary Secretary of the Dinner Committee, Mr. F. A. Upsher Smith, 17, Bloomsbury Square, London, W.C. Past students are asked to keep the date open, so that the gathering may be as fully representative and enjoyable as its predecessors have been.

Private Posting Boxes are the latest luxury offered to the public by the Postmaster-General, who announces that on February 1 next he will be prepared to introduce experimentally, in London, a system under which he hopes that many householders will be able to post letters in their own houses. With this object the fees for private posting boxes, which have hitherto been available for large business firms and a few wealthy institutions and householders, will be reduced to a scale enabling the ordinary householder to avail himself of such a box. The initial fee, for which two collections daily will be given, will be one pound per annum, and additional collections can be arranged for if desired. The posting box, lock, and keys will be provided by the user, subject to the pattern being approved by the Post Office, but the Post Office will pay for the repair of the locks and keys. The user of the box will not be allowed to have a key of the box; and as a letter, when once placed in such a box, becomes the property of the Postmaster-General, no attempt must be made to recover any such letter; nor can it, under any circumstonces, be given back to the writer. Applications in regard to the use of private posting boxes should be made to the Controller of the London Postal Service, General Post Office, E.C.

The Open-Air Treatment of Consumption is very much to the fore at present, and a correspondent of the *Daily Chronicle* has sent a remarkable and interesting personal experience as a contribution to the discussion on the subject. When a young man he enlisted in the Royal Marine Artillery, from which he was invalided out—"a shadowy stripling"—in 1868, suffering from phthisis, a disease from which his father had died at the age of forty-two. He obtained an engagement as "general utility" in a travelling company, and whether by accident or design, he began to treat himself—save, perhaps, that his diet was not on so liberal a scale—very much as the patients at Dr. Walther's Black Forest sanatorium are treated. He had a cold bath every morning, and a long walk in the country, regardless of the weather, and lasting perhaps for three hours, during which he read or recited aloud the part he was engaged in learning. If he had no part to learn, he read aloud, sang, or recited. After eighteen months of this treatment he was a hale and hearty man, "free from all trace of consumption, and as sound in wind and limb as any man in her Majesty's service." His diet during this time consisted of the plainest food—brown bread, milk, butter, and fruit being the chief articles in it; he did not smoke, and was nearly a teetotaler. To day he is still a member of a travelling company and in perfect health. In spite of his fifty-two years, he can walk thirty miles a day with ease; he acts and sings and is described as being a fine figure of a man.

Professor Dewar was unfortunate last week when he lectured at the Royal Institution on liquid hydrogen, but his disappointed audience has, at least, the satisfaction of knowing that the gratification of seeing this most irreduciblo of all gases in the liquid state is only deferred. When the lecture commenced the operation of liquefaction was proceeding as satisfactorily as could be desired, but before a sufficient quantity of the liquid hydrogen could be collected for inspection by the audience, the orifice from which it was dropping became choked by solidified air. It was not the moisture of the air, but air itself which had first liquefied and then became as hard as adamant. The application of heat would readily have cleared the orifice, but some three hours or more would have been occupied subsequently in cooling the apparatus to the necessary point once more, and it was quite out of the question to ask the audience to possess themselves in patience for so long a time. As it was, the lecture proved attractive enough in itself without the presence of the missing liquid, and inasmuch as there is now little left to be shown that is sensational in the shape of liquefied gases, it is, perhaps, just as well that the gratification of beholding this most costly of all liquids is held in reserve.

The Revision of the United States Pharmacopœia is always proceeding, to a greater or less extent, but definite steps are now being taken in connection with the production of the 1900 Pharmacopœia. and, according to the *British Medical Journal*, the Committee of the Medical Society of the State of New York on the United States Pharmacopœia has issued a circular, asking aid in its efforts to stimulate a greater interest in the approaching revision of that book. The following six propositions have been formulated, upon which comments are requested:—(1) That all drugs and preparations not now prescribed to any extent by physicians be dismissed; (2) That all chemical drugs necessary to other preparations, but which are not directly prescribed, be placed in a list apart from the body of the work. (3) That doses be included in the next revision. (4) That doses be placed in the index rather than in the text of the book, in order to secure reference and to avoid making them official. (5) That a section be devoted to giving reliable information concerning new remedies without in any sense making them official. (6) That an annual supplement of a few pages for the purpose of continuing similar disinterested information concerning new drugs be issued.

LECTURES ON PREVENTIVE MEDICINE.

The "Gresham" Lectures on preventive medicine delivered last week by Professor E. Symes Thompson, at Gresham College, attracted a large and appreciative audience. The first lecture dealt with the general subject of recent advances in preventive medicine, the splendid results of Lord Lister's "antiseptic" treatment being specially commented on, and the application of this treatment to medical as well as surgical cases explained. The subject of consumption, with which these lectures were chiefly concerned, was then brought forward, and the necessity of awakening the public to the facts recognised by the scientific world insisted on; the most important of these facts being that consumption is an infectious disease, and curable, instead of being, as formerly supposed, hereditary, and incurable. While sensitiveness to consumption may be hereditary, the disease itself is not hereditary, and cannot develop in the absence of the tubercle bacillus; therefore, every effort must be made to ensure its absence. Proper sanitation and due attention to hygienic conditions will do much in this direction. Dust is an important factor in the spread of contagion; bacteria readily attach themselves to the particles, and are then quickly disseminated. The speedy and effectual removal of dust should therefore be provided for, particularly in houses or rooms where there are consumptive subjects, and great care should be taken in the latter case to gather it up, and not to scatter it. Cases are recorded of infected houses; the successive inhabitants have become affected, without apparent cause, with tuberculosis, and the evil has eventually proved to arise from the dust, which, accumulating in corners or under floors, has nursed the germs of disease, with disastrous results. The necessity for the most scrupulous cleanliness cannot therefore be too strongly insisted on.

The Second Lecture was devoted to the subject of the tubercle bacillus, and was illustrated by lantern slides, which compared the bacillus of consumption with the bacilli of other diseases; it shows a tendency to remain long quiescent, or even to dry up and die, when found alone, but when associated with other micro-organisms it is usually very active, and the disease consequently assumes a more virulent form. In persons over the age of fifty it is generally found alone, and hence the disease tends to become latent, or to disappear altogether; while in the young subject the more active condition of the bacillus is the general rule. As illustrating this tendency to become latent the lecturer mentioned that post-mortem examinations of the bodies from the Morgue, in Paris, show that no less than 40 per cent. of these persons have suffered from consumption during some part of their lives; traces of the disease are, of course, always found in lungs that have been affected. Koch was the first to obtain a pure culture of the tubercle bacillus, a matter of great difficulty, because it is usually associated with other bacteria, which grow much more rapidly than it does, and so destroy the nutritive medium in which the cultivation is made.

The Bacteria of Different Diseases are not only distinguishable by their microscopical characteristics, but the form assumed by the colonies when growing on a nutritive material in a test-tube is, to the eye of an expert, a valuable indication of their nature. Several tubes containing cultures were on the lecture table, and the audience thus had an opportunity of observing the striking differences in the mode of growth of colonies of the various micro-organisms, many millions of individual bacilli being, of course, contained in each tube. These organisms are in their nature fungi, and their mode of increase is by fission; the poison produced by them has in some cases been isolated from the cultures, and is found to produce the same effect as the bacteria themselves. These "cultures" are of immense importance, as giving an accurate knowledge of the life history of noxious organisms, and thus the observations made in the laboratory are able to suggest the lines on which medical treatment must be based. Fresh air and sunshine are found to be inimical to bacteriological life, and so the "open-air" treatment of consumptive patients is introduced.

Unfortunately the Antitoxin, which it was Koch's aim to prepare, has not proved to be a satisfactory means of dealing with this disease, its use being attended with an introduction of other disorders, and consequently complication of the case. Experiments are, however, still being carried on, and it is hoped that in time an antitoxin may be produced which will be as successful in arresting tuberculosis as the diphtheria antitoxin has been in dealing with that disease. Even without such aid, the increased attention given to the subject, and the scientific knowledge brought to bear on it, have led to a remarkable diminution of tubercular disease, and the annual deaths from it are now 50 per cent. less than they were fifty years ago. It is now recognised by the medical profession that the fever connected with consumption has peculiarities, and is characteristic of the disease; the temperature rises regularly during the afternoon and falls during the evening, and this is so diagnostic that it is possible to recognise the disease by the temperature chart alone. The third lecture dealt fully with the subject of open-air treatment and the remedial action—preventive and curative—which it induces. High altitudes are of great value in the treatment of consumption, chiefly because to obtain the requisite amount of oxygen in the lighter air a deeper inspiration must be taken, and the lungs consequently more completely ventilated than under ordinary atmospheric pressure, and expiration is also much more complete. The institution for the cure of consumption at Nordrach (14,000 feet above sea level) has been very successful. The treatment consists in free exposure, night and day, to the fresh air, free access of sunlight into all rooms, abundant meals, graduated exercise, and strict medical supervision.

The Absence of all Excitement is insisted on, and patients showing any degree of fever are kept in bed; the doctor sees each patient at least three times a day, temperatures are taken every four hours, and the prescribed amount of exercise has to be taken so that it is over at least an hour before any meal, that hour being spent in absolute rest, even speaking not being allowed. The authorities reserve the right of opening all parcels sent to patients, so that no outside interference with the regimen is possible. The results of this treatment are wonderfully satisfactory, and the patients themselves soon become most anxious to carry out faithfully all the doctor's orders, and reconciled to the somewhat monotonous mode of life by the improved health they soon experience. Unfortunately, the improvement is not always permanent, a return to the ordinary conditions of life being sometimes attended by a relapse, particularly when confinement indoors is the rule. In many cases, however, the good results are permanent, and complete cures are effected. The lecturer insisted on the point that there is no risk of infection to those nursing consumptive patients if proper precautions are taken, the chief source of danger being the expectoration, which should be destroyed by burning, as if allowed to become dry the bacteria which it contains get into the air, which will then carry the living poison to the lungs of those inhaling it.

Consumption in Children is most frequently caused by the imbibition of milk from tuberculous cows. In the fourth lecture, on bovine tuberculosis, the Professor dealt with this grave question, and pointed out that the present arrangements for the inspection of milk are, so far as tuberculosis is concerned, so ineffectual as to be almost useless. The fact that the death-rate from mesenteric disorders is constantly increasing, while that from consumption of the lungs has steadily decreased for many years, sufficiently indicates the need for more adequate measures in this department. Children are the chief sufferers, because it is by them that the greatest quantity of milk is taken. Tuberculosis in cows is induced and increased by their being kept in dark and badly ventilated houses, and the only remedy is to change these conditions. Efficient inspection of all cowsheds and dairies is urgently needed, and until it is assured all milk should be boiled or otherwise sterilised. It may be noted that, while tuberculosis is frequent in the cow, it is so rare as to be almost unknown in the calf, and so no apprehensions need be entertained of its being introduced into the human subject by vaccination. Various domestic animals besides bovines are subject to tuberculosis; pigs, dogs, cats, rabbits, rats, and mice being all susceptible to it; horses are very rarely affected.

Cage Birds are an important though generally unsuspected source of infection, canaries and parrots particularly being very sensitive to the disease, and frequently passing it on to the human subject; when it is remembered that 400,000 canaries are imported into this country every year, it will be seen that the danger from this source alone is not slight. The unnatural conditions under

which the birds live when in confinement render them peculiarly liable to be affected. In like manner diphtheria is often transferred from fowls to human beings, and those first affected having generally only slight attacks, which are not recognised as diphtheria, are not isolated, and so the infection spreads, the disease becoming more virulent as it passes from one to another. The lecturer concluded by expressing a hope that the public would intelligently co-operate with the medical profession in their efforts to stamp out the scourge consumption in all its forms.

CHEMICAL SOCIETY.

A meeting was held on Thursday, January 19, at 8 o'clock, Professor Dewar, F.R.S., in the chair. A large number of papers were down for reading, but many were taken as read, in the absence of the authors. These included the following:—"The Thermal Effects of Dilution," by J. Holmes Pollok: "The Changes of Volume Due to Dilution of Aqueous Solutions," by B. H. Wade, B.A.; "The Reduction of Optically Active Mono- and Di-Alkyl Oxysuccinic Acids from Malic and Tartaric Acids," by Thomas Purdie, F.R.S., and William Pitheathley, B.Sc.: "Some Halogen Derivatives of Acetone-dicarbonic Acid," Part I., by F. W. Dootson, M.A.; and "The Detection and Determination of Sucrose in the Presence of Lactose," by Edwin Dowzard.

Among the papers that were read was one by F. Stanley Kipping, Ph.D., D.Sc., F.R.S., and Alfred Hill, on

α-Keto-Tetrahydro-Naphthalene.

An attempt was made, and proved successful, to form a ring compound, by taking advantage of the reactions of the acid chloride of phenyl-acetic acid, and certain similar acids. For example, the acid chloride of phenyl butyric acid was obtained, dissolved in light petroleum, and aluminium chloride added. By condensation, with elimination of water, the ring compound α-keto-tetrahydro-naphthalene was produced. The derivatives of this substance with their melting points were then discussed; it was mentioned that the oxime on reduction gave a base.

A paper was then given by William A. Bone, on

A New Method of Preparing Asymmetric Dimethyl, and Trimethyl Succinic Acids.

The sodium derivative of ethylmalonate was treated with an α-bromo fatty acid. An ester of ethyl acrylic acid was obtained. Details were given for the conversion of this substance into one of the asymmetric succinic acids after condensation with ethyl malonate. The author stated that the sodium derivative of ethyl cyanoacetate gave an almost theoretical yield of dimethyl-succinic acid.

Papers followed on the "Esterification Constants of Substituted Acetic Acids," by J. J. Sudborough, Ph.D., and Lorenzo L. Lloyd; "Di-ortho Substituted Benzoic Acids," Part IV."; "The Formation of Salts from Di-ortho Substituted Benzoic Acids and Different Organic Bases," by the same authors; and "Researches on Moorland Waters, Part I., Acidity," by W. Ackroyd.—The meeting then adjourned.

ROYAL INSTITUTION.

A discourse was delivered on Friday, January 20, at 9 p.m., by Professor Dewar, F.R.S., on

Liquid Hydrogen.

The wealth of experimental illustrations with which Professor Dewar adorns his lectures is always sure of securing him a large audience, even if his subject be less new or less wonderful than that which he chose on Friday night. The lecture table was crowded with apparatus for showing the properties of liquid hydrogen, and the available space in the theatre was filled with a crowd of distinguished visitors, including the Chinese Ambassador, Sir Frederick Abel, Sir William Crookes, Sir Gabriel Stokes, and many other scientists equally celebrated. At the commencement of his lecture the Professor remarked that any one of the extraordinary difficulties of procuring samples of the liquid might result in disappointment to his hearers, but that he had left the liquid dripping from the apparatus in a way that left nothing to be desired. The lecturer went on to give a historical sketch of the liquefaction of gases, dwelling at some length on the value of the work of Wroblewski and Olszewski. It is interesting to note that Faraday thought, in 1852, that the controversy as to whether hydrogen was a metal or not would probably be solved if it could be brought to the liquid or solid condition. The work of Andrews, Graham, Pictet, and Cailletet was referred to; this led to the consideration of the lecturer's own part in the liquefaction of hydrogen, and to the properties which he has found it to possess. The pure liquid is transparent and colourless, with considerable refractive power. It has a well-defined meniscus, capillarity being well marked. It has not the appearance or properties of a metal, and shows no marked absorption. It does not conduct electricity. The density is deceptive; at first it was thought to be one-half that of liquid air, which has about the same density as water, but further investigation indicated it to be 0·07, or one-fourteenth that of water. It is, therefore, six times less dense than liquid marsh gas, the lightest known liquid. Air or oxgyen at once freezes and solidifies when brought in contact with liquid hydrogen; an open empty glass tube when immersed in it immediately becomes filled with solid air; on removing the tube, and holding it in the atmosphere, liquid air drops from it. The same result is achieved with a tube closed at one end. If any solid body be immersed in the liquid and placed in air, a coating of solid air is visible at once, and in a short time liquid air will commence to drop. It is necessary to prevent contact with air as much as possible, because, in solidifying, air liberates so much heat that a great quantity of liquid hydrogen is volatilised. A plug of cotton wool, after immersion in the liquid, is highly magnetic. At first sight it may be thought that this is due to the liquid hydrogen possessing magnetic properties, but this is not so. The magnetic properties are due to the oxygen contained in the particles of solid air, which at present serve to mask the real properties of liquid hydrogen in the most persistent manner imaginable. Undoubtedly the most important use of the liquid hitherto discovered is in the production of high vacua. In a second or two a vacuum is obtained which is perfect within a ten-millionth part of an atmosphere. At first the lecturer had found difficulty in devising a suitable vacuum vessel for the reception of liquid hydrogen, but soon he recognised that no elaborate apparatus was necessary, because liquid hydrogen makes its own vacuum. Therefore, all that is necessary for its isolation from heat is to collect it in a test tube, the top of which is sealed to a slightly larger one. The physical constants of liquid hydrogen reveal extraordinary anomalies as compared with those of other elementary bodies, on account especially of its small atomic weight. It boils at −238° C., that is to say, at 35° absolute. Its specific heat, 3·2, is enormous, in comparison with that of water. Professor Dewar then spoke of the platinum resistance thermometer, its powers and limitations. Since it would have no resistance at the zero of absolute temperature, but become an infinite conductor, he was unable to entertain any hopes whatever that the gap between the boiling point of liquid hydrogen and the absolute zero of temperature would ever be bridged over. The lecturer concluded by explaining the cause of his inability to exhibit the liquid to the audience. The nozzle which was delivering liquid hydrogen at the commencement of the lecture had since become choked with a mass of solid air as hard as adamant, and it would take three hours before it would be possible to thaw the mass. He promised, however, to take the earliest opportunity of making up for the present disappointment, and hoped that by that time a means would be found whereby similar disappointment might be prevented.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

A meeting was held on Friday, January 20, Mr. Cyril M. Battle in the chair.

The first paper was by Mr. T. E. Wallis, on

A Materia Medica Cabinet,

and is printed in full at page 76. A good discussion followed the reading of the paper, and members were unanimous in admiring the extremely neat and concise cabinet which Mr. Wallis exhibited. There was some doubt expressed as to whether it is desirable to study materia medica from specimens in small cabinets, as some wrong impressions may be retained as to the characteristic size of the drug.

Mr. F. A. Upsher Smith then brought forward two short

Dispensing Notes.

The first dealt with a formula for

Creosote Pills,

proposed by M. Agosti, an Italian pharmacist, and modified by M. Delhaxhe, that appeared in the *Pharmaceutical Journal* of November 12, 1898, p. 505. This formula gives satisfactory results if the smaller proportion of water which is recommended in the above article be again halved. Converting the quantities into English weights, the latest modification of the formula stands as follows :—

Take of—

Creosote	12 grains.
Distilled Water	3 ,,
Powdered Licorice	30 ,,

Mix and divide into twelve pills. These, samples of which were handed round, weigh $3\frac{3}{4}$ grains each ; they possess a firm consistence, and show no tendency to ooze with creosote. The substitution of licorice for soap—the usual excipient for creosote pills—should commend this formula to the notice of pharmacists. Experiments made with althæa show that it is not suitable for creosote pills ; using it in varying proportions an unworkable, stringy mass was obtained.

The second note had reference to an

Incompatible Mixture

of Donovan's solution and mercuric chloride solution. The following prescription gave a clear mixture when the ingredients were separately well diluted and then mixed :—

℞ Liq. Donovani	ʒi.
Liq. Hydrarg. Perchlor.	ʒi.
Aq.	ad ʒvi.

As this result did not accord with Squire's 'Companion,' 1894, which notes the incompatibility of these ingredients, a few experiments were made with a view of elucidating the question. When well diluted, it appears that the order of mixing makes no difference whatever ; in either case a clear mixture is obtained. If, however, the strong solutions (both made according to the Pharmacopœia) be mixed, a deposit of the red iodide of mercury is unavoidable, though it is far more pronounced when the Donovan's solution is added to the mercuric chloride solution than when the order is reversed, the former when made exhibiting a reddish opalescence, the latter only showing a red tint by transmitted light. Both mixtures clear on standing for a few days, giving a deposit of the red mercuric iodide. It is easy to dispense the mixture as clear as water if the strong solutions be mixed in a test-tube and gently warmed before dilution, until the precipitate just dissolves. There being no advantage in this method, it is preferable to dilute well before mixing. Further experiments were then made, in order to find out whether the same results would follow when maximum doses were ordered in the prescription. The following proportions were therefore taken :—

℞ Liq. Donovani	℥ 80.
Liq. Hydrarg. Perchlor.	ʒiv.
Aq.	ad ʒii.

In this case it is not possible to make a clear mixture ; whether the ingredients be diluted before or after mixing them, or whether the mixed strong solutions be warmed a red precipitate is invariably the result. The investigation therefore demonstrates that Donovan's solution and mercuric chloride solution *are* incompatible in all but very weak dilutions. In strong solutions they deposit red mercuric iodide. It seems likely that in all cases mercuric iodide is formed, and is deposited when the solution is saturated with it. The author threw out the suggestion that a new double compound, corresponding with the formula $HgCl_2.AsI_3$, may very possibly be present in the mixture, which would account for the mercuric iodide being thrown out. He remarked that his apology for bringing so trivial a note before the Association lay in the obvious moral that may be drawn from it, viz., that apparent discrepancies in published statements will often disappear on further investigation.

After Mr. Smith had concluded his paper, Mr. Payne asked whether Martindale's formula for creosote pills was not suitable, also whether any compound is formed when the soap and creosote are digested together.

This and other queries having been replied to by Mr. Smith, the meeting terminated.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.

On Friday last, at the Alexandra Assembly Rooms, Mr. W. Spencer-Turner, of Wellingham, read an interesting paper on

The Leaves of Our Common Wild Plants and Trees,

which he illustrated with drawings, mounted objects, and microscopical slides.

Mr. Alderman Deck presided over a large attendance, including several ladies.

Mr. Turner's paper was a summary of the general facts of the development, structure, and physiology of leaves, but he introduced a fund of anecdote, poetry, and quotation that imparted new interest to a well-worn subject, and brought himself round to materia medica by touching first upon the native B.P. plants, then on the *Scopola*, and finally on the general interest attached to the places where B.P. leaves are collected and exported from.

Mr. A. Sidney Campkin, in an interesting and humorous speech, proposed a hearty vote of thanks to the lecturer, especially as he, the lecturer, had come at considerable inconvenience from a distance, in very inclement weather.

Mr. E. Saville Peck, in a practical and characteristic speech, seconded, and, with a few highly complimentary words to the Chairman, put the vote, which was received with great enthusiasm.

Mr. Turner briefly responded, and expressed his pleasure at the opportunity that had been afforded him to meet such a large and appreciative audience.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

On the recommendation of Mr. Alan H. Ware, pharmaceutical chemist (of the Exeter School of Pharmacy, attached to the Exeter Technical and University Extension College at the Albert Memorial Museum), the Principal (Mr. A. W. Clayden, M.A.) has awarded the prizes kindly offered to the pharmaceutical students by members of the Exeter Association of Chemists and Druggists as follows :—

The prize of one guinea, offered by Mr. G. Stocker for the best herbarium of British plants collected within ten miles of Exeter, to Mr. E. F. Dewdney. Mr. Stocker has himself examined this collection and has awarded Mr. Dewdney the prize.

The prize of one guinea, offered to the senior chemistry students by Alderman H. Gadd, J.P. (formerly President of the Association—Messrs. Evans, Gadd and Co.), to be divided between Messrs. Monks and Berg, who each obtained a success in the advanced stage of inorganic chemistry and worked well during the session.

The prize of one guinea offered to junior chemistry students, by Mr. P. F. Rowsell (Hon. Secretary of the Association, and of Messrs. Holman, Hain and Co.), to be divided between Messrs. Nation and Samways, who each obtained a first class in the elementary stage of inorganic chemistry, and worked well during the session.

No student competed for the prize kindly offered by Mr. J. Hinton Lake (Vice-President of the Association) in connection with the pharmacy and materia medica classes. Consequently, his prize (value one guinea) will this year not be awarded.

NORTH STAFFORDSHIRE ASSOCIATION.

A monthly meeting of the North Staffordshire Chemists' and Druggists' Association was held at the Copeland Hotel, Stoke, on Thursday last.

Mr. J. Adams, Vice-President, was in the chair, and there was a fair attendance of members.

The notice calling the meeting stated that a general discussion would take place, and the business was of an informal nature.

The only resolution was one moved by Mr. Croydon (Newcastle), suggesting that the Hon. Secretary of the Association (Mr. Edmund Jones) should send up a list of the names of chemists who intended to join the Pharmaceutical Society to the Secretary of that Society, so that he could communicate with the local secretaries or the individuals themselves.

Mr. Charles (Burslem) seconded, and the resolution was carried.

NEW REMEDIES.

SALIGENIN IN RHEUMATIC AFFECTIONS OF THE JOINTS.—With saligenin given in daily doses of 3 grammes, Walter (*Münch. Med. Woch.*) has obtained good results in numerous cases of gouty or rheumatic arthritis. Under its influence all inflammation disappears. Saligenin is more efficient in such cases than the salicylates, its effects are more lasting, and it gives rise to no secondary symptoms.—*Nouveau. Rem.*, 14, 456.

ASAPROL IN PERTUSSIS.—Moncorvo has had great success with the local application of a 1 per cent. solution of asaprol, painted by means of a brush with a long curved handle, on the posterior pharangeal walls and about the region of the glottis. In every instance where the case was treated from the beginning of the attack it was cured before the convulsive stage was reached. Where this point had been reached before treatment, the attack was cut short in five to ten days.—*Glasg. Med. Journ.*, 50, 236.

CASANTHROL.—Unna describes under this name a mixture of unguent. caseini with 10 per cent. of extract lithanthracis (which is the ether and benzene soluble portion of coal tar). Casanthrol belongs to the so-called water-soluble varnishes. It is a thick glutinous emulsion, which liberates no fat on warming. Placed on the skin it forms a dry elastic coating in a few minutes. It does not prevent perspiration, but rather increases it. Casanthrol can be mixed with anything that does not cause the casein to coagulate; it should not be mixed with mineral acids, or lime salts in quantities of more than 10 per cent. Dr. S. Beck (*Ung. Med. Pr.*) recommends casanthrol for eczema in children, prurigo, etc., as it has no unpleasant after-effects. It is the only preparation of tar which, in the concentration state, can be used with good results on inflamed exuding skin.—*Pharm. Post*, 29, 451.

BROMO-CAMPHOR IN CHOREA.—A rapid cure has been effected in several cases of chorea, according to Bourneville and Katz, by the use of bromo-camphor. A case of a girl of 13 is described as being entirely cured in less than two months of typical chorea, which had existed for four weeks. The remedy was given in capsules containing 20 centigrammes, increasing from two to nine capsules daily and decreasing as the improvement continued.—*Münch. Med. Wochen.*, 1898, 1163.

IODALBACID.—This is an organic compound of iodine, which is odourless and tasteless, and contains 10 per cent. of iodine. When taken internally, it slowly liberates the halogen, and is, therefore, chiefly useful in the treatment of those affections in which a long-continued influence of iodine is desirable. According to Zuelzer, it is valuable in the treatment of syphilis. It is given in tablet form, each containing half a gramme, several tablets being taken per diem, for a considerable period.—*Zeits. des allg. Ost. Apoth. Ver.*, 52, 516.

CHLORALBACID.—This is a new remedy for certain gastric affections, such as gastric catarrh and dyspepsia; under its influence the bacteria of fermentation and putrefaction are much lessened in number and a healthy digestion with increased appetite and better assimilation is obtained. It is given in doses from half a gramme to 10 grammes per diem.—*Zeits. des allg. Ost. Apoth. Ver.*, 52, 516.

EUDERMOL (NICOTINE SALICYLATE).—Under the name of eudermol Marquart employs an ointment of nicotine salicylate and vaseline in the treatment of sycosis and similar skin diseases. The salt occurs as colourless hexagonal tables, which melt at 177·5° C c. It is stable when carefully stored.—*Zeits. des allg. Ost. Apoth. Ver.*, 52, 518.

EXTRACTUM GLAUCII.—An extract from the root leaves of *Glaucium luteum* has proved an effective remedy for diabetes. The treatment commences with half a teaspoonful of the fluid extract taken three times a day, increasing gradually to a teaspoonful and a half. A special diet need not be adhered to.—*Pharm. Post.*, 31, 66.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

THE QUALIFICATIONS FOR REGISTRATION as a pharmaceutical chemist in New Zealand without examination are as follows:—Any person of the age of twenty-one years or upwards, (1) Who, at any time before the first day of January, one thousand eight hundred and eighty-one (*a*) Has for not less than three years been employed as a dispensing chemist in the surgery of any legally qualified medical practitioner, or in a hospital, charitable institution or other public institution in New Zealand; or (2) Who, at any time after the first day of January, one thousand eight hundred and eighty-one, and, before the coming into operation of the new Act, has for not less than two years kept, either as owner or manager, open shop as a dispensing or homœopathic chemist; or who has for not less than two years been solely employed as dispensing chemist by any legally qualified medical practitioner; or (3) who holds a certificate or diploma of competency as a pharmaceutical chemist, or as a chemist and druggist or homœopathic chemist, from the Pharmaceutical Society of Great Britain, or a certificate or diploma of competency from the Pharmaceutical Society of Ireland; or (4) who holds a certificate or diploma of competency from any college, board of pharmacy, or pharmaceutical society recognised by the board under any regulations made under this Act; or (5) who is a legally qualified medical practitioner.

FOR APPLICANTS SUBJECT TO EXAMINATION, Clause 30 of the new Act provides for the registration of any person of the age of twenty-one years or upwards who (1) Has passed the examinations prescribed by the board in the subjects of materia medica, botany, chemistry, practical chemistry, pharmacy, practical pharmacy, and such other subjects, if any, as from time to time are prescribed by the board with the approval of the Governor and notified in the *Gazette*; and also (2) Has served for at least three years under articles of apprenticeship as the apprentice of a registered chemist, or chemist and druggist, or homœopathic chemist, keeping open shop for the compounding and dispensing of prescriptions. It is provided, however, that apprenticeship shall not be necessary in the case of any person who passes the prescribed examination on or before July 1, 1899.

ONE OF THE MOST IMPORTANT CLAUSES of the measure is 39, which prohibits any but registered chemists from dispensing physicians' prescriptions. On the other hand, under Clause 32, any person or registered company keeping open shop for dispensing prescriptions is entitled to demand from the Board the enrolment of any chemist as his or its manager. Among other changes introduced is that in the constitution of the Pharmacy Board, which is to be composed of ten instead of seven members as at present—four to be a central executive, located in each one of the four chief cities of the colony—Christchurch, Wellington, Dunedin, or Auckland—as may be decided by a vote of all the registered chemists of the colony, and two from each of the other three centres; and, instead of being changed every three years as at present, the executive is to remain in the place where first located till another vote of registered men decides on its removal.

THERE IS NOTHING OF SPECIAL INTEREST to report from New South Wales, further than that our brethren of that ilk have come to the conclusion that they are not in a position to further financially support their recognised organ, the *Pharmaceutical Journal of Australasia*, which, by the way, your readers must not confound with the Melbourne publication, the *Australasian Journal of Pharmacy*. The latter, it may be here remarked, has now published its 155th monthly number, and gives every indication of vital energy. The now defunct publication, it may be stated, was first started under the name of the *Australian Chemists' Review*. Taken over subsequently by the Pharmaceutical Society of New South Wales, the title was changed to that of the *Pharmaceutical Journal of New South Wales*, and subsequently transmuted into the more ambitious one of the *Pharmaceutical Journal of Australasia*.

THE MATTER WAS FINALLY DISPOSED OF at the October meeting of the N.S.W. Society, when the editor, Mr. Brothwood, explained that when he took the journal in hand it was considerably in debt; at the present time it was absolutely free from liabilities, principally owing to his own personal influence in securing adver-

tisements. He wished, however, to be relieved of the worry and responsibility, and, failing the Society agreeing to take the journal off his hands, suggested that they should accept certain proposals made by the proprietary of another trade paper. The Society did not see its way to undertake the responsibility, and eventually decided to accept the alternative offer. Referring to the subject, the *Australasian Journal of Pharmacy* contents itself with the remark that "It is a matter of regret that so little enterprise exists in the mother colony that an independent local journal could not be maintained, and the transfer referred to leaves the *Australasian Journal of Pharmacy* and the *Chemist and Druggist of Australasia* the only pharmaceutical publications in Australia." Mr. Brothwood's own pathetic remarks on the subject are worthy of note. Speaking of his literary work for several years as "a labour of love," he added that "the apathy of chemists in general had not tended to relieve him in any way; so few of them took any interest whatever in matters which would tend to improve the position of the profession that at times it had been a very difficult matter to obtain information which would be of interest, and so had made it a hard task to produce a successful journal."

LEGAL INTELLIGENCE.

QUEEN'S BENCH DIVISION.

A Question of Medical Titles.

On Tuesday, January 24, the case of Hunter *v.* Clare came on for argument before Mr. Justice Lawrance and Mr. Justice Channell, sitting as a Divisional Court in the Queen's Bench Division of the High Court.

Mr. Haldane, Q.C., M.P., said this case raised an important question, and the real parties to it were the Society of Apothecaries (for whom he appeared) and the General Medical Council, represented by his learned friend, Mr. Muir Mackenzie. The question their lordships had to decide was, Whether a gentleman who was a licentiate of the Society of Apothecaries was entitled to describe himself as a physician? The case came before the magistrates at Cambridge, and they stated a special case to raise the question whether he was rightly convicted under Section 40 of the Medical Act, 1858. The summons was against Mr. Herbert Kingsley Hunter, of Cambridge, for wilfully and falsely pretending to be, and adopting the style of a physician, contrary to the Medical Act. The magistrates convicted the appellant and fined him £5 and 3 guineas costs. They found the following facts: That the appellant is a duly registered medical practitioner, entitled under the Medical Act to practise medicine, surgery, and midwifery, and that under the Statute of 1886 no one is entitled to be registered or practise as a medical practitioner in any shape or form without being qualified in all the three subjects. Next, that the appellant did, in December, 1897, attend one Wm. Hawkins, and made use of the name and title of physician by causing to be printed and delivered to Wm. Hawkins certain bill-heads containing the following words: "To Herbert Hunter, physician and surgeon. For professional attendance." On the part of the appellant it was contended that, being in the possession of a diploma granted by the Society of Apothecaries in October, 1893, certifying he was licensed to practise all three subjects, in pursuance of which he was admitted a licentiate of the Society, and registered as such, he was entitled to use and take the title of physician and surgeon if he thought fit so to do. What the appellant did was to describe himself on his plate and in his accounts as physician and surgeon. Two summonses were taken out with respect to each of the titles, but only one summons with respect to the use of the term physician was now before their lordships. The magistrates further found that the appellant used the titles in good faith, believing he was justified in doing so by a notice sent out by the Society of Apothecaries to their licentiates, and the Society was now defending its own instructions. That notice said that licentiates of the Society of Apothecaries from 1886 might call themselves by any title or titles denoting their right to practise medicine, surgery, and midwifery, providing they did not directly or indirectly hold themselves out as possessing any other degree or diploma other than that of the London Society of Apothecaries. That was the distinction, and he adopted the notice as his argument. If he was right in his point, then the conviction must be quashed. He understood the contention of the Medical Council was that no one could describe himself as a physician unless he were a member of one of the Colleges of Physicians, and that he broke the law if he did so.

Mr. Justice Channell said the sole and entire question seemed to be what was the definition of the term "physician" under the Medical Act. Did it mean only a person connected with one of the legally recognised Colleges of Physicians, or did it include a properly licensed and duly qualified practitioner?

Mr. Muir Mackenzie referred to a good many statutes and legal authorities, and contended that the effect of these was to deprive the licentiates of the Apothecaries' Society from describing themselves as physicians.

Mr. Justice Lawrance eventually held that the appellant was not entitled to use the style and title of physician, as it was contrary to the Medical Act of 1858. He thought, however, that he was not doing it "wilfully and falsely" as the information alleged, and therefore the conviction would be quashed on that ground alone, without costs, as the magistrates were right in the main question of law, which was the important question that had been argued.

Mr. Justice Channell concurred, and said he thought the appellant was not a physician in the technical sense of the term as intended by the Statute. As the appellant, however, had only "falsely" described himself, and not "wilfully," the conviction would be quashed without costs.

PROCEEDINGS UNDER THE PHARMACY ACTS.

[The Pharmaceutical Society *v.* J. E. Houseman.

At the Bloomsbury County Court on Friday, January 20, the case of the Pharmaceutical Society *v.* J. E. Houseman, of 21, Pitfield Street, Hoxton, N. (an unqualified assistant), came on for hearing.

Mr. C. W. Langley Flux, solicitor, who represented the Society, stated that the action was brought for the recovery of the amount of one penalty of £5, incurred by the defendant by having sold poison contrary to Section 15 of the Pharmacy Act, 1868.

The defendant did not appear and was not represented, but it was stated by the Registrar of the Court that, although the defendant had not confessed judgment under the rules of the County Court, he had written to say that he would not defend, and by his letter admitted the offence, and made an offer for payment of the penalty by instalments.

Mr. Flux having accepted the proposal on behalf of the plaintiffs, judgment was entered for them with costs, on the terms proposed.

SELECTED PRACTICAL FORMULÆ.

Beauty Blanche.

This novel toilet requisite is said to give an unrivalled softness, delicacy, and natural whiteness to the skin. It is prepared from distilled witch hazel extract, 12 oz.; prepared cucumber juice, 12 oz.; French rose water, 6 oz.; essence of white rose, 6 oz.; glycerin of borax, 4 oz.; prepared talc, 4 oz.; oxide of zinc, 2 oz.; tincture of benzoin, 2 oz.; mix all well together.—*Quar. Therap. Rev.*, 16, 30.

Pharmacy of Guäthol.

Guäthol Application for Neuralgia: Guäthol, 10, and chloroform, 10. Mix. To be applied three times daily, afterwards covering the parts with a bandage. For frictions: Guäthol, 5; vaseline, 30. Mix.—*Injection for Tuberculosis*: Guäthol, 2; glycerin, 20. Four grammes to be injected in twenty-four hours. Shake before using.—*For Intra-muscular Injection*: Guäthol, 1; sterilised glycerin, 9. Dissolve with heat. Shake before using.—*Nouv. Rem.*, 14, 369, after *Rous. Ark. Path.*

Cigarettes D'Espic.

These are said to be composed of belladonna leaves, 44; hyoscyamus leaves, 22; stramonium leaves, 22; *Phellandrium aquaticum* leaves, 8; extract of opium, 1; cherry laurel water, *q.s.* The dried leaves stripped of their stems and cut small are moistened with cherry laurel water, in which the extract of opium has been dissolved. The paper used for making the cigarettes is soaked in an infusion of the leaves and dried. Usually a little potassium nitrate is added to the infusion to make the material burn freely.—*Pract.*, 51, 333.

LETTERS TO THE EDITOR.

Ol. Ricini and B.P. Tests.

Sir,—The United States Pharmacopœia says of the carbon disulphide and acid test, that "the mixture should not acquire a blackish-brown color" after shaking for a few minutes. Castor oil is readily obtainable in London which does not give more than a yellowish-brown coloration after ten minutes, and which after standing some hours shows no signs of blackening. The British Pharmacopœia is inexact in describing the colour produced simply as "brown." With regard to solubility—genuine castor oil should dissolve in all proportions in absolute alcohol, and in less than twice its volume of 90 per cent. alcohol. Your correspondent, Mr. Thursfield, has probably misread the pharmacopœial statement as to strength of alcohol. The petroleum spirit test is really a good one, as equal volumes of genuine oil and spirit form a cloudy mixture if the temperature is kept below 15·5° C., but become perfectly transparent if warmed to about 18° C., or if more than a trace of other fixed oil is present.

London, January 21, 1899. E. W. Lucas.

Sir,—Like Mr. J. F. Thursfield, I have had occasion to test several samples of castor oil, and I wish to corroborate his statement that castor does give a brown colour with the carbon bisulphide and sulphuric acid test. I had noted this some time ago in a little list which I purpose sending you when completed. On seeing Mr. Thursfield's letter, however, I hasten to confirm what he says. It would be interesting to know if an oil is to be obtained which will answer this test, and also whether the test has actually been tried by the compilers of the Pharmacopœia, or the last paragraph of the U.S.P. monograph on oleum ricini has simply been abstracted and slightly paraphrased, taking it for granted that castor oil would stand the test.

Leith, January 25, 1899. George Coull.

Bottles for Metric Prescriptions.

Sir,—Having had many years' experience in dispensing metric prescriptions, I beg to give "Doubtful" a list of the sizes of bottles as used in one of the leading Continental pharmacies. For retail and ordinary mixture and liniment bottles :—

	15·0	24·0	30 0	45·0	60·0	
	½ oz.	¾ oz.	1 oz.	1½ oz.	2 oz.	
90 0	125·0	155·0	180·0	210·0	250 0
3 oz.	4 oz.	5 oz.	6 oz.	7 oz.	8 oz.
	310·0	375·0	500·0	1000·0 or C.c.	
	10 oz.	12 oz.	16 oz.	1 litre.	

The ounce, you will observe, is only 30·0 ; the real measure, however, is 31¼ C.c. As regards the doses, as a rule most doctors look upon 5 C.c. as a teaspoonful, 10 C.c. a dessertspoonful, and 15·0 a tablespoonful. But I have often remarked that a doctor on the Continent never knows exactly how many doses there are in a bottle, he only knows "about" how many, unless, as is very rarely the case, he orders the bottle to be divided into parts.

Geneva, January 22, 1899. Alfred Roe.

Eucalyptus Oil.

Sir,—In view of the recent prosecutions under the Food and Drugs Acts for selling under-standard eucalyptus oil, we shall be glad if you will inform your readers that we shall be pleased to send any chemist applying for the same a free sample of our standard *Eucalyptus globulus* oil, and particulars of the method of assaying eucalyptol, of which the oil should not contain less than 50 per cent. to be efficacious for medicinal purposes.

For The Tasmanian Eucalyptus Oil Co.,

138, Leadenhall Street, London, E.C. O. P. Macfarlane,

January 23, 1899. *Manager.*

Pepsin in Mixtures.

Sir,—My attention has been drawn to a note by Mr. Nicholson, read at a meeting of the Edinburgh, Chemists', Assistants', and Apprentices' Association, on January 11, in which he refers to a mixture containing pepsin, the dispensing of which was discussed by myself when reading a paper on "Dispensing" before the Liverpool Pharmaceutical Students' Society. With your permission I would like to point out to Mr. Nicholson that the facts were as then represented. Although Mr. Nicholson may not have had any clotting of the pepsin with the pepsins he used, it will be well known to any experienced dispenser whose experience extends back a few years that the ordinary "pepsin porci," obtained and generally used before the advent of the present Pharmacopœia, required considerable care in its manipulation in order to make a prescribable mixture. As pointed out at the meeting, the pepsin used by myself was the ordinary pepsin of the B.P. 1885. Since the introduction of the American pepsins, which are many times stronger than the B.P. 1885 pepsin, probably these stronger pepsins have been diluted and in many cases used in this country, and no doubt these mixtures are more easily dispensed than the old B.P. pepsin. In conclusion, I would thank Mr. Nicholson for his work on the subject, but I would remind him that he could scarcely have used the same sample of pepsin as myself, as I had had it in stock for, perhaps, over twelve months—the mixture in question being dispensed in the early part of last year. Also, that the introduction of this particular item into my paper was not intended as a "dispensing difficulty," but as an illustration of a mixture where a little *sec. art.* was required. My friend Mr. Nicholson might have been a little less dogmatic in his assertion—"That my alleged difficulty had no existence," seeing that pepsin prepared according to B.P. 1885 was such a variable substance—and so spared the feelings of

Grassendale, January 25, 1899. T S. Wokes.

Extract of Gentian, B.P.

Sir,—I have just concluded the operation of making some extract of gentian according to the new British Pharmacopœia. The process differs from the old one in that cold distilled water is used in place of boiling distilled water. As the yield was only 30·66 per cent. as against 44 per cent. or even more by the hot process, I venture to ask whether the alteration is intended or is an oversight. I quite understand the difference would probably be less gummy matter in the new product than in the former. As the extract is commonly but erroneously used as a pill excipient, its value as such may possibly be diminished by the alteration.

King's Norton, January 21, 1899. S. W. Gateley.

The Qualification of Dispensers.

Sir,—The sad affair at Heaton Norris may yet prove a blessing in disguise if it but lead the public to realise the danger which lurks in its midst in connection with unqualified dispensers of medicine, whether in surgeries, public institutions or elsewhere. Regarding more especially errors which occur in doctors' surgeries, the public knows little of them, it being only the more glaring, such as the one in question and which cannot be explained away, that see daylight in coroners' courts ; and, whilst the hand that mixes the draught may also sign the certificate of death, it will continue to know little of them. The question of the dispensing of poisons, however, opens up the much greater and much more serious one of dispensing generally, and sooner or later—the sooner the better—the public must learn that its safety in the whole matter of dispensing is the warranty of efficiency granted by the State through its representative examining body—the Pharmaceutical Society. It is a fact that every year sees a number of men rejected as inefficient, and of that number a large proportion, in defiance of the examiner's decision, engage themselves as dispensers to doctors and hospitals or form themselves into limited companies and dispense for the general public without let or hindrance. Many of our legislators who now sleep peacefully through the hours of sickness with the thought that the State has provided for their safety in requiring dispensers of medicine to be competent check-guards or safety-valves, as well as competent compounders—many of these will have a rude awakening and realise for the first time that they have lived in "a fool's paradise" ; that, in fact, only a very small proportion of the dispensers of medicine have the hall-mark of efficiency. Meanwhile, we shall do well to drive the lesson well home as opportunity occurs, and I have no doubt that some good may come from the letter by which Mr. Glyn-Jones has drawn the attention of the high Government officials to the present anomalous condition of things.

Manchester, January 24, 1899. Harry Kemp.

Sir,—Having read the report of an inquest held at Heaton Norris, near Stockport, on January 9, recorded in your issue of the 21st instant, I think it is our duty as pharmacists not to allow such a serious occurrence to pass unnoticed, and I feel that the present moment is most opportune for calling the attention of the Privy Council to the extremely unsatisfactory state of the law

with regard to the dispensing of poisons in private surgeries by unqualified assistants. So much has been done in recent years to protect the public by means of vigorously enforcing the provisions of the Pharmacy Act of 1868 on registered chemists that it appears to me all the more remarkable that such a condition of things as has recently been brought to light can much longer be allowed to exist. No progress has been made with the view of protecting the public from incapable dispensers in private surgeries, and the seriousness of the case is at once apparent when we learn that considerably more than half the dispensing in this country is done by unqualified dispensers. I would suggest that this is a subject that may well be taken up by all the chemists' associations throughout the kingdom. I have forwarded a letter on this subject to the Privy Council.

South Kensington, January 25, 1899. ALBERT COOPER.

HEROIN.

Sir,—Your note on "Heroin" in the *Pharmaceutical Journal* (*ante* p. 60) suggests a brief comment from us. The introduction and advertising of well-known esters of morphine under such fanciful names as "peronin," "dionin," and "heroin" may mislead some members of the medical profession into the belief that these are new and proprietary preparations. As a matter of fact, they can all be prepared and supplied under their proper names by ourselves or any competent manufacturer. The chemistry and physiological action of the typical substitution compounds of morphine was thoroughly investigated by Dr. Ralph Stockman and Mr. Dott ('Proc. R.S.E., 1889 90,' and other communications). Professor Stockman found that acetyl-, diacetyl-, and benzoyl-morphine had all practically an identical action. Whence it is improbable that one of them possesses a therapeutic value in excess of the others.

Edinburgh, January 23, 1899. J. F. MACFARLAN AND CO.

PESTLE AND MORTAR USED AS A BELL.

Sir,—In reference to the interesting article, by Mr. Thompson, in your issue of January 14, it may not be inappropriate to mention the following use to which a pestle and mortar was placed in the stirring times of Cromwell. "In July, 1645, Major Dowett advanced on Market Lavington, and commenced operations by attacking the property of Sir John Danvers (the regicide), occupied by one Merewether, who, on seeing the approaching enemy, first took the precaution of barring his entrance, and then, for lack of a bell, seized a ponderous pestle and mortar, and from the roof of his house sent forth such a continual clatter and din, that it speedily had the desired effect of drawing the townspeople together. To the pestle and mortar they responded with the market bell, the voice of which borne on the breeze was repeated along the foot of Salisbury Plain, till the inhabitants, snatching up their weapons, came pouring towards the spot where the sounds seemed to originate" (*vide* 'History of Devizes'). One is tempted to ask, where is that pestle and mortar now? Some interesting remarks on the origin of the crest of the Apothecaries' Company may be seen in 'Notes and Queries,' and in Beaufoy's 'Tradesmen's Tokens.'

January 17, 1899. WILTONIENSIA (166/3).

LIFE MEMBERSHIP OF THE PHARMACEUTICAL SOCIETY.

Sir,—As a large number of chemists in business and not in business keep aloof from joining the Society on account of feeling the drain of £10 10*s.* in a lump sum, but who would never miss a weekly sum of, say, two or four shillings per week, is it not possible for local associations to devise some scheme whereby weekly sums may be paid into a common fund, and on reaching the sum of £10 10*s.*, ballot which has to become the life member, and so continue until all are fully paid up and life members. This only requires to be taken up by local associations, and details worked out. At 4*s.* per week the sum of £10 10*s.* would nearly be raised in one year.

Scotland, January 24, 1899. LIFE MEMBER (166/39).

A CORRECTION.

Sir,—Would you kindly allow me to correct a slight error which occurs in my address to the Liverpool Chemists' Association, which appears in your issue of the 21st. When I went to Liverpool, in 1833, the business had been carried on by my elder brother, Thomas Bickerton with John, as stated (the latter then going to London), and the former was actually associated with me till close upon his death in 1866.

Bronwylfa, Wrexham, January 24, 1899. EDWARD EVANS.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials or pseudonym. Replies will, in all cases, be referred to such initials or pseudonyms, and the registered number added in each instance should be quoted in any subsequent communication on the same subject.*

'SOAPMAKER AND PERFUMER.'—We are unable to find that the paper is now in existence. [*Reply to* R. D.—22/24.]

CAUSTIC SODA STAIN.—Try washing the stain with a little dilute acetic acid; if that does not remove it substitute dilute hydrochloric acid, but avoid a great excess, and wash out at once with water. [*Reply to* PHARMACEUTICAL STUDENT.—22/6.]

UNG. FERRI SULPHATIS.—Probably the formula of the Pharmacopœia of St. Bartholomew's Hospital is what you refer to. The ointment is composed of: Powdered sulphate of iron, 10 grains; lard, 1 oz. Mix. [*Rep'y to* PIPERAZINE.—22/7.]

PETROLEUM EMULSION WITH HYPOPHOSPHITES.—The figure 4 should have followed the word "emulsion" in the last line but one of the answer to your query, published last week, but was inadvertently omitted by the printer. [*Reply to* A. M. W.—21/27.]

APPLICATION FOR ERYSIPELAS.—It is impossible to say exactly what the application contains, but a vegetable extract (possibly marshmallow), and white of egg appear to be among the constituents. [*Reply to* MAJOR.—22/20.]

ANALYSIS OF COPPER COIN.—The information you ask for should be found in text-books dealing with quantitative analysis. Are you satisfied, by qualitative tests, that all the metals you mention are actually present? [*Reply to* W. T. L.—21/12.]

CARBOLIC TOOTH POWDER.—Powdered orris root, 2 ozs.; powdered Castile soap, 2 ozs.; powdered cuttle fish, 2 ozs.; precipitated chalk, 8 ozs.; carmine, 40 grains; liquid carbolic acid, 2 drachms; oil of cloves, 30 minims; oil of rose geranium, 20 minims. Mix thoroughly and sift. [*Reply to* W. S.—21/34.]

LUMINOUS PAINT.—Calcined oyster shells, 100; strontium carbonate, 30; wood charcoal, 20; quicklime, 100; flowers of sulphur, 100; dried sodium chloride, 25. Mix intimately and carefully heat to redness in a covered crucible. The product must be mixed with some suitable medium to form a paint. [*Reply to* T. T. C.—22/14.]

TOILET POWDER.—Zinc oxide, 2 ozs.; precipitated chalk, 12 ozs; powdered French chalk, finest, 2 ozs.; rice starch, 4 ozs.; essence of jockey club, 2 drachms; carmine, 2 grains. Triturate the carmine thoroughly with a small quantity of the powder, after having mixed it, then gradually add the rest. If the tint is not exactly what you require increase or decrease the amount of carmine. [*Reply to* W. S.–21/34.]

EMPLOYING UNQUALIFIED ASSISTANTS.—If the assistant is not a duly qualified person, and sells poison during his employer's absence, he is liable to a penalty of five pounds; it is usually supposed that no penalty would be incurred by the employer under those circumstance, but it is far from certain that such a view would be upheld in a court of law. [*Reply to* R. S. B.–22/25.]

DEC. CINCHONÆ CONC. (1 IN 8).—This, as usually made, is nothing but a very strong tincture, obtained by percolating 10 oz. of powdered red cinchona bark with alcohol (45 per cent.) until the percolate measures 20 fl. oz. Another method is to exhaust 10 oz. of the red bark by successive decoctions with water, then evaporating to 16⅔ fl. oz., taking the weakest decoction first, adding alcohol (90 per cent.), 3⅓ fl. oz., and making up the product to 20 fl. oz. [*Reply to* PIPERAZINE.—22/17.]

ROYAL COLLEGE OF SURGEONS OF ENGLAND 99

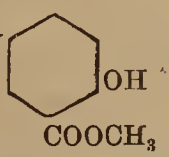
Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Contraction of Solutions. E. B. H. Wade has studied experimentally the contraction of solutions of different substances at various concentrations. Contraction is defined as the diminution of volume on mixing equal volumes of water and solution, stated for 100,000 C.c. of resulting solution; *e g.*, if 50 C.c. of water + 50 C.c. of solution yield 99·999 C.c. of diluted solution, the contraction is said to be unity. Concentration is defined as the number of gramme equivalents of substance in every 100,000 C.c. of the solution after dilution. Observations were made on solutions of hydrogen, sodium, potassium, calcium, and strontium chlorides, potassium ferrocyanide, oxalic acid, cane-sugar, and urea. In almost all cases the equation $X = \frac{n^b}{a}$ was found to hold good in which X is contraction, n concentration, and a, b are constant terms. In such cases Φ, the apparent volume of the substance, must be given by $\Phi = \text{const.} + \frac{n^b - 1.}{a(2^b - 1)}$ and values of Φ thus calculated for various values of n are tabulated in the paper. The first equation shows how X varies with the concentration. If the concentration be kept constant, and the dissolved substance varied, it is found that X increases regularly with the equivalent weight of the dissolved substance. A special apparatus was employed for measuring the contractions directly to within about one-tenth of a unit, without the need of determining the specific gravities of the experimental liquids. The same apparatus is available for many other cases where a change of volume follows a chemical process, as in the neutralisation of an acid.—*Proc. Chem. Soc.*, **15**, 7.

Nirvanin. Under this name Drs. Einhorn and Heinz have recommended a compound possessing anæsthetic properties, which they have prepared synthetically with the object of avoiding the respective disadvantages of orthoform and cocaine. The insolubility of orthoform has operated as counteracting its power of producing complete and long-continued anæsthesia, and the acid character of its hydrochloride renders the solution of that salt unfit for hypodermic injection. Einhorn and Heinz have, therefore, sought to prepare a compound that would be free from the toxic character of cocaine, but resemble cocaine in having the anæsthetic effect due to the three factors of the benzoyl group $C_6H_5 \cdot CO$, the carboxymethyl group $COOCH_3$, and the basic group $C_8H_{13}NO$, to which the capability of forming salts is referable. The simplest compound of that nature, the methyl ester of benzoic acid, $C_6H_5—COOCH_3$, possesses some power of reducing sensation, and when an amido group is introduced into the benzene nucleus in the ortho, meta, or para position the amido benzoic ester thus produced— $C_6H_4 < \begin{matrix} NH_2 \\ COOCH_3 \end{matrix}$ has a more or less marked power of producing anæsthesia, and it may be regarded as a kind of cocaine, the basic group $C_8H_{13}NO$ being replaced by the amido group, NH_2. By introducing into the amido-benzoic ester the phenolic hydroxyl group, acting antiseptically, oxy-amido-benzoic esters are produced— $C_6H_3 < \begin{matrix} NH_2 \\ OH \\ COOCH_3 \end{matrix}$ and among them are compounds which resemble orthoform in being non-toxic and in possessing the characters of a good antiseptic and anæsthetic. Einhorn and Heinz, assuming that the nature of the basic group in these compounds is of secondary importance as regards their anæsthetic action, inferred that it would be possible to replace the amido group by other strongly basic groups without materially influencing the anæsthetic action of the compounds. In that way they sought to obtain more decidedly basic compounds, forming neutral salts with mineral acids and therefore capable of being used for hypodermic injection. After many experiments carried out from that point of view in conjunction with Max Oppenheimer, they found that alkyl derivatives of glycocoll compounds were of the kind sought for, especially diethyl glycocoll compounds of aromatic amido and oxy-amido esters. The compound most suitable for the purpose was the hydrochloride of diethyl glycocoll-*p*-amido-*o* oxybenzoic methyl ester—

$$HCl \cdot (C_2H_5)_2 = N - CH_2 - CO - HN$$



This salt crystallises from absolute alcohol in white prisms melting at 185° C.; it gives a violet coloration with ferric chloride, and is readily soluble in water. The solution is neutral. A 5 per cent. solution dropped into the eye produces, after some time, perfect anæsthesia. The conjunctiva is temporarily irritated. On a less sensitive mucus membrane a 5 per cent. solution does not cause irritation, but the anæsthesia produced is not sufficient to admit of painless operation. However, anæsthesia is perfect and continued when the preparation is injected under the skin or applied to wounds, etc., so that it comes in contact with exposed nerve ends. This compound also resembles orthoform in being very slightly toxic, and as compared with known soluble anæsthetics it is a relatively harmless substance, being only one-tenth as poisonous as cocaine, as much as 7 grains may be injected without injury. Another advantage over cocaine is the powerful antiseptic action—a 1 per cent. solution destroying all bacterial growth. Another advantage is the long-continued effect. With cocaine the anæsthesia rapidly passes off, but with this compound the paralysis of sensitive nerve ends lasts even after the removal or absorption of the substance.—*Münchener med. Wochensch.*, **45**, 1553.

Sugar from Egg Albumin. Ferdinand Blumenthal has succeeded in preparing from pure egg albumin, carefully freed from all traces of sugar and treated with barium hydrate and hydrochloric acid, a sugar which forms an osazone with phenyl-hydrazine, melting between 194°-204° C. This proves to be glucose, and from its action on polarised light and resistance to the fermentative action of yeast it is almost certainly levulose. The yield is from 8 to 12 per cent. of the albumin.—*Comptes rend.*, **128**, 117.

Thermal Effects of Dilution. J. H. Pollok has sought to determine how far dilution affects the thermal condition of salts in solution, by diluting a number of saturated solutions of salts with an equal bulk of water and noting the changes of temperature. Half a litre of each saturated solution was placed in a suitable glass bottle; an equal number of bottles were filled with half a litre each of distilled water, then all were placed in a large, shallow, wooden tub in a room of uniform temperature, and left for twenty-four hours. A number of thin glass beakers of about a litre capacity, with glass stirring rods shaped into a ring at the end, were provided, also a mercury thermometer graduated into tenths of a degree, and reading easily to a quarter of each division, as well as a differential alcohol thermometer with only about 4° on the whole stem, and the graduations of which corresponded to less

than 0·01°. The temperatures of the bottles were taken as the experiments were made and found to be almost exactly 9°, though the different bottles did in point of fact vary as much as 0·05°, for which a proper correction was made. A bottle of solution and a bottle of water were then lifted out of the bath by a piece of flannel and poured simultaneously into a beaker standing on a thick piece of flannel, stirred up, and the temperature noted by both thermometers. The following changes were noted :—

Salt.	1st Expt.	2nd Expt.	Salt.	1st Expt.	2nd Expt.
NaCl	+0·50	+0·50	$(NH_4)_2SO_4$	−0·43	−0·39
$NaNO_3$	−1·80	−1·85	$CaCl_2$	+0·58	+0·62
Na_2SO_4	−0·05	−0·03	$BaCl_2$	−0·07	−0·06
Na_2CO_3	−0·15	−0·20	$MgSO_4$	+0·02	−0·01
KCl	−0·47	−0·47	$ZnSO_4$	+0·03	+0·05
KNO_3	−0·32	−0·38	$CuSO_4$	+0·02	+0·05
K_2SO_4	−0·04	−0·03	$FeSO_4$	+0·04	+0·00
K_2CO_3	−0·37	−0·44	$Pb(NO_3)_2$	−0·37	−0·33
NH_4Cl	−0·15	−0·13			

—*Proc. Chem. Soc.*, **15**, 8.

Oxydases of Aconite and Belladonna. E. Lepinois finds that the expressed juices of aconite and belladonna contain oxydases which are destroyed by a brief exposure to a temperature of 100° C. The belladonna ferment, precipitated by alcohol, was found to give 31·36 of ash; that from aconite 33·57 per cent. It is noteworthy that the latter contains but a feeble trace of manganese, which has been regarded as an essential constituent of these oxydases. These researches have a practical pharmaceutical bearing, since the author finds that it is to the presence of the ferments that the changes of colour observed in the alcoholatures of the Codex are due. Those preparations are made by macerating the crushed fresh herb in alcohol at normal temperatures. They speedily lose colour, but if in the course of preparation they are heated to boiling point for fifteen to thirty minutes, they will keep perfectly, maintaining their bright green colour for several months.—*Journ. de Pharm.* [6], **9**, 49.

Calcium Arsenide. P. Lebeau has obtained calcium arsenide, Ca_3As_2, by heating metallic calcium in the vapour of arsenium, and also by reducing calcium arsenate in the presence of carbon in an electric furnace. Both forms have a micro-crystalline structure, but that obtained by synthesis differs somewhat from the product of reduction. They are equally permanent in the air at ordinary temperatures. In contact with water the synthetic arsenide undergoes rapid decomposition, hydrogen and AsH_3 are evolved, and a brown flocculent body is formed, probably a secondary arsenide. The arsenide obtained by reduction, however, under similar conditions, slowly and regularly gives off AsH_3 without any admixture, and affords an admirable means of obtaining that gas in a chemically pure condition.—*Comp. rend.*, **128**, 95.

Administration of Medicine. Professor Moritz has investigated the conditions necessary for the absorption of drugs, and finds that medicaments are absorbed most speedily when taken with plain water whilst fasting. Soup, milk, wine, etc., retard absorption, even when the medicine is taken fasting, but absorption is still more slow when the medicament is taken with liquid after food, and most slowly of all when taken after food in the absence of liquid. To secure the most speedy absorption of any drug, therefore, it should be administered with water on an empty stomach, and in many cases it will be found that a definite effect will thus be produced, though no effect would be perceptible if the same dose were administered shortly after food.—*Münch med. Woch.*, 45, 1521.

THE NORDRACH CURE OF CONSUMPTION.

BY JAMES ARTHUR GIBSON.

The cure of consumption is at present largely occupying public attention, and it is well that chemists, who, next to doctors, come most in contact with consumptive cases, should know the best mode of treatment, and be familiar with its details. It is not many years—nay, months—since consumption was considered an incurable disease by even the most up-to-date scientists and medical men in this country. When in 1895 I broke down in health, affected with consumption, I could get no book on the subject which gave me the least hope of recovery. All the standard works were full of vague talk about "amelioration," "arrestment of the progress of the disease," "improvement in condition," and other such phrases which convinced the unfortunate consumptive who could read between the lines that there was absolutely no hope for him. Some of them went so far, however, as to say that very favourable cases in the first stages might recover by going to live abroad, but that this was a doubtful move to make, as it only too often meant that the patient went out to a foreign land to die amongst strangers. I had resigned myself to the inevitable, although I felt all the time that there must be a cure for a disease which was so slow in its results, and left the mental faculties unimpaired to the last; that it was against all nature for man to die so. I was advised either to sell my business and go abroad to live or to go for a voyage round the Cape in a sailing vessel. It was at this time (August, 1895) when, undecided what to do, that I had the great good fortune to meet a well-known friend, who had been ill of consumption, as I knew, for seven years. I had met him at intervals during those years, and he was merely keeping in a miserable life by constant care and watchfulness, by living either at the Cape or Davos, venturing home to this country only at midsummer. When I met him in August, 1895, he was a different man. Instead of being emaciated and dying he was looking well and happy, and had gained two stones in weight. What had wrought this change? He told me that after trying every known remedy and treatment without the least benefit he had been persuaded to go to Nordrach, in the Black Forest, Germany, where Dr. Walther was curing consumption; that he had in three months got incomparably more good than in all the previous seven years; that he had now made a start on the road to recovery and was soon returning to Nordrach to complete his cure. From what he told me of the treatment there, and of the hopeless cases that had been cured by Dr. Walther, I judged that it was the chance that held out most hope for myself. Early in October, 1895, I reached Nordrach. My weight at that time was 9 st. 12 lbs. It is necessary to enter into such personal details, as the whole system of treatment hinges on such things as weight and temperature, which are the outward signs of the ravages of the disease. I will endeavour to give an outline of the treatment of consumption which Dr. Otto Walther has, to a great extent, originated and perfected at Nordrach.

I may say in passing that Dr. Walther is without doubt the greatest authority on consumption who has ever lived. He has carried into practice the system instituted by Brehmer forty years ago, and has from his own experience and observation brought it to such a pitch of perfection that he is able to effect cures that no other authority would credit, and that even Brehmer himself would have considered impossible. The Nordrach cure of consumption consists of these three main features: (1) abundance of nourishing food; (2) regulation of the amount of exertion and rest; and (3) fresh air. The present crusade in this country against consumption is for the furtherance of the "fresh-air" treatment. Such a title applied to the Nordrach

treatment is, strictly speaking, a misnomer, for though the open-air treatment is carried out more thoroughly at Nordrach than anywhere else—the open-air life being not gradually, or only partially, put upon the patient, but thoroughly and completely from the first day without ill effects—it is the least important of the above three details. I, therefore, prefer to call the up-to-date treatment of consumption the "Nordrach cure," and it is only in so far as it follows the lines of the Nordrach treatment that the movement will succeed. The absolute necessity of building up the patient's system by a liberal forced diet, and the strict supervision of all the patient's movements, regulated by his temperature chart, so as to ensure his avoidance of all over-exertion, are the two most important points in the cure of consumption, and they are two points that are completely, or almost, altogether overlooked in the "open-air crusade." No man can live on air—a consumptive less than anyone—and the slight increase of appetite resultant from the open air is of very little use to him; perhaps the opposite, merely serving often to sustain his strength for a little, and so prolonging his life of misery. The consumptive must be forced to eat if he is to live and get well. One of the worst results of the illness is a loss of appetite. The less the patient eats the worse he gets, and the less still is he inclined to eat. It is the longer the worse. He is starving, and all the while the disease is further sapping his vital energies. If he is to recover, this must be reversed. Instead of eating too little he must, so to speak, eat too much, so as to replace, first, the natural waste of the system; second, the extra waste from the disease, and, third, that he may gain weight, the system thereby being strengthened and thus being made able finally to throw off the disease. The constant supervision exercised at Nordrach, on the other hand, prevents unnecessary waste of energy and the relapses and accidents that are so common to patients not under supervision. Over-exertion, to the length of fatigue, always results in high temperature or return of cough, or tells in some other unpleasant way. The results obtained at Nordrach, the cures effected, are so much better than can be obtained anywhere else or by any other means that it is the only system worth following out in this country; and it is to be hoped, since the movement is but in its infancy—more shame to us—and everything is yet to be done, that those in authority will see that sanatoria are built and conducted on Nordrach lines. It seems to me that the originators of the movement have got but half the truth, and that if "the open-air" treatment is carried out, as it has been conceived, there will be a woeful tale of failure.

Let me take the three main points of Dr. Walther's cure, and describe roughly the essentials of each.

(1) Overfeeding.—This literally means overfeeding. The patient is forced to eat an enormous amount. There can be no cure without weight-gaining, so that is the first thing to aim at. The patient must gain in weight—and he does gain—sometimes as much as 7 or 8 lbs. in a single week. The gains are not commonly so large as that, but 2, 3, 4, and 5 lbs. a week are quite common. I here give a table of my weight during the sixteen weeks I was at Nordrach.

First week, October 12, 1895	138 lbs.,	or 9 st. 12 lbs.
Second week	143 lbs.	
Third week	147 ,,	
Fourth week	149 ,,	
Fifth week	153 ,,	
Sixth week	157 ,,	
Seventh week	160 ,,	
Eighth week	163 ,,	
Ninth week	165 ,,	
Tenth week	168 ,,	
Eleventh week	168 lbs.	
Twelfth week	169 ,,	
Thirteenth week	170 ,,	
Fourteenth week	173 ,,	
Fifteenth week	174 ,,	
Sixteenth week, January 24, 1896	176 ,,	or 12 st. 8 lbs.

The doctor sits at table and himself serves out the portions each should eat, and that must be eaten. It is not how much a patient likes, but how much he needs. It is certainly a great struggle at times to eat the necessary amount, and to begin with it sometimes seems to a patient that life is not worth the trouble this entails. But he does not think so for long. He has not been at Nordrach for more than a week or two before he realises that he at least has found the right treatment, and he sets himself resolutely to the task of working out his own salvation, seeing that it is now a fight between himself and the disease, instead of a quiet acquiescence in his life slipping peacefully and quietly away. As his weight increases he begins to feel his strength returning, the cough leaves him after the first few weeks, so that his lungs are not continually being irritated and inflamed by constant coughing, and he is also able to sleep better—which is a great matter. This cough, which a consumptive has, is nothing more or less than an ordinary cold which he has all along been too weak, or has not been living under the proper surroundings, to throw off. At Nordrach it leaves him like magic, and he does not realise that it is going till it has gone. The open-air life—continually living in pure air—the absence of chills and relapses which this entails, and the improvement in the patient's own bodily condition, work this change. It is peculiar to note, as a good example of the infectiousness of an ordinary cold, that on the arrival of a new patient with a cough, two or three of the weaker patients sometimes catch the cold from him and cough for a day or two. By degrees, as the patient's weight increases, the temperature becomes normal, the lungs begin to heal, the bent shoulders to straighten, the chest to expand, and the feeling of langour and hopelessness disappear, until, by the time the cure is complete, the patient has gained in weight from 2 to 4 st. I myself gained nearly 3 st. in the three and a half months necessary to complete my cure. I came home in the middle of January, for when a man has been cured on the Nordrach lines, he is superior to climate, and goes to live anywhere as readily in winter as in summer. There are but three meals a day—but such meals! Breakfast (at eight) consists of cold meat, such as tongue, roast beef, and ham, with plenty of bread and butter, eggs, tea and coffee, and almost a pint of milk, and of all these as much as can possibly be eaten.

Dinner (at one) is the principal meal, and almost two hours are spent over it. The first course is hot meat of some kind—veal, venison, fowl, cutlets—with plenty of potatoes, vegetables, and bread. The second course is a repetition of the first, merely a different kind of meat being substituted—roast beef, mutton, or pork, with again plenty of potatoes and vegetables. The doctor gives out the portions, and he does so with no niggardly hand. Any one of these courses would be a fair dinner for a working man, and yet dying consumptives, who are supposed to have no appetite, have to demolish them both. But we have not done yet. A great slice of plum pudding or a dozen apple tarts, or half a pound of rich cake and an apple or two, and some nuts and grapes, and on the top of all that a pint of milk. Is it any wonder that one gains weight under such treatment?

Supper (at seven) is much the same as dinner, except that the second course is left out. Steak and eggs is the favourite supper dish—and raw chopped ham or beef for a second course. A patient looks glum the first time he finds placed before him about half-a-pound of cheese, which he must eat, at the fag end of a day in

which he seems to have been doing nothing but eating. It will be seen that the meals are at long intervals, so that there is plenty of time for digestion, with a chance for a fellow to feel hungry, which he rarely if ever does, before mealtime comes round again. This overfeeding has no ill effects whatever—the stomach seems to be able to digest the extra amount of food. It is likely that the improved condition of the patient's health favourably affects the digestive organs besides. However, it may be, and whether sick or not, the patient must at all hazards eat. Even with being sick three or four times in a week—only a few are so—he yet gains weight, and a time comes when sickness ceases. I knew a man who went to Nordrach. He was sick after his first dinner, sick again after breakfast next morning—this is no uncommon experience to begin with—and left for home that day. I saw him on his return to this country, and tried to point out to him the folly of what he had done. He said that he thought he could not stand the treatment, which was nonsense, as everyone could stand it. He roamed about the country from one health resort to another for two years afterwards, and then he died. Had he been brave enough to have persisted he would have been alive and well to-day. Every one is weighed each week, and you may be sure it is with anxiety and hope that one steps on to the scales. And then the rivalry! There is a man 5 lbs. ahead of you. You cannot let a simpleton like him beat you, so he must be passed. And so it goes on, pound after pound is added to one's weight, bringing the desired end—the return home—so much the nearer. And then every week there is someone going away cured, someone who was quite as bad or ever so much worse than you were. And what encouragement there is in that!

(*To be continued.*)

RESIN, RESIN OILS, AND RESIN SPIRITS.

BY E. M. HOLMES, F.L.S.

Curator of the Museum of the Pharmaceutical Society of Great Britain.

My attention was directed a few months ago to the ol. succini rect. of commerce, the low price of which precludes its preparation from so expensive a material as amber, or even from the resin often sold as amber, *i.e.*, Zanzibar anime. I found on inquiry that ol. succini rect. is one of the products of the destructive distillation of resin.

As very little information on the resin industry has appeared in the Journal for the last forty-five years (*Pharm. Journ.* [1], vol. xii., pp. 345, 389), and as comparatively little is said about its products in works on materia medica, I have thought that such information as I have been able to obtain concerning them might interest members of the Society who are living in large industrial centres in this country. This I have arranged under the head of Resin, Resin Oil, and Resin Spirit.

Resin.

The crude resin left after the distillation of oil of turpentine varies vary much in quality as well as in appearance. The opaque or yellow resin, and the clear, amber, or window glass resin are the two varieties chiefly used in pharmacy, but there are several other grades which find various uses dependent upon their hardness or tenacity. One variety, for instance, is suitable for making powdered resin, which, if prepared from some grades, readily coheres into masses; other varieties are suitable, from their toughness, for fastening knives and forks into their handles.

The variation in colour of the different grades of resin appears to depend partly upon the character of the crude turpentine from which it has been prepared. According to Professors Bastin and Trimble in a very interesting article published in the *American Journal of Pharmacy* (May, 1896, pp. 242–254), the turpentine obtained during the first year of tapping the trees is known as "virgin dip" and yields the pale (W.W.), water white, or window glass (W.G.) resin, that of the second year a resin of more or less amber tint (N.W.R.), of the third year a more or less dark brown resin, not quite transparent, and of the fourth or last year an opaque heavy resin of a deep brown or almost black colour. The opaque white and yellow resins contain water, but recover their transparency when the water is driven off.

Mr. C. W. Colthrup (Messrs. Snowdon, Sons and Co., Ltd., London), has kindly given me the following information concerning the preparation and uses of the different products.

"When resin or colophony is submitted to destructive distillation, for which purpose the cheapest grades are naturally employed, a certain amount of gas and acid liquid first come over and are followed by three other products in the following proportions:—

Gas	5·2 per cent.
Acid Water	2·7 ,,
Crude Resin Spirit	3·2 ,,
Crude Resin Oil	85 0 ,,
Resin Pitch	3·9 ,,

There is a second method of distillation, but it is seldom used, namely, by the aid of superheated steam in addition to fire heat. The above percentages vary according to the quality of the resin and the method of distillation."

Resin Oil.

"Crude Resin Oil as it comes from the stills varies, but there are two grades generally recognised in the trade, known commercially as hard and soft crude resin oils, the former of which is of a thick consistence, and is used in making lubricating greases, and the latter thinner, and is used for greasing wire ropes in collieries and for making cheap waggon greases; it is also used in the process of hardening steel. The specific gravity varies from 0·990 to 1·030 (Allen, in 'Commercial Organic Analysis,' gives the sp. gr. as 0 980 to 1·100), and the colour is bluish violet.

Refined Resin Oil is obtained from crude oil by treatment with sulphuric acid, caustic soda, and re-distillation, and the more often this is repeated the paler will be the oil. The colour varies from dark red to pale yellow, and the specific gravity from 0·980 to 0 995. The crude varieties of resin oil possess a drying power, but the refined oils have none; the use of such oil in paints should be avoided. It is also used in some of the cotton and dyeing works of Yorkshire.

Resin Spirit.

Crude Resin Spirit is of a dark brown colour, and is refined by treating with sulphuric acid, caustic soda, and then re-distilling the washed spirit.

Refined Resin Spirit is a water-white liquid, and has a specific gravity of from 0·876 to 0·883, both varying with a degree of refining, but it is invariably heavier than turpentine. Resin spirit is insoluble in water and alcohol, but it is soluble in ether, turpentine, and petroleum spirit. It is the best substitute for turpentine known, and is capable of replacing it for all purposes when of good quality, the chief objection being in its odour, which is not so pleasant as turpentine. It is used very largely in making cheap varnishes."

To this account I may be permitted to add further details as follows, chiefly derived from Thorpe's 'Dictionary of Applied Science,' vol. iii., pp. 341 and 344; Wright's 'Oils, Fats, and Waxes,' and Allen's 'Commercial Organic Analysis.'

When resin or colophony is submitted to destructive distillation, a certain amount of gas and liquid is first given off. A light oily liquid consisting of a number of compounds then follows, the portion which boils below 360° forming what is known in commerce as resin spirit. The portion boiling above 360° is collected

separately and forms the resin or pine oil of commerce. The residue left in the retorts consists of resin, pitch, or coke, according to the extent to which the heat is continued. A ton of resin yields about ½ to 1 cwt. of resin spirit, and 17 cwt. of resin oil.

Resin Spirit is known to contain the following compounds :—

Boiling-Point.

Pentane, 35°-38° ;
Amylene, 35°-40° ;
Pentene (C_5H_8), 50° ;
Isobutyric aldehyde, 60°-62° ;
Hydrocarbon (C_6H_{14}), 64°-66° ;
,, (C_6H_{12}), 67°-70° ;
Hexahydrotoluene, 95°-98° ;
Valerianic aldehyde, 96°-98° ;
Heptinene (C_7H_{12}), 103°-104° ;
Tetrahydrotoluene, 103°-105° ;
Toluene, 111° ;
Hexahydroxylene, 120°-123° ;
Tetrahydroxylene, 128°-130° ;
Xylene, 136° ;
Hexahydrocumene, 147°-150° ;
Cumene, 151° ;
Hydrocarbon (C_9H_{16}), 155° (?) ;
Terpene, 154°-157° ;
Hydrocarbon ($C_{15}H_{28}$), about 160° ;
Terpene, Hexahydrocymene } 171°-173° ;
Cymene, 175°-178° ;
Para-butyl-toluene, 176°-178° ;
Meta-isobutyl-toluene, 186°-188° ;
(M)ethyl propyl-benzene, 193°-195° ;
Hydrocarbon ($C_{16}H_{28}$), about 260° ;
Colophene, 318°-328°.

Isobutyric, isovalerianic, and caproic acids have also been found in resin spirit.

The heptinene, C_7H_{12}, is probably methyl-propyl-allene (Morris), and is characterised by giving a succession of colours (yellow, red, green, and deep blue) when agitated with strong sulphuric or hydrochloric acids. About half the volume of resin spirit consists of compounds that distil below 120°. It is rectified by agitation with caustic soda and re-distillation or by re-distillation alone. The ol. succini rect. bears so strong a resemblance to resin spirit, that I asked Mr. J. C. Umney to have the two compounds compared in the laboratory of his firm. This has been done under his direction by Mr. Swinton, who obtained the following results :—

Ol. Succini Rect. ..... sp. gr. 0 850
Resin Spirit .... sp. gr. 0·864.

Optical rotation in both inactive or slightly lævogyre. Fractionation gave the following results :—

	Ol. Succini Rect.	Resin Spirit.
Below 160°	257	257
,, 200°	557	607
Above 200°	207	157

The ol. succini rect. is acid to litmus paper, and therefore is probably not treated with caustic soda before re-distillation. It appears probable, therefore, that the ol. succini rect. of commerce consists practically of resin spirit purified by re-distillation.

Resin Oil.—Crnde resin oil consists (Thorpe) of a mixture of hydrocarbons ($C_{10}H_{16}$), boiling above 360° C., abietic acid (m. p. 165°) $C_{44}H_{64}O_5$, and small quantities of phenols, the hydrocarbons forming about three-fourths of the whole. The hydrocarbons can be separated by a solution of soda, in which they are insoluble, the abietic acid and phenols being soluble. The crude oil has a slightly milky or opalescent appearance due to the presence of water containing a little acetic acid, which comes over throughout the distillation. The fluorescence can be removed by washing the crude oil with solution of soda and exposing it to the air in shallow iron vessels.

Resin oil is largely used in the manufacture of lubricating grease, made in the proportion of one part of cream of lime to 20 or 25 parts of the oil, the emulsion being first formed by mixing about 4 parts of the oil to 3 of lime.

Some of the grades of the purified oil are used for adulterating lubricating oils and linseed oil, and forms an ingredient in some printing inks. Resin oil raises the sp. gr., but mineral oil lowers it, so that a suitable mixture of the two has little or no effect ; but resin oil is soluble in glacial acetic acid, whilst mineral oils are practically insoluble (Wright, 'Oils, Fats, and Waxes,' pp. 352 and 119). Purified resin oil does not possess drying properties, and hence gives a sticky character to paints made with linseed oil containing it. Other qualities of resin oil can be made by distilling resin with lime (*Ph. J.* [1], vol. xii., p. 38 . See Thorpe, *l. c.*, pp. 342-4, for fuller references, also Benedikt and Lewkowitsch 'Oils, Fats, and Waxes,' p. 178-182.

Allen, in 'Commercial Organic Analysis' (second edition vol. ii., p. 460-466), states that the resin is heated in vertical stills with hemispherical ends, holding from 50 to 70 barrels of resin. They are heated directly, and distillation without steam is usually preferred, as in that case the production of spirit is less. The crude oil, which comes over in part at a dull red heat, can be purified by washing with a small percentage of sulphuric acid, followed by treatment with lime water and re-distillation with or without steam. A very superior product is obtainable by re-distilling the oil over solid caustic soda with the aid of a current of superheated steam. Zinc dust and other reducing agents have also been employed. Resin oil appears to consist of abietic acid or its anhydride, in notable proportion, and hydrocarbons of an indefinite nature, with some heptinene and polymerised terpenes. The fluorescence can be more or less destroyed by treatment with hydrogen peroxide, by the addition of nitro-benzene, nitro- or di-nitro-toluene, di-nitro-naphthalene, etc., or by heating with sulphur. Resin oil is miscible in all proportions with fatty oils, mineral oils, ether, chloroform, carbon disulphide, turpentine oil, petroleum spirit, and acetone.

The various processes by which resin oils and spirits of different qualities (used for different technical purposes) are made are evidently kept as secret as possible by manufacturers. So far as the products which have a direct interest for pharmacy are concerned, it would appear that the "ol. succini rect." of commerce consists of resin spirit of a certain sp. gr., but how far it is of uniform sp. gr. has yet to be determined by those who have the opportunity of comparing different commercial samples. It should be noted that there is also an ol. succini of lower price, as well as an ol. succini ver., the last named being prepared from amber chippings or fragments, and costing nearly as much per ounce as ol. succini and ol. succini rect. do per pound.

In conclusion I take this opportunity of thanking Messrs. Grindley and Co., Messrs. Price and Co., Messrs. Snowdon and Sons, of London, and Messrs. Makin and Bancroft and Co., of Liverpool, for specimens illustrating the resin industry.

Preparation of Fluid Extract of Rhamnus Frangula.—Aweng recommends the following method of procedure for the preparation of this extract, and claims that it removes the active principles of the bark, but not the bitter nauseous glucoside :—The powdered bark is heated with water on a water-bath for one hour to destroy the ferment present ; it is then allowed to stand for twelve hours to deposit any secondary glucoside which may have dissolved, and finally percolated with cold water. The percolate, after the addition of glycerin, is evaporated to a fluid extract on the water-bath. Another method is to extract the bark by percolation with 60 per cent. alcohol, distilling off the solvent, evaporating the residue to an extract, re-dissolving it in water, filtering, adding glycerin to the filtrate, and evaporating to a fluid extract.—*Pharm. Cent.*, 39, 778.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, FEBRUARY 1, 1899.

Present:

Mr. Walter Hills, President.

Mr. G. T. W. Newsholme, Vice-President.

Messrs. Allen, Atkins, Bateson, Bottle, Carteighe, Corder, Cross, Grose, Harrington, Harrison, Park, Savory, Symes, Warren, and Young.

The minutes of the previous Council meeting were read and confirmed.

The Late Mr. Alexander Kinninmont.

The President said since coming there that morning he had been informed of the death of one of their oldest and most respected members in Scotland. As he had not had the pleasure of meeting Mr. Kinninmont very often, he would avail himself of some notes which had been forwarded by the Assistant-Secretary in Scotland with regard to Mr. Kinninmont's career and work.

After reading Mr. Rutherford Hill's notes, the President added that he had had the privilege of meeting Mr. Kinninmont on two or three occasions, the last being in Messrs. Macfarlane's pharmacy, in Edinburgh, which had since been pulled down for public improvements near the North Bridge, and he recollected how feeble he then appeared. They would all agree that on the death of Mr. Kinninmont they had lost one of their most distinguished members.

Mr. Atkins desired to add a word of personal regard and regret. He must say he was not surprised to hear of Mr. Kinninmont's death, nor could he really say he was much grieved, for when he last met him some time ago at Crieff he thought he had never seen a man who was more shattered. Nevertheless he spent three or four weeks very pleasantly with him; they had long walks and talks on pharmaceutical and other matters, and he desired specially to endorse one point in the obituary notice which had been read, viz., the extreme breadth and depth of Mr. Kinninmont's reading. He was not only a fine pharmacist but a man of extraordinary reading, and his memory and reasoning powers were also very great. He was a man who held exceedingly strong views, and sometimes he hardly seemed amenable to argument on the other side, and he was always a doughty antagonist. But he was also a true and genuine friend, and having seen a good deal of him in private as well as public life he might say that he never saw a man whom he more thoroughly respected.

Retiring Members of Council.

The Secretary announced that the following members of Council would retire in May next by rotation in accordance with the provisions of the new Bye-laws:—Messrs. Bottle, Carteighe, Harrison, Harrington, Park, Southall, and Young.

The Registrar's Report.

The Registrar's report (see next page) was laid on the table and ordered to be published.

Election of Members.

The following persons having tendered their subscriptions for the current year were elected "Members" of the Society:—

Adams, John; Northampton
Aitken, William; London
Allen, William John; Cardiff
Arthur, Harvey Phillips; Glasgow
Barker, Thomas Henry; Birmingham
Barnes, Thomas; Preston
Bates, John; Newton Heath
Bell, Charles Edward; Stapleford
Bell, William Smith; Leith
Bennett, Frank William; London
Bentley, Thomas; Hanley
Billing, Thomas; Albourne
Boulton, Algernon; Westgate-on-Sea
Bramley, William Miles; Birmingham
Brooks, Charles; London
Brown, John; Walker-on-Tyne
Brownen, George; Boscombe
Bushby, George F.; Manchester
Carter, Henry Lansdale; Wimbledon
Chapman, James; Kirkliston
Clapham, Frederick George; Cape Town
Cocker, Justus John; Bradford
Cossey, James Davis; Wellington
Crofts, Lionel G.; Hucknall-Torkard
Cubey, Robert; Blaydon-on-Tyne
Cuff, Sidney Wilmot; New Barnet
Cugnoni, Alfred H. D.; Hoxton
Dalton, Edwin Tapscott; Wandsworth
Dance, James George; Birmingham
Dancy, Ralph; Crawley
Dannatt, Philip; Birkenhead
Dawson, Edwin; Camberwell
Dawson, Peter; Alva
Dawson, Sidney William; Leeds
Dean, John; Ashbourne
Deeping, William Rollinson; Leicester
Delarue, Edward Ludlow; Brockley
Dobie, James Turner; Salisbury, S.A.
Dodsley, Charles Edward; Burnley
Downing, Frederick; Launceston
Downward, John James; Tooting
Drummond, Robert Gordon; Falkirk
Dudgeon, Tom Skipsey; Oxford
Eatough, Joseph Stanley; Blackburn
Ellis, John; Brentwood
Evans, Evan Emrys; Aberdare
Evans, John; Aberdovey
Evans, John Owen; London
Feaver, William; Truro
Felix, David Lewis; Mold
Ferriday, Arthur Harry; Oakengates
Ferrier, James Peebles; Dundee
Ferryman, Herbert; Southampton
Fishbourne, James W.; Dunfermline
Flemming, T. H.; Newcastle-on-Tyne
Francis, John Herbert; Wrexham
Franklin, Alfred James; Brighton
Gallimore, James S.; Northampton
George, William Blissett; Manchester
Gifford, James; Blackburn
Gorst, William; Worcester
Gow, Adam; London
Greig, William Sinclair; London
Griffin, Joseph T.; Kidderminster
Griffin, William John; London
Guest, George Ernest; Barnsley
Gwinn, Frederick Walter; Leytonstone
Hare, George Edward; Nottingham
Harrison, John; Manchester
Hatt, Harold Ernest; Wallingford
Heighington, Thomas Gordon; London
Hill, John Staniforth; Warrington
Hitchon, Peter; Southport
Hodge, Ernest Alfred, Devonport
Hodgson, Charles Garforth; Leicester
Hughes, Job; Worcester
Hutton, John; Brechin
Ingham, James; Ossett
Ireland, Alfred C.; Bournemouth
Jacklin, Alfred; Manchester
Jackson, George; Manchester
Jones, Humphrey R.; Llangollen
Kent, John Collison; Woolwich
Kirby, Frederick; Northampton
Lacey, Richard; Abingdon
Lane, Harry Richard; Richmond
Lassasie, Laura L. de; London
Lincoln, John Edward; Ipswich
Livesey, Henry Ayrton A.; Manchester
Lloyd, Edward; Colwyn Bay
Lockwood, Harold S.; Manchester
Loosmore, Edward James; London
Lucas, William; Northampton
McIntosh, Alexander; Edinburgh
Mackereth, George H.; Ulverston
Mandelson, Samuel Cohen; Bayswater
Massey, John; Manchester
Maxwell, Arthur T.; Newcastle-on-Tyne
Meadley, George Holmes; Sheffield
Measday, Charles Stafford; Deal
Meldrum, Martin; Glasgow
Middleton, Burton; Paddington
Miller, Edwin Frederick; Ipswich
Mitchell, Willie; Hull
Monaghan, John Edward; Tooting
Moore, Kate Lilian; Shanghai
Nash, Ernest; Manchester
Nicholson, Gilbert; Tunbridge Wells
Nicolson, David Walker; Leith
Norton, Frank; London
Oakey, Joseph; Manchester
Oglesby, Arthur; Barnsley
Oswald, Charles Holdway; Partick
Owen, Griffith Charles; Welwyn
Owles, Charles Edward; Bungay
Page, Harry; Nottingham
Page, Henry Skikelthorpe; E. Dereham
Palmer, George William; Ely
Parker, Alfred; Uttoxeter
Parker, Herbert Thomas; Rochester
Parkinson, Charles; Blackburn
Parkinson, Robert Holroyd; Preston
Parkinson, Thomas Gott; Liscard
Peck, John Wicliffe; Harlesden
Peel, Alfred; London
Pentney, Fred.; Birkenhead
Percival, Thomas H.; Walthamstow
Phethean, James; Bolton
Pickford, Arthur Ferdinand; London
Pilkington, John; Sale
Poole, Hugh; Dunedin
Pring, William W.; London
Procter, Henry R.; Hammersmith
Ramsay, Robert Sparks; Dundee
Ramsden, William; Manchester
Rayner, Alfred; Guildford
Reid, John London; Edinburgh
Rhead, Alfred; Mussoorie
Rice, John William; Richmond
Richards, Marmaduke; Singapore
Richardson, William; Burnley
Ridge, Herbert W.; Northampton
Ritchie, David French, Birmingham
Roberts, William Henry; Southport
Robertson, Wilfred George; Cambridge
Robeson, Charles B.; New Cross
Rogers, Frank; Petworth
Roper, William Isaac; Plymouth
Rymer, Frederick Victor; Northampton
Sandbrook, John; London
Saul, William O.; Southbourne-on-Sea
Saunders, Frederick George; Mentone
Scott, Charles; Edinburgh
Seath, John Alexander; Dunfermline
Sibthorp, Stephen J. K.; Hampstead
Sidebottom, Joseph; Church
Simmonds, Frank Living; Portland
Simpson, Gilbert; Edinburgh
Simpson, Henry; Glasgow
Sinclair, Robert; Falkirk
Skinner, William; N. Tawton
Slater, John Morrison; Loftus
Sloan, Charles Alexander; Wrexham
Smith, Charles Clegg; Manchester
Smith, Harry James; Kimberley
Smith, Richard Silcock; Norwich
Smith, William Murray; Alford
Snow, George Foster; London
Spencer, Charles; Kensington
Spyer, Arthur Jesse; Watlington
Stearn, Leonard; Margate
Stevens, Edmund Matthew; Dover
Taylor, John James; Twickenham
Thackray, Charles Frederick; Leeds
Thompson, Frederick William; London
Thompson, Harry; London
Thompson, James; London
Thornber, William; Accrington
Thwaite, Ernest Edward; Wem
Todd, John William; London
Toyne, Charles Robert; Putney
Tyrer, Peter; Bermondsey
Waite, Herbert Shuttleworth; Leeds
Walden, Robert Woolley; London
Walker, James Eteson; Preston
Wallis, Charles James Boyd; London
Wallis, George; Norwood
Wamsley, William Bunting; Stockport
Ward, Oswald Thomas; Northampton
Wells, William Luty; London
West, Henry Thomas; Manchester
Westlake, George Frederick; Brompton
Westmacott, George H.; Manchester
Wharton, Anthony James; Hull
Wheeler, Alice Maude; Hull
White, Gilbert; Cambridge
White, James Carter; Grimsby
Wilcockson, William; Derby
Wilkie, John Matthew, Derby
Wilkinson, Charles Edward; London
Williams, Herbert Edward; Brighton
Williams, John; Criccieth
Williamson, George; Bollington
Wilson, Ernest Joseph; Southsea
Wilson, James Bell; Dumfries
Wood, Arthur Henry; Nottingham
Wood, Robert; London
Yeates, Alfred; Stourbridge

REGISTRAR'S REPORT.

SUBSCRIBERS TO THE SOCIETY FOR THE YEAR 1898.

	Life Compounders.	Annual Subscribers.		
		Members and Associates in Business.	Associates not in Business.	Students.
Number in 1897	297	3532	946	873
,, restored in 1898	—	37	—	—
,, elected in 1898	11	193	—	—
	308	3762	—	—
Deaths, Secessions, etc.	9	238*	—	—
Total Strength of the Society	299	3524	1017	866

* Some of these have paid the life composition fee and have been transferred to the table of Life Compounders.

ANALYSIS OF EXAMINATIONS FOR THE YEAR 1898.

FIRST EXAMINATION.

Number of Candidates during the Year.	Number of successful Candidates during the Year.	Number of Rejections during the Year.	Number of Examinations during the Year.	Average number of Candidates at each Examination.	Average number of Rejections at each Examination.	Percentage of Rejections.
1349	637	712	4	337·25	178	52·78

Number of Certificates received in lieu of the First Examination 141

MAJOR, MINOR, AND MODIFIED EXAMINATIONS.

ENGLAND AND WALES.

Examinations.	Number of Candidates during the Year.	Number of Successful Candidates during the Year.	Number of Rejections during the Year.	Number of Examinations during the Year.	Average Number of Candidates at each Meeting.	Average Number of Rejections at each Meeting.	Percentage of Rejections.
Major	111	60	51	4	27·75	12·75	45·94
Minor	1,162	354	808	4	290·50	202·00	69·53

SCOTLAND.

Examinations.	Number of Candidates during the Year.	Number of successful Candidates during the Year.	Number of Rejections during the Year.	Number of Examinations during the Year.	Average Number of Candidates at each Meeting.	Average Number of Rejections at each Meeting.	Percentage of Rejections.
Major	10	4	6	4	2·50	1·50	60·00
Minor	517	181	336	4	129·25	84·00	64·99

THE REGISTERS OF PHARMACEUTICAL CHEMISTS AND CHEMISTS AND DRUGGISTS, 1898.

Additions during the year:—

Number of persons who have passed the—		
Minor ,,		535
Major ,,	64†	
Number of persons restored to the Register on payment of a fine		21
		556

Erasures during the year:—

Deaths	296
Erased at the request of registered persons themselves	2
Increase of numbers on the Register	258
	556

† These having already been included in the number who passed the Minor, do not increase the numbers on the Register.

Number of Pharmaceutical Chemists on the Register, December 31, 1898 2,265
,, Chemists and Druggists 13,208
15,473

Election of Student-Associates.

The following having passed the First Examination and tendered their subscriptions for the current year were elected Student-Associates of the Society :—

Alcock, Robert Frank ; Southampton
Appleton, John Thompson ; Sheffield
Appleyard, Charles Percival ; Bradford
Ashford, Stanley ; Exeter
Beveridge, Charles E. ; New Brompton
Bonello, Francis ; Malta
Cabannes, Casimir Louis ; Skegness
Campbell, Francis Thomas ; Wigton
Clarke, Andrew McLean ; Leith
Clayton, James ; Gt. Harwood
Cole, Georges Marie Joseph ; Jersey
Coltart, John Alexander ; Warwick
Davies, William George ; New Quay
Dobson, Joseph H. ; Gt. Harwood
Duckworth, Arthur; Heaton Moor
Edmondson, John ; Padiham
Elford, Thomas Mitchell ; Plymouth
Field, William Joy ; Cambridge
Fowler, William Holman ; Southboro'
Gordon, John Hamilton ; Bathgate
Graham, Frederick Forster ; Pittington
Graham, John Moffat ; Workington
Hall, Arthur ; Chesterfield
Hobbs, Henry A. ; Burnham, Som.
Holden, Wilfrid Curtis ; Southampton
Houghton, Herbert ; Huddersfield
Hunt, Frederick ; Chichester
Irving, Isaac Nicholson ; Appleby
Jones, Alfred Lionel ; Rhyl
Lasham, Herbert Crocker ; Wisbech
Legge, Henry George B. ; Norwich
Macmanus, Josephine ; Berkswell
Maddison, Edwin Robson ; Brotton
Melling, A. E. ; Ashton-in-Makerfield
Middleton, Herbert G. ; Knottingley
Mitchell, James ; Alnwick
Pare, Charles Percy ; Bolton
Rees, Rees ; Pyle
Robinson, John G. ; West Hartlepool
Rowse, William James ; Reading
Ruoff, Francis Hermann ; Reading
Said, Arthur ; Malta
Slayter, Harry George ; Northampton
Spiteri, Nicola ; Malta
Sprott, Francis Holliday ; Maryport
Stephens, Benjamin Morrell ; Paris
Stephens, Ernest Hutton ; Sunderland
Stokes, Charles Albert ; Bristol
Tolmie, William John ; Stornoway
Tully, James Turnbull ; Kelso
Turner, John Henry W. R ; Rotherham
Whitworth, Arthur Upsall ; Sleaford
Willox, Leonard Stephen ; New Pitsligo
Wood, Lawrence Edward ; Brentford
Woodward, Henry Knowles ; Halifax

Restorations.

Several persons were restored to their former status in the Society.

Appointment of Examiners for Pereira Competition.

The President moved that Professor Farmer, Professor Millar Thomson, and Mr. Robert Wright be appointed examiners for the Pereira medal and Council Prizes' competition in April next. This would be the first occasion on which the competition would take place in the month of April. Hitherto it had been conducted in July, but according to a resolution passed by the Council last year, and bearing in mind that the usual advanced courses were completed at the April examination, the alteration was made, and, therefore, it was necessary that the examiners should be appointed for that competition earlier than usual.

The resolution was passed.

Appointment of a Divisional Secretary.

The President moved that Mr. A. E. Lawson, of 60, Exmouth Street, be appointed divisional secretary for the central division of the Parliamentary borough of Finsbury.

The resolution was passed.

Finance Committee.

The report of this Committee was of the usual character, and recommended various accounts for payment.

The President moved the adoption of the report, which was carried.

Benevolent Fund Committee.

The report of this Committee included a recommendation of grants to the amount of £52 in the following cases :—

A registered Chemist and Druggist (63), whose name was erased in 1884, in ill health and without employment. (London.)

The widow (67) of a Chemist and Druggist and subscriber for five years. (Manchester.)

The widow (73) of a Pharmaceutical Chemist member (1851-68). She has had two previous grants. (London.)

The widow (68) of a Pharmaceutical Chemist member (1853-60) and subscriber, who has had eight previous grants, and suffers from chronic rheumatism (Doncaster.)

A life member (66), whose case was referred to last month. (London.)

Two other applications were deferred for further information.

The Vice-President moved the adoption of the report and recommendations, which was at once agreed to.

Library, School, and House Committee.

The report of this Committee stated that the Librarian ha presented his usual report, including the following particulars regarding attendance at the Library :—

	Attendance.	Total.	Highest	Lowest.	Average.
December	Day	395	30	1	16
	Evening	61	12	0	3
Year 1898	Day	4066	33	1	13
	Evening	1027	19	0	5

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
December	175	94	81	17*s.* 4½*d.*
Year 1898	1999	1032	967	£10 0*s.* 8½*d.*

The Committee recommended that the undermentioned books be purchased :—

For the Library in London :—

Köhler, Medizinalpflanzen, Band 3.
Luff, Forensic Medicine and Toxicology.

For the Library in Edinburgh :—

Ruddiman, Incompatibilities in Prescriptions.
Bower, Practical Botany for Beginners.
Ramsay, Elementary Systematic Chemistry.
Strasburger, Botany.

The Curator's report had also been received, and included the following particulars :—

	Attendance.	Total.	Highest.	Lowest.	Average.
December	Day	524	40	3	21
	Evening	43	5	1	2
Year 1898	Day	5553	44	1	19
	Evening	463	11	0	2

Several donations to the Library and Museum had been received (see *P. J.*, January 21, p. 57), and the Committee had directed that the usual letters of thanks be sent to the respective donors.

"Jacob Bell" and "Manchester" Scholarships Regulations.

The Committee had recommended that the words "An Elementary knowledge of Chemistry, Pharmacy, and Botany" in the present regulations relating to the Science subjects be replaced by the following :—

> Botany, Chemistry, and Pharmacy based upon an elementary knowledge of the principal Chemicals, Drugs, and Processes of the British Pharmacopœia, such as a student may be reasonably expected to have acquired during his apprenticeship.

The Committee had also recommended that in future one Examiner only should be appointed to conduct that portion of the examination comprising the three technical subjects, with a view to keeping the standard of the examination within the limits of the knowledge that might reasonably be acquired by competitors during their term of pupilage.

The Committee had further recommended that the marks for the three technical subjects should not be given separately for each subject as at present, but that the three subjects should be regarded as one paper.

A letter had been received from Mr. Lansdown with reference to the properties owned by the Society, and the Committee recommended that Mr. Lansdown, the Society's surveyor, be instructed to make a survey of the various properties as suggested in his letter, and that such survey be repeated every ten years.

The President, in moving the adoption of the report, said there were two points to which he wished to refer, though one only required a word or two. All would agree that it would be advantageous to have a periodical survey of the property, as suggested by the Committee, but probably once in ten years would be sufficient, unless, as suggested by the surveyor, the property had changed hands or there were reasonable grounds for supposing that it was being depreciated. The interest of the Society being very considerable in these properties, it would be only like prudent business men to have these periodical surveys. The subject on which he wished to speak more particularly was the suggested alterations in the regulations for the Jacob Bell and Manchester Scholarships. Some time ago the question was raised by Mr. Allen, who took great interest in the subject, that possibly some better definition of the words "an elementary knowledge of chemistry, pharmacy,

and botany" might be adopted. The matter had been before the Committee for some time, but owing to the large amount of work which that Committee had to do, it had only really been dealt with at the last meeting, when the Committee came to the conclusion which had been reported. The kind of student to whom the Council desired to award these Scholarships was pretty well indicated in the notice in the Calendar. Having read the paragraph referred to, the President pointed out that the examination and award was really intended for the encouragement of those youths who had in the first instance a good elementary education, and who perhaps in spite of certain disadvantages under which they might labour in the provinces or elsewhere might have used their abilities and time to such advantage that they could pass a creditable examination, and so do justice to the latter course of instruction provided in the Society's School. The class of students whom it was not so much desired to encourage were men who had some exceptional advantages, pecuniary or otherwise, and who could present himself here and take away the scholarship from those who perhaps had had less favourable opportunities of acquiring a wider knowledge of science. The larger proportion of marks in this examination was given for what might be termed general school knowledge, and it was found that general elementary knowledge was so much advanced that the young men who came up ran almost neck and neck in these subjects, and very often the award was made very largely on the position they attained in the three technical subjects. It was therefore of great importance that the examination in these subjects should be on the best possible lines. They were defined as an "elementary knowledge of chemistry, pharmacy, and botany," and it was very difficult to define what was meant by "elementary knowledge," that was the question remitted to the Committee, and the conclusion arrived at was, he thought, a satisfactory way out of the difficulty. There were certain disadvantages in recommending any particular text-book, and the Committee had, therefore, gone to the Pharmacopœia and said that the knowledge of botany, chemistry, and pharmacy which was required should be based on what a student or an apprentice might be expected to acquire during the course of his apprenticeship, and that the chemistry, pharmacy, and botany should really be within the limits of those sciences as found in the B P. It had come to the knowledge of the Committee that there were certain young men who were now actually prepared, and that there were persons ready to prepare students for this particular examination. He thought the Council would agree with him that that was not what they wished to encourage. They did not want any special preparation by specially qualified teachers for these scholarships. They wanted to find out and encourage the young men who had been working during their apprenticeship, and had been making the best use of their opportunities, and who might not otherwise have the chance of coming to their School. He thought that by so restricting the scope of the examination in these three technical subjects they would encourage the young men of the class to which he had referred and enable them to stand a better chance of gaining a scholarship than they would under the present conditions, when probably the word "elementary" might be strained occasionally to cover a wider field of knowledge than was anticipated when the regulations were laid down. There was one other point on the report to which he wished to refer. The Committee suggested that instead of there being two examiners for these technica subjects there should in future be one. That suggestion was made with the same object, and he was glad to say that now they generally had a good competition for this scholarship, assuming that twenty candidates came up, and that twelve or fourteen of those came up to a good standard in elementary general knowledge, and were almost bracketed together on these subjects; they were then examined in the technical subjects, and the Committee came to the conclusion that a single individual, probably a member of their Board of Examiners, would be better able to say which was the best candidate for the scholarship, by himself taking all the three subjects, than when two men took two different subjects, or three subjects between them, and afterwards conferred. It was thought that a single examiner would thus be able, from the general tone of the answers given by the candidate on the various subjects, taking them as a whole, to form a better idea of the candidate who would do most credit to the subsequent training which he would have, and who was most probably the man to whom they would best like to award the scholarship, always requiring, of course, that these competitions should be awarded by means of a motto, and, therefore, none of the examiners should know the name of the candidate with whose papers they were dealing. He thought it was necessary that he should say so much as he had in order that they might thoroughly understand the reasons which had guided the Committee in making the suggestions for the future regulations for awarding the Bell Scholarships. If the suggestions of the Committee were agreed to, it was proposed that the regulations should be amended so as to apply to this year's examination. There would be no hardship to any individual candidate, as it only defined a little better the range of the technical subjects in which the competitors were examined.

Mr. Allen, in seconding the resolution, said he could add very little to what the President had said in reference to the Bell Scholarship, but he should like to place on record the fact that this was a subject which had been in his mind for a considerable time. The President had said that owing to the large amount of work which the Library Committee had, the question had been shelved from time to time; that was perfectly true, but he had been calling attention to the subject for some years, and it was rather singular that the proposition should be before them at the present moment. He was very pleased to see the prominence the President had given the subject at that Council. It was an important subject for two reasons. It was most important to distinguish who were studying and who were preparing for this examination, and it was a very important thing for the masters to clearly point out to their pupils in the future the lines on which this examination would be conducted. He thought the suggestion of taking the British Pharmacopœia as the definition of the elementary work was a good one. The Pharmacopœia was obviously a first-rate book, and whatever the student might be doing for the work of the Bell Scholarship would also be preparing him for the Minor examination. The Committee had really gone further than his original idea, inasmuch as they had also regulated to some extent the examination itself. He perfectly agreed with that; it was more than he should have thought of asking, but he thought the suggestion which the President had put before them as to the mode of conducting the examination in future would be a great advance on the present mode.

Mr. Bottle said he was not present at the last meeting of the Committee, but he supposed the restriction of the examination to one examiner had been well considered. He thought if he had been present at the last meeting he should have had something to say on the point. He hoped the measure would work well, but he was not quite satisfied in his own mind that the examination should be conducted by one man.

The President said Mr. Bottle must understand that it was

only in the three technical subjects that it was proposed to have one examiner.

Mr. Bottle said that being so he was quite satisfied.

Mr. Carteighe suggested that the report of the recommendations of the Library, Museum, School and House Committee be adopted, and that the regulations therein which applied to the Bell Scholarship should be also applied to the Manchester Pharmaceutical Scholarship.

The resolution in this form was passed.

Report of the Law and Parliamentary Committee.

Two meetings of this Committee had been held, at the first of which a letter was read from the Lord Chancellor's Secretary, acknowledging the receipt of a letter from the President of January 9, and saying that the Lord Chancellor thought an amendment of the law desirable, and would be prepared to introduce a Bill into Parliament if there should appear to be a reasonable prospect of proceeding with it. At the second meeting the President submitted the draft of a Bill which he had prepared on the lines of his letter to the Lord Chancellor, and this was adopted by the Committee, which recommended that it should be forwarded to the Lord Chancellor as suggestions for a Bill to be introduced by him during the ensuing Session. (The suggestions are printed at page 106.)

The President, in moving the adoption of the report, said he need not speak at any length, because the draft which had been read spoke for itself, and covered matters with which they were all familiar. At the Council meeting in December he was requested to address a communication to the Lord Chancellor pointing out the way in which the Council thought it would be advisable in the interest of the public that the Pharmacy Act, 1868, should be amended, and they had heard the Lord Chancellor's reply. They knew that he was much interested in this subject, and it had been thought desirable by the Committee that this draft suggestion for a Bill should be sent to his Lordship in order that he might have something definite before him. As he had said more than once before, in attempting any amendment of the pharmacy law, two factors were, in his opinion, essential to success. In the first place, they must have the support of the Government and, in the second place, they must have a practically unanimous support from all registered persons. He believed that in making these suggestions they were really acting as the mouthpiece of nearly all registered persons throughout Great Britain. It appeared to him that this was really a suggestion to revert to the principles underlying the Pharmacy Act of 1868. That Act said: "Whereas it is expedient for the safety of the public that persons keeping open shop for the retailing, dispensing, and compounding of poisons," etc. The question was what was "keeping open shop." It was generally understood to refer to the person or persons who owned the shop. As they all knew, under a decision of the House of Lords, certain persons could put themselves outside the Act by converting themselves into an entity which could not be examined or qualified; under the House of Lords judgment they could, under certain conditions, keep open shop. The suggestions now made, as he said, reverted to the principle underlying the Pharmacy Act, 1868, that a person keeping open shop should be qualified and registered. He need hardly point out that the suggestion included compounding and dispensing medicines, so making it more purely a Pharmacy Bill, and not restricting the privilege to dealing in poisons only. He would also call attention to Clause 5, which referred to the winding up of the estates of deceased registered persons, the suggestion being that the term during which such be carried on should be restricted to twelve months. It would be quite impracticable for a business to be sold immediately on the death of any registered person, but twelve months was a reasonable time for making the necessary arrangements. The Committee had unanimously agreed to these suggestions, and therefore he need not enlarge further upon them. He hoped the Lord Chancellor would see fit either to introduce a Bill on these lines, or at least to make some suggestions to them on the subject.

The Vice-President, in seconding the motion, said the Draft Bill, in his opinion, would bring about not only what they themselves wanted, but what the public ought to have. He thought the underlying principle of the Pharmacy Act, 1868, was that the compounding and dispensing of medicines, not merely of poisons, should be restricted to qualified men. Unfortunately, the word "poisons" appeared in the Act, and that was the only privilege they possessed, which was a great mistake in every point of view. It had been said over and over again that a chemist's shop was a huge poison cupboard, and that practically everything in it has more or less a poison. There was a very great responsibility attached to dealing with many drugs not scheduled as poisons, and it required an educated person to deal with them. He thought all chemists would be in favour of a Bill of this kind, and he believed that in nearly every other country in Europe the sale and compounding of medicines was confined to qualified chemists. No doubt such a Bill as this, if approved by the Lord Chancellor, would meet with an immense amount of opposition, but he believed that if the members of the Society would all put their shoulders to the wheel and support the Council, some good Bill, even if it did not contain everything they desired, would be passed.

Dr. Symes thought the present was an opportune moment to call attention to the fact that the medical profession were at the same time promoting a Bill of a similar kind. That body probably felt the unfairness of "company" competition just as much as they did, and as they were fellow sufferers from a common evil, it would be well for the pharmacists throughout the country to help their medical friends while they were pressing forward their own measure. In the meantime, medical men might help them a good deal; they might do so individually by endeavouring to persuade their patients to get their prescriptions prepared at a *bonâ-fide* pharmacy owned by a chemist and druggist instead of at a store. On the other hand, they might be of some service to the medical profession in helping forward their measure, because they were really two different branches of one great profession, and run on very similar lines.

Mr. Atkins rose to cordially support the resolution, as he did not wish it to be thought that he was at all lukewarm in accepting the suggestions which had been made. He had no doubt, as the Vice-President had intimated, they were inviting a big fight, but he thought their policy should be that they should burn their boats, destroy their bridges, and commit themselves to the fight. If these tentative suggestions were put before the Lord Chancellor he would deal with them in the practical way hinted at by him in his correspondence with the Society. He hoped the President was right in intimating that they might expect to have an almost unanimous vote, but from what they had already seen and heard it clearly would not be absolutely unanimous. He would like to say a word on the "Widows' Clause," on which probably the fight would be most severe. If the question were to be argued from a sentimental point of view only he should say the clause ought to stand, but he was satisfied on logical grounds that the clause must go. They could not go to the country with any proposed legislation until they had put the legislation affecting their own body in a

position of the strictest legal precision. He was therefore prepared to support, though reluctantly, Clause 5, which dealt with the exemptions. Legislation of the kind proposed took them back to the position of affairs existing prior to the Mackness catastrophe. The carrying out of the proposed legislation was a simple act of justice to the men whom the country rightly demanded should be examined and registered. The present competition by corporate bodies might be legal, but he said distinctly that his view was that it was essentially illegitimate. That they would have a big fight with vested interests was inevitable, but he would rather lose in that fight than that they should consent to any half measures.

Appointment of a Watch Committee.

It was unanimously resolved that the President, Vice-President, and the London members of the Council be appointed a Committee to watch Parliamentary proceedings during the ensuing Session, and to act in the interests of chemists and druggists in such matters as required immediate action.

Report of Examinations.

January, 1899.

	Candidates.		
	Examined.	Passed.	Failed.
First Examination.....	332	145	187

Ten Certificates were received in lieu of the Society's Examination.

Correspondence.

The Secretary reported the receipt of a letter from the Clerk to the Privy Council, acknowledging the receipt of the resolution passed at the special general meeting, adopting regulations with regard to the keeping, selling, and dispensing of poisons, which regulations had been submitted to the Lords of the Council.

The President said several letters had been received from associates residing abroad, who desired to avail themselves of the privilege of becoming members of the Society, and containing very gratifying expressions of their loyalty to the Society. It was very satisfactory to find that the passing of the recent amending Act had given satisfaction to a large number of associates not only in England, but in various parts of the Empire, and he was glad to think that there would in future be a larger number of members scattered about all over the world. The following letter had been received from Mr. Glyn-Jones :—

To the President of the Pharmaceutical Society of Great Britain.

Sir,—I think it right, as a member of the Society, to call attention to a letter I have addressed to the Privy Council in regard to the dispensing of poisons in doctors' surgeries. A copy of the letter is printed in the Journal of the Society, January 21, page 72, and you will observe, from correspondence in the Journal and other journals of pharmacy, that the matter is regarded as of vital importance to the drug trade. A resolution from the Chemists' Assistants' Union, calling attention to this evil, was considered by your Council at its meeting in November last, but it appears, from the report, that its purport was not understood. It is of the utmost importance, whether poisons are dispensed in open shops or private surgeries, that only qualified dispensers should be employed. Indeed, the more private the surgery the greater the need for qualification. If the Pharmacy Act does not afford a remedy, I respectfully suggest that your Council should take immediate steps to secure an amendment of the Act, and I think that in so doing they would receive the support not only of their members, but of the medical profession and public generally.

I am, Sir,
Yours respectfully,
(Signed) W. S. Glyn-Jones.

Aveley, Essex.
January 30, 1899.

The President moved that this letter be referred to the Law and Parliamentary Committee, which was at once agreed to.

General Purposes Committee.

The report of this Committee included the following letter from Sir William Turner, and it was recommended that the President be requested to reply, saying that the Council would accept the invitation, and appoint two representatives to confer with the Pharmacopœia Committee.

General Council of Medical Education and
Registration of the United Kingdom,
299, Oxford Street, London, W.
December 17, 1898.

To the President of the Pharmaceutical Society of Great Britain.

Sir,—In the Report of the Pharmacopœia Committee of the General Medical Council presented to the Council on November 29, it was suggested that steps should be taken for examining into certain of the criticisms made on statements in the British Pharmacopœia, 1898, and for accumulating information which might be of service for the publication of the next Pharmacopœia.

It was also suggested that the Pharmaceutical Societies of Great Britain and of Ireland should be invited to co-operate in the inquiries and investigations which will thus be necessary, and to appoint representatives to confer with members of the Pharmacopœia Committee. These suggestions were adopted by the Council, and I have, therefore, to ask whether in accordance therewith your Society will be willing to co-operate and to appoint two representatives for the Conferences proposed.

Should your Society accept the invitation of the Medical Council, it will devolve on the Pharmacopœia Committee to make all the necessary arrangements. I may add that the Pharmacopœia Committee are empowered by the Council to appoint experts in Pharmacy and Chemistry to whom matters requiring special investigation may be referred for report.

I have the honour to be,
Very faithfully yours,
(Signed) Wm. Turner,
President.

The President, in moving the adoption of this portion of the report, said he thought the Committee had come to a wise conclusion. Of course experience alone could decide whether such a system as was here proposed in outline would work satisfactorily, but he believed it was a step in the right direction, and it was a step which he had suggested to those interested in the matter, and he believed it would lead to good results, both as regarded the preparation of another edition of the Pharmacopœia, and also as to the status which pharmacists would occupy in connection with that work. It was highly desirable on every ground that pharmacists and medical men should be brought into direct and personal contact, and that would be the effect of this proposal.

The resolution was carried unanimously.

The Council then went into committee to consider the legal portion of the report. On resuming the report and recommendations were adopted, and a special resolution was passed authorising the Registrar to take proceedings against the persons named therein.

"FIRST" EXAMINATION RESULTS.

A meeting of the Board of Examiners for England and Wales was held on Monday, January 30.

Certificates by approved examining bodies were received from the undermentioned in lieu of the Society's examination.

Buckle, Sydney James ; Malton
Day-Lewis, Robert Charles ; London
Eaddie, Walter ; Doncaster
Eminson, Herbert ; London
Goggs, Herbert John ; Huntingdon
Gordon, Salomon ; Manchester
Peel, Richard ; Liverpool
Schneider, Paul ; London
Spencer, Herbert Edgar ; Edinburgh
Waterhouse, F. H. ; Southampton

The report of the College of Preceptors on the examination held on January 10 was received. 332 candidates had presented themselves for examination, of whom 187 had failed.

The following 145 passed, and the Registrar was authorised to place their names upon the Register of Apprentices or Students :—

Addison, Jeremiah ; Morecambe Bay
Aldridge, Claude Augustus ; Bristol
Archer, John William ; Walthamstow
Aspell, James ; Leicester
Battersby, Frank ; Stockport
Beedie, James ; Turriff
Billany, John Boyd ; Hull
Bishop, Alfred Oscar ; Beckenham
Blair, Douglas Panton ; Perth
Bott, Edith Beilby ; London
Boyd, John ; Hammersmith
Bracewell, John William ; Ramsbottom
Breckenridge, Samuel ; Newton Stewart
Bromhall, Herbert John ; Uppingham
Carey, Sydenham Godfrey ; Islington
Chalmers, John ; Leith
Chalmers, Robert Westland ; Aberdeen
Clark, Edward Joseph ; Croydon
Clark, James ; Liverpool
Cross, William Gowen, jun. ; Shrewsbury

Dales, Percy George ; Stainboro'
Davies, Henry Ford ; Penarth
Deacon, Walter; New Swindon
Dewberry, Elliot B. ; Norwood
Dickie, John George ; Turriff
Douglas, John ; Southampton
Duffield, Francis A. ; Sutton Coldfield
Duguid, Beatrice H. ; Aberdeen
Dunsmore, William ; Paisley
Edwards, Joseph Henry ; St. Asaph
Elliot, George ; Hawick
Evans, Ellis Waldron ; Birmingham
Evans, Evan ; Southampton
Fargher, Alfred Leo ; Ramsey
Findlay, George Wilson ; Aberdeen
Fletcher, Robert ; Burscough Town
Flint, James ; Duns
Frank, Ralph C. ; Leighton Buzzard
Forsyth, Charles Mitchell ; Aberdeen
Fyvie, Alexander ; Fraserburgh
Gaman, Alfred John ; Swansea
Gibb, Robert ; Aberdeen
Gordon, John Mason ; Aberdeen
Gorton, Bernard ; Snaresbrook
Grant, George Stuart ; Fraserburgh
Gray, Arthur Edward ; Bath
Grierson, John Callander ; Douglas
Grime, James ; Darwen
Hadfield, Roland Hurst ; Preston
Haigh, Harold William ; Meltham
Hall, William Douglas ; Skegness
Hamnett, A. Edmundson ; Waterloo
Hancock, Frank ; Weymouth
Henderson, Henry; Gateshead-on-Tyne
Heywood, Agnes ; Southend-on-Sea
Holmes, Ernest George; Clay Cross
Horsfield, Percy ; Wakefield
Hoyle, Ernest: Stockport
Huggins, Robert Henry ; Wainfleet
Hughes, John ; Aberystwith
Hutcheon, John ; Fife-Keith
Hutchison, D. Alexander ; Arbroath
Jackson, Spencer ; Ambleside
James, Francis Howard ; Brondesbury
Jenneus, John Harry ; Birmingham
Jervis, John Johnstone ; Peebles
Jones, Edward ; Prestatyn
Jones, Evan Herbert ; Amlwch Port
Jones, Frederick Thomas ; Wigan
Jones, John Connop W. ; Aberystwith
Jones, Nathaniel ; Penygroes
Kydd, Henry John ; Arbroath
Langshaw, Joseph ; Wigan
Livesley, Charles A. ; Whaley Bridge
Low, Edith Jane Naysmith ; Arbroath
McEachran, Archibald ; Campbeltown
McHardy, William Norman ; Buckie
Mackay, Neil ; Dumbarton
Maddison, George E. ; Pelton Fell
Main, Daniel ; Elgin
Mathews, Francis C. ; Cirencester
May, George ; Fraserburgh
Mellor, Ethel Helen ; Dilwyn
Mitchell, James P. ; Grantown-on-Spey
Morison, Alexander D. ; Clydebank
Naylor, Frank Cottage ; Chester
Naylor, George ; Blackpool
Neave, William Peebles ; Dundee
Neill, Neil Sutherland ; Kingsmuir
Newby, Frank ; Oldham
Nind, Herbert Richard ; Worcester
Noble, John ; Newhaven
Noble, Watson ; Glasgow
Owen, William Thomas ; Llanrug
Pace, Lewis ; London
Parkes, William Clucas ; Douglas
Parkinson, Charles M. ; Blackburn
Parson, Mervyn Ernest ; Cambridge
Paterson, Archibald G. B. ; Girvan
Pattison, Walter ; Whitby
Pimblett, Annie ; Preston
Pott, Frederick T. F. ; Birkenhead
Rae, Walter Thomson ; Galashiels
Raine, Edwin ; Darwen
Rainford, George ; Chorley
Richardson, Cecil G. ; Southampton
Rigby, James ; Barnsley
Robertson, Andrew ; Markinch
Ross, John Logan ; Saltcoats
Rowe, Francis Kitch ; Bridgwater
Rowe, John Joseph ; Salisbury
Scarth, Arthur Gilead ; Morley
Scott, William N. ; Gateshead-on-Tyne
Scrimshaw, Sidney A. ; Worthing
Shaw, Richard Garfield ; Leeds
Silk, Mary Marguerite ; Birmingham
Small, Sydney Herbert ; Barnsbury
Smart, John ; Hawick
Smith, Cyril Carver ; Nottingham
Smollet, Charles Alex. ; Aberdeen
Snell, James Stanley ; Accrington
Souter, Walter Moore ; York
Spurge, Herbert Stanley ; Witham
Spy, Archibald ; Helensburgh
Storey, Francis Augustus ; Salford
Storrs, Leonard Carswell ; Penarth
Stout, Harry ; Tyldesley
Street, Sydney Charles ; Louth
Thomas, Thomas ; Dafen
Thomson, Mabel ; Brixton
Thomson, Robert ; Elie
Venn, Charles Ernest ; Wrexham
Walker, Alexander Calder ; Dundee
Wallace, Robert ; Chester
Wardle, Frederick C. ; Stalybridge
Watkins, Thomas Bevan ; Croydon
Watling, George Victor ; London
Watson, George R T. ; N. Berwick
Wheatley, George ; Barnsley
Whittaker, James Henry ; Uttoxeter
Willey, George Frederick ; Barnsley
Williams, Tudor G. ; Cefn
Wilson, John Bertram ; Penrith
Wilson, Thomas E ; West Hartlepool
Yeoman, Cyril ; Hartlepool

The questions set at this examination were published in the *Pharmaceutical Journal* for January 14, p. 36.

The following is a list of the centres at which the examination was held, showing the number of candidates at each centre, and the result :—

	Candidates.				Candidates.		
	Examined.	Passed.	Failed.		Examined.	Passed.	Failed.
Aberdeen	23	14	9	Inverness	4	2	2
Birmingham	14	6	8	Lancaster	6	3	3
Brighton	3	1	2	Leeds	17	7	10
Bristol	5	3	2	Lincoln	10	2	8
Cambridge	3	1	2	Liverpool	15	9	6
Canterbury	1	0	1	London	37	18	19
Cardiff	9	3	6	Manchester	39	17	22
Carlisle	4	1	3	Newcastle-on-Tyne	9	4	5
Carmarthen	4	4	0	Northampton	1	0	1
Carnarvon	8	5	3	Nottingham	15	3	12
Cheltenham	7	0	7	Oxford	4	1	3
Darlington	3	1	2	Peterborough	4	2	2
Dundee	11	7	4	Sheffield	10	2	8
Edinburgh	30	11	19	Shrewsbury	2	2	0
Exeter	1	0	1	Southampton	9	5	4
Glasgow	20	8	12	York	2	2	0
Hull	2	1	1				

SUGGESTIONS FOR A DRAFT PHARMACY BILL.

1. **Meaning of the word "person" in the Pharmacy Acts.**—In the construction of the Pharmacy Acts and of this Act, the expression "person" shall include a partnership or an association of persons or a body corporate.

2. **Medicines to be sold, dispensed or compounded only by qualified persons.**—From and after the passing of this Act it shall be unlawful for any person other than a Pharmaceutical Chemist or a Chemist and Druggist within the meaning of the Pharmacy Acts to sell, dispense, or compound or to keep open shop for the selling, dispensing or compounding of medicines.

3. **Penalties for Offences Against Clause 2.**—From and after the passing of this Act any person not being a Pharmaceutical Chemist or Chemist and Druggist within the meaning of the Pharmacy Acts who shall sell, dispense, or compound medicines, or who shall keep open shop for selling, dispensing, or compounding medicines shall for every such offence be liable to a penalty of Five Pounds, and the same may be sued for, recovered, and dealt with in the manner provided by the Pharmacy Act, 1852, for the recovery of penalties ; and in the interpretation of this section, the seller, dispenser, or compounder of any medicine shall be the person on whose behalf the sale, dispensing or compounding is transacted or performed.

4. **Exemptions in Favour of Medical Practitioners and Others.**—Nothing contained in the first fifteen sections of the Pharmacy Act, 1868, or in this Act shall extend to or interfere with any person registered as a duly qualified medical practitioner nor with the business of wholesale dealers in supplying poisons to retailers in the ordinary course of wholesale dealing ; nor shall any of the said clauses or the said Act prevent any person who is a member of the Royal College of Veterinary Surgeons of Great Britain, or who holds a certificate in Veterinary Surgery from the Highland and Agricultural Society of Scotland from dispensing medicines for animals under his care. Registration under the Pharmacy Acts shall not entitle any person so registered to practise medicine or surgery or any branch of medicine or surgery.

5. **Providing for the Winding up of the Estate of a Deceased Pharmaceutical Chemist or Chemist and Druggist.**—Upon the decease of any Pharmaceutical Chemist or Chemist and Druggist within the meaning of the Pharmacy Acts actually in business at the time of his death, it shall be lawful for any executor, administrator, or trustee of his estate to continue such business for a term not exceeding twelve months from the date of the decease of such Pharmaceutical Chemist or Chemist and Druggist, provided always such business is *bonâ fide* conducted by a Pharmaceutical Chemist or a Chemist and Druggist within the meaning of the Pharmacy Acts.

6. **Interpretation.**—In this Act :—Words importing the singular number shall include the plural number, words importing the plural number shall include the singular number, and words importing the masculine shall include the feminine.

The expression "The Pharmacy Acts" shall mean and intend all and each of the following Statutes, to wit, the Statute 15 and 16 Vict., cap. 56, intituled "An Act for regulating the qualifications of pharmaceutical chemists ;" the Statute 31 and 32 Vict., cap. 121, intituled "An Act to regulate the sale of poisons and alter and amend the Pharmacy Act, 1852 ;" the Statute 32 and 33 Vict., cap. 117, intituled "An Act to amend the Pharmacy Act, 1868 ;" and the Statute 61 and 62 Vict., cap. 25, intituled "An Act to amend the Pharmacy Acts, 1852 and 1868."

7. **Repeal.**—Section 16 of the Pharmacy Act, 1868, and Section 1 of the Pharmacy Act, 1869, are hereby repealed.

8. **Extent of Act.**—This Act shall not extend to Ireland.

9. **Short Title.**—This Act may be cited as the Pharmacy Act, 1899.

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LONDON: SATURDAY, FEBRUARY 4, 1899.

THE COUNCIL MEETING.

At the opening of the business proceedings, the President mentioned that he had just received information of the death of Mr. Kinninmont, of Glasgow, one of the oldest members of the Society in Scotland, who had occupied a distinguished position as a pharmacist, as well as in the estimation of his colleagues. Mr. Atkins added some further remarks in appreciation of the varied acquirements and ability of Mr. Kinninmont as the result of personal acquaintance and of the opportunity he had of learning how much he was respected.

The Secretary then announced, in accordance with the second clause, section five, of the present Bye-laws, the names of the members of Council who will retire from office in May, according to the provision of the amended Pharmacy Act, 1898.

The additions to the ranks of the Society were again considerable, two hundred and eight members being elected with fifty-five student-associates, and in addition several persons were restored to their former status in the Society.

Professors Farmer and Millar Thomson, with Mr. Robert Wright, of Buxton, were appointed to conduct the examinations for the Pereira Medal and Council Prizes, which will take place next April instead of July as on previous occasions, in order to suit more conveniently the termination of the courses in April.

On the motion of the President, Mr. A. E. Lawson was appointed divisional secretary for the Central division of the Parliamentary Borough of Finsbury.

The report of the Finance Committee did not present any unusual feature and its recommendations were adopted without comment.

On the recommendation of the Benevolent Fund Committee five grants, amounting in all to fifty-two pounds, were ordered to be paid. The Library, etc., Committee, report, after giving the customary statement of attendances in the Library and Museum and of donations, recommended, in accordance with the advice of the Society's surveyor, that the properties owned by the Society should be periodically surveyed, and that was approved by the Council. Another recommendation, to which the President called especial attention, was an alteration of the regulations relating to the Jacob Bell scholarships which has been for a long time under consideration, and was originally suggested by Mr. Allen with the object of defining more suitably the nature of the elementary knowledge of chemistry, pharmacy, and botany to be required from candidates competing for those scholarships. The President pointed out that their object is to encourage youths who, in addition to having a good scholastic education, make use of the opportunities afforded them, while apprentices, to acquire some knowledge of the subjects specified which would enable them subsequently to take advantage of the courses of instruction provided in the Society's School and acquit themselves with credit in the qualifying examination. Students who have had exceptional advantages or have been specially prepared for examination might take off the scholarships from those for whom they were especially intended, unless the elementary knowledge of technical subjects was more clearly defined. Hence the recommendation to make the British Pharmacopœia the measure of the elementary knowledge required of a candidate for the scholarship was adopted as the most suitable to the circumstances of the case. By that means youths who apply themselves to study during their apprenticeship and make the best use of such opportunities as they have at command would have a better chance of coming to the Society's School in the manner that was intended by the founder of the scholarships. For the further carrying out of the object in view the Committee recommended that in future there should be only one examiner in the technical subjects, as in that case a better judgment could be formed of the relative merits of candidates, and of their fitness for carrying forward their studies by the aid of a scholarship.

In seconding the motion to adopt these recommendations, Mr. Allen expressed satisfaction that the subject had now been taken up as one that is important not only in regard to apprentices but also in regard to masters, since it is equally necessary for masters to impress upon their pupils what will be required of them and for apprentices to apply themselves to study.

In reply to a remark by Mr. Bottle as to the effect of having only one examiner, the President explained that this alteration applied only to the technical subjects, and Mr. Bottle expressed himself quite satisfied. Mr. Rymer Young inquired whether the alteration would apply to the Manchester Scholarship, and on the suggestion of Mr. Carteighe provision was made for that course to be adopted as being consistent with the analogy of the two scholarships.

The report of the Law and Parliamentary Committee referred to a correspondence between the President and the Lord Chancellor, which resulted in ascertaining that the Lord Chancellor would be prepared to introduce a Bill for the amendment of the law. Accordingly a draft has been prepared to forward to the Lord Chancellor as a suggestion of the lines on which a Bill should be introduced during the coming session, and its adoption by the Council was recommended. The President, in moving the adoption of the report, said the draft would speak for itself, and as to the future he repeated what he had before said as to the necessity of having the support of the Government as well as the practical unanimity of all registered persons as to the provisions of any Bill that they could hope to see carried. He expressed his belief that in making the suggestions embodied in the draft,

the Council was acting as the mouthpiece of nearly all registered chemists and druggists throughout the country. He urged that it is really a proposal to revert to the principle underlying the Act of 1868—that for the safety of the public, it is expedient all persons keeping open shop for retailing, dispensing, and compounding should be duly examined as to their practical knowledge before commencing business. He held that the person keeping open shop should be understood as the person who owned the shop, and in so far as that important principle has been departed from in consequence of the decision of the House of Lords in the case of the London and Provincial Supply Association, the suggestion now made would provide a remedy for the present defective state of the law relating to the practice of pharmacy. The proposed restriction of the exception made in favour of a deceased chemist's business by allowing it to be carried on by a qualified manager for a limited period only was referred to by the President as a necessary amendment of the present Act which would allow reasonable time for a transfer of the business, and lastly he expressed a hope that the Lord Chancellor would see fit to introduce a Bill on the lines of the suggestions now put forward with the unanimous approval of the Council.

In seconding the motion, the Vice-President expressed his opinion that the suggested Draft Bill would effect what was wanted by registered chemists in regard to the compounding and dispensing, not merely of poisons, but of all medicines. Every medicine being more or less a poison the chemist's shop is practically a poison cupboard, and since very great responsibility attaches to the dealing with many articles which are not scheduled as poisons, a properly educated person should alone be entrusted to deal with them. He thought all chemists would be in favour of a Bill of the kind suggested, which would be the analogy of regulations obtaining in nearly every country of Europe, and that, if properly supported by the chemists of this country, the Council would be enabled to carry through all that is desired.

Dr. Symes called attention to the circumstance that the medical profession is now engaged with the promotion of a Bill of a similar nature, and suggested that help could be obtained from that quarter.

Mr. Atkins, in giving expression to his approval of the motion, referred to the probability of opposition, both in regard to the general principle and the alteration of the Widows' Clause, adding that in these respects it was essential for chemists to bear in mind the warning that they should put their house in order. For that reason he was prepared, though reluctantly, to support the alteration; also because the carrying out of the proposed legislation would be going back to the former position of affairs and would be an act of justice to persons of whom the State rightly demands that they should be examined and registered in order to carry on the business of chemists and druggists, relieving them from a competition which is essentially illegitimate. That there would be a severe struggle with vested interests was inevitable, but he would rather lose in that struggle than consent to any half measures.

The President, Vice-President, and London members of the Council were appointed a Committee to watch the progress of Parliamentary proceedings during the ensuing Session, and to act as occasion may require in the interests of chemists and druggists.

The Secretary reported the receipt of a letter from the Clerk of the Privy Council acknowledging receipt of the resolutions passed at the Special General Meeting as to poison regulations.

The President mentioned that several letters had been received from associates residing abroad who desired to become members of the Society, and conveying very gratifying expressions of loyalty to the Society.

Reference was also made to a letter from Mr. Glyn Jones on the subject of dispensing by unqualified persons, which was referred to the Law and Parliamentary Committee.

The report of the General Purposes Committee mentioned the receipt of a letter from Sir Wm. Turner, the President of the General Medical Council, stating that, in accordance with a suggestion of the Pharmacopœia Committee of that body, the Pharmaceutical Society was requested to co-operate in the inquiries and investigations that will be necessary in examining criticisms of the British Pharmacopœia, 1898, and accumulating information for the publication of the next Pharmacopœia. For that purpose the Society has been requested to appoint representatives for the proposed Conferences. A resolution was passed that the President should reply accepting the invitation, and that two representatives should be appointed to confer with the Pharmacopœia Committee, and the President remarked that the proposed arrangement seemed to be a step in the right direction, which he had suggested as being likely to lead to good results as regards the preparation of the Pharmacopœia and the status of pharmacists in connection with that work.

After considering the legal portion of the report, the Council passed a special resolution, adopting the recommendations, and authorising the Registrar to take proceedings against persons alleged to have infringed the provisions of the Pharmacy Acts.

ALEXANDER KINNINMONT.

Mr. Alexander Kinninmont, pharmaceutical chemist, late of 69, South Portland Street, Glasgow, died at his residence, Whitehall, Bothwell, on Saturday, January 28, aged 69. Mr. Kinninmont entered the service of the late John Neil, Glasgow, in 1844. From the first he made up his mind to be more than a mere seller of drugs. By private study and attending the classes of Dr. Penney in the Andersonian College, Glasgow, he was enabled to pass the Major Examination with honours in 1853, and received his certificate in 1858, when he succeeded to the business on the death of Mr. Neil. In 1865 he was appointed local Secretary for Glasgow, and held the office till he retired from business in 1894. In 1867 he became a member of the Executive of the North British Branch, and took a very active interest in all the work of the Branch till he retired. In 1873 he was appointed a member of the Board of Examiners for Scotland, and retired after thirty years' service in 1893. He was elected a Fellow of the Chemical Society in 1877. He was a member of the first Committee of the Glasgow Chemists' Association when it was founded in 1854, and became Vice-President in 1865, and President in 1866. All along he took a very active share in the work of its Association, and was deeply interested in the resuscitation of the Glasgow and West of Scotland Pharmaceutical Association, of which he was an Honorary Vice-President at the time of

his death. He took a very active share in the opposition offered to the making of compulsory poison regulations by the Pharmaceutical Society in 1870. He held very pronounced views as to the meaning of the Pharmacy Acts of 1868, and did not accept the intepretation put upon the Act in recent decisions in the Law Courts. Owing to failing health he retired from business in 1894, when he was entertained to a complimentary dinner by his fellow craftsmen in Glasgow and presented with an illuminated address and a purse of one hundred sovereigns. With characteristic generosity he handed the gift to trustees for investment, the proceeds to be applied to an annual prize for the encouragement of Major students resident in Glasgow and the West of Scotland. This prize is known as the Kinninmont Prize. Mr. Kinninmont was not only one of the most distinguished pharmacists in Scotland, he was also an accomplished linguist and a widely-read and exceedingly well-informed man of science. He was one of the best known and most popular members of the pharmaceutical craft in Scotland, and in Glasgow and the West he was almost worshipped. Though he could defend his position with great energy and fearlessness, he was one of the gentlest and most tender-hearted of men. For several years he has been in such feeble health that old friends were only on rare occasions allowed to see him. His death removes one of the brightest names in the older generation of Scottish pharmacists, and his death will be mourned by a wide circle of attached friends who held him in high respect and veneration.

THE NEXT COUNCIL ELECTION.

It will be noticed by readers that a list is given in the report of the meeting of the Council of the Pharmaceutical Society on Wednesday last, of those members of the Council who retire in May next. On former occasions two-thirds of the members of Council have gone out of office every year, in accordance with the provisions of the Charter, seven of those consisting of members who remained in the Council after the lot was taken in the last preceding year, or their successors, and the other seven being taken by lot from the remaining fourteen members. Now, however, only seven members of the Council go out of office in every year, those who retire being the members who have been longest in office without re-election. The seven who retire this year are Messrs. Bottle, Carteighe, Harrison, Harrington (as successor to Mr. Hampson), Park, Southall, and Young. They are all eligible for re-election if duly nominated for that purpose. Notices of nomination may be sent in to the Secretary of the Society by any member qualified to vote, and must be in his hands on March 18 at latest. Each notice must be duly signed by the nominator, and also give the name and address of the nominee, who must of necessity be a member of the Society. On or before March 20, the Secretary is required to send to each nominee a notice of his nomination, accompanied by an inquiry whether he will accept office if elected, and in default of a written reply from the nominee being received on or before March 31, such nominee shall not be deemed eligible or willing to be elected. Voting papers will be sent to every member qualified to vote, not less than ten days prior to the annual meeting, and those papers should either be personally delivered to the Secretary or transmitted to him, by post or otherwise, not later than twelve o'clock noon on the day of election.

ANNOTATIONS.

The Suggestions for a Draft Pharmacy Bill, adopted by the Council of the Pharmaceutical Society on Wednesday (see p. 106) should be found thorough enough in their scope to please every chemist and druggist on the Register, and it is not too much to expect that, both severally and jointly, each one would do his utmost to secure the passing of such a Bill into law. The first object of the suggested measure is the extension of the provisions of the Pharmacy Acts so as to cover not only natural persons, but also partnerships, bodies corporate, and other associations of persons. In this respect the Bill would only remedy an acknowledged defect in the Pharmacy Act of 1868, and in the event of the clause being agreed to by the Legislature, nothing but simple justice would be done to registered chemists, who can only attain the right to fulfil certain functions which are generally understood to be peculiar to their craft, by years of training and study, a considerable expenditure of time and money, and by finally undergoing the ordeal of an extremely severe examination. But, for years chemists have laboured under the disadvantage inseparable from the fact that their conditionally acquired position and titles, supposed to be secured to them by Statute, have been usurped by unqualified persons who have chosen to associate themselves together for trade purposes. Owing to the fact that, in a particular instance, the word "person" in the Pharmacy Act, 1868, was judicially held—though with distinctly expressed hesitation and doubt—not to cover the case of certain associations of persons, so long as those associations employ duly qualified persons to serve as go-betweens in their relations with the public, the registered chemist finds unregistered persons able to do all that he can do. After incurring much trouble and expense, therefore, the chemist registered in strict accordance with the requirements of the Statute finds himself unfairly handicapped by the opposition of unregistered persons who have been enabled to take advantage of a defect in the law. Joint-stock companies and other corporations are not in any way recognised by the law in relation to the sale of poisons and the practice of pharmacy, and from the point of view of the Pharmacy Acts they do not exist. Clause 1 of the suggested new Bill would remove that anomaly by placing associations of persons on exactly the same footing, from a legal point of view, as individual persons. By the wording of the clause it would apply to all associations of persons carrying on business as chemists and druggists at the present time as well as any others that may come into existence in the future.

The Practice of Pharmacy is the subject of other suggested clauses in the draft Bill, the proposition being that it shall be unlawful for any person or association of persons, except registered chemists and medical practitioners, to sell, dispense, or compound medicines, or to keep open shop for the selling, dispensing, or compounding of medicines. The exemption of wholesale dealers and veterinary surgeons would also be secured as under existing Acts. The effect of legalising such a proposition would be tremendous, and opposition to it, if embodied in a Bill, may be expected to be even greater than to Clause 1. At the same time, chemists are amply justified in pressing for such restriction of the sale, dispensing, and compounding of medicines, for the public safety is at stake, and the risk of misadventure increases daily so long as medicines may be dispensed and sold by anyone. At present, only the sale of certain poisons is restricted, and the dispensing of those poisons is hardly restricted at all. But in the interest of medical practitioners who desire to have administered to their patients what they actually prescribe, and still more in the interest of the public, which is entitled to the best possible service in the preparation of medi-

cine, it is obviously desirable that much greater restrictions should be imposed than are now existent. As a proof, if proof were needed, that care for the public safety is the idea more prominently before registered chemists, Clause 5 of the suggested draft Bill provides that the term for which it shall be lawful for any executor, administrator or trustee of the estate of a deceased registered chemist to continue the business of that chemist, shall not exceed twelve months from the date of the proprietor's death. The limitation proposed is a reasonable one and accords with the custom in other countries. The present so-called "Widows' Clause" is undoubtedly a weak spot in the Pharmacy Act of 1868, and anything that is done to make it more in accordance with the fitness of things will be well calculated to help in the putting of the affairs of pharmacy in proper order. The extension of the privileges of membership of the Pharmaceutical Society was an important preliminary step in that direction, the adoption of poison regulations was another, and the proposed amendment of Section 16 of the 1868 Act will, it is to be hoped, constitute a third equally advantageous and progressive step.

Further Amendment of the Pharmacy Act, 1868, ought to be assured now that the question has been taken up by *Pearson's Weekly*, a well-known paper of the class which serves up fiction as truth and offers prizes for all kinds of curious tasks. One of the latest offers of this widely-circulated publication is a solid silver pencil-case to the person who sends the best reasons why the Pharmacy Act of 1868 should be repealed. This is in response to the complaint of a correspondent who appears to have conveyed the impression that he thought the editor of *P. W.* was prejudiced against chemists and druggists. That impression, however, is stated to be quite erroneous, chemists being regarded in Henrietta Street as "a particularly hard-working body whose remuneration is not commensurate with the amount of their responsibility," and the silver pencil-case is offered as a proof that no prejudice exists. An attempt is also made to explain why the so-called "Widows' Clause" has exerted an evil influence on the fortunes of registered chemists, but it is hardly correct to describe it as "the one weak spot in British pharmaceutical legislation," or to assert that "under the protection of this very clause, any firm, not absolutely and necessarily a firm of chemists, can open and conduct a chemists' department, provided that the same is under the charge of a qualified man." Section 16 of the 1868 Act is undoubtedly a weak spot, but not the only one in the Act, nor can the whole blame for the existing state of affairs with regard to company pharmacy be fairly charged against it.

The Jacob Bell Scholarship Regulations have been altered in such a way as to improve them considerably and bring them more into line with what was originally intended. The winner of a scholarship is supposed to be just commencing his studies, or at least to have made only that progress which may reasonably be looked for during an apprenticeship, and the object of the examination has always been to ascertain that the candidate has such an amount of ability, and is able to afford evidence of having made such use of it in the acquirement of elementary knowledge, as will justify the expectation of his proving a successful student, who may do credit to the appointment and become a useful and accomplished member of the pharmaceutical body. The subjects of the examination have been :—(*a*) Latin :—Virgil ; the first three books of the Æneid ; Latin prescriptions ; translations of Latin into English, and English into Latin ; translations from any Latin pharmacopœia, and parsing. (*b*) French or German. (*c*) English :—Composition and parsing. (*d*) Arithmetic :—The first four simple and compound rules, fractions, and decimals ; the British and metrical systems of weights and measures. (*e*) Elementary chemistry, pharmacy, and botany. Unfortunately, during recent years, the idea has become prevalent that the examination is a test of much greater severity than it really is, and that much greater progress must have been made by candidates than is presupposed in the syllabus. As a result students have engaged tutors and put themselves to considerable expense in preparing for the examination. Inasmuch, however, as such a result is far from the intentions of the Council of the Pharmaceutical Society, it has been decided that henceforth the knowledge of botany, chemistry, and pharmacy required by candidates for the scholarships shall be based upon an elementary knowledge of the principal chemicals, drugs, and processes of the British Pharmacopœia, such as a student may be reasonably expected to have acquired during his apprenticeship. In future also only one Examiner will be appointed to conduct that portion of the examination comprising the three technical subjects, with a view to keeping the standard of the examination within the limits of the knowledge that may reasonably be acquired by competitors during their term of pupilage, and the marks for the three technical subjects will not be given separately for each subject as at present, but the three subjects will be regarded as one paper.

The Dispensing of Medicines at Arbroath Infirmary has again come before the directors of that institution, the question having been raised once more by the receipt of a letter from Mr. James Jack, in which it was pointed out that at a meeting of local chemists it had been resolved that the attention of the Board of Directors of the Infirmary should be directed to the fact that no person other than those whose names appear on the Register of the Pharmaceutical Society are legally entitled to act as dispensers of medicines ; that the name of Miss Minton, the recently appointed dispenser at the Infirmary, does not appear on that Register ; that, therefore, she has no legal status, and that the responsibility in case of error still rests upon the Directors. In the discussion which followed the reading of the letter it was made clear that the Directors had been misled with regard to the value of the dispenser's certificate issued by the Apothecaries' Society. The Town Clerk of Arbroath, who seems to have been influenced by some animus against the Pharmaceutical Society, did his best to convey the idea that the Apothecaries' certificate confers a legal status, and in the end he managed to persuade the Directors that the appointment they had made was the best of all possible appointments. It appears that the dispenser at Arbroath Infirmary is required to dispense all kinds of medicine for out-patients as well as in-patients, and the danger to the public of having an inefficient person in charge of the dispensing arrangements is therefore patent. An individual possessing only the dispenser's certificate of the Apothecaries' Society is certainly not the most suitable occupant of such an important post, and motives of economy ought not to have been allowed to enter into consideration in making the appointment. An apothecary's assistant may appear cheap, but apparent is not always absolute cheapness, and the sooner that fact is realised in appointing dispensers for public institutions the better for everyone concerned.

The Task of Disinfection at Kowloon, in connection with the outbreak of bubonic plague, appears to have been an arduous one, judging from Mr. Frank Browne's report in the *Hong Kong Government Gazette*, and in view of the suggested possibility that the plague may gradually spread to Europe, it appears desirable to record what means were adopted by the Hong Kong authorities

to disinfect houses. Chlorine was the disinfecting agent used. The process employed for disinfecting a large number of houses simultaneously, without removing the inmates, was to place on the floor of each room two ounces of a mixture of equal parts of manganese dioxide and common salt, on which mixture was poured six ounces of diluted sulphuric acid (1 in 4). The chlorine was given off slowly but continuously for about twelve hours, without greatly interfering with the comfort of the inmates, and throughout Kowloon the Chinese gladly submitted to this method of disinfection. In houses where cases of plague had actually occurred, half a pound of chlorinated lime was placed in a pot, well mixed with a quart of water, and a quart of diluted sulphuric acid (1 in 5) added. All doors, windows, and other apertures were then securely closed as completely as possible. The materials used for disinfecting purposes in British Kowloon were three hundredweights each of manganese dioxide and common salt, eight hundred pounds of sulphuric acid, and three thousand pounds of chlorinated lime. Although a large number of infected houses were entered for cleansing purposes, there was not a single case of plague amongst the workers, but Europeans generally are reported to have suffered more severely from plague than usual, so far as the number of cases is concerned.

The Qualifications of the Public Analyst should, in the opinion of the *Lancet*, be more clearly defined. At present it is vaguely required of him, according to the tenth clause of the Sale of Food and Drugs Act, that he shall be a person possessing "competent knowledge, skill, and experience" as an analyst of all articles of food and drugs, but so far there is no diploma or degree officially recognised by which the competency of the candidate can be adjudged, and those whose business it is to appoint public analysts have no standard to serve them as a guide in the matter. We quite agree that the examinations of the Institute of Chemistry afford the best test of competency as an analyst, following, as they do, on a carefully arranged systematic course of practical instruction, and we are not disposed to cavil at the statement that the science degrees of our universities can obviously count for little, since a man may undoubtedly possess a science degree without the slightest conception of the composition and practical analysis of food and drugs. It certainly is anomalous that, in one of the most important branches of home administration, there should be an office requiring skilled work, which may be filled by a person possessing neither diploma nor degree, and no objection could reasonably be taken if the law were to require every public analyst to be a Fellow of the Institute of Chemistry.

The British Analytical Control is an organisation of a curious kind, apparently called into existence by an obscure process of spontaneous generation, to supersede legislative enactments and do away with the need for official public analysts. Its object, as declared in an all too brief circular letter, presents itself as a truly laudable one, being nothing less than "to check the sale and importation of adulterated and inferior articles and to encourage and protect legitimate trade." That object is to be attained by manufacturers submitting sealed samples of their articles for scientific examination by the B. A. C., and if on analysis they prove to be "pure, genuine and good, in the strictest sense of those terms," and subsequent examination of samples purchased in the open market confirms that analysis, the articles "will be accepted and placed under the British Analytical Control." Official stamps will then be issued by the Control "to be affixed to the packages or vessels in which the controlled articles are sold," and purchasers need no longer worry their minds about adulteration. Whether all this work is to be done for pure philanthropy, or for the mere love of analysis and to relieve the promoters of the scheme of a lingering sense of anxiety with regard to the safety of the public, does not at present appear, for no mention is made in the circular letter or in the regulations published in the *British Food Journal* of any payments to be made by manufacturers whose articles are "accepted," while at the same time private purchasers or consumers are to be enabled to satisfy themselves "without expense as to the characters and quality of any samples of such articles offered for sale." Payments by manufacturers, indeed, might not unreasonably be regarded as a kind of blackmail, but here, apparently, we have a body of large-hearted public analysts, some of whom are members of no less a body than the International Commission on Adulteration, offering their services free of cost, with Control stamps thrown in. It is not quite clear whether the analysts constituting the Control will, personally or by deputy, affix the official stamps, or whether that part of the business will be left to the manufacturers. To make assurance doubly sure, the former course suggests itself as the more desirable one, as this "scheme for solving a public problem of such magnitude and importance" would appear then to be more than ever entitled to receive "the general approval and support of cautious and responsible persons."

Long Hours and Overwork in druggists' shops are referred to in a sympathetic note in the *Lancet*, though it is the druggists of New York who are the objects of sympathy in our medical contemporary, and not their fellow-craftsmen in Great Britain, whose case is every whit as unsatisfactory in sadly too many instances. Not that "numerous errors" have occurred here in the compounding of drugs as in New York, where, it is alleged, such blunders have occurred as the result of exhaustion consequenton prolonged hours of labour. But twelve to fourteen hours' work daily is far from uncommon in the experience of chemists' assistants on this side of the water, and a Bill on similar lines to the one introduced in the Albany Legislature would be gladly welcomed here. The Bill provides that no one engaged in the making up of medical prescriptions shall be allowed to work more than ten hours on week days, except Saturdays, when the time may be extended to twelve hours; on Sundays and public holidays not more than six hours' work is to be permitted. If the ten hours per day include a reasonable time for meals, the time suggested may be regarded as a fair working day, but objection must be taken to any extension of hours on Saturdays, and a half holiday each week ought to be stipulated for. There need then be but little risk of ill effects from overwork which, as the *Lancet* pertinently remarks, may not only cause injury to the person who suffers from the strain, but is sometimes also dangerous to the public, for on the alertness of dispensers of medicines the safety of the public depends. "The slightest carelessness or inattention may result in fatal consequences, and it certainly is to the interest of the public to see that the dispensers of medicaments enjoy sufficient leisure and rest."

Inaccuracy and Prejudice are not usually manifested in the columns of the *British Journal of Photography*, but for some mysterious reason the Pharmaceutical Society and the business of chemists and druggists cannot be mentioned in those columns without both evil qualities manifesting themselves immediately. Inaccuracies noted in last week's issue include the statements that pharmaceutical chemists only are permitted to vend scheduled poisons, that they sell such poisons without due care, that the fact of such careless sale is often

evidenced in Coroners' Courts, that the Pharmaceutical Society alone has the power to enforce the law regulating the sale of poisons, and that the same body does not deal impartially with offenders under the Pharmacy Acts, whether registered chemists or not. Some of the inaccuracies are doubtless due to a more or less justifiable ignorance, but there is only too good reason to believe that those reflecting upon the Pharmaceutical Society are nothing less than deliberate misstatements, such as a publication occupying a position like that of the *British Journal of Photography* ought to be above setting in circulation. Minor inaccuracies to which the same paper gives currency are that the Poisonous Substances Bill only passed through Committee in the House of Lords and then suffered at the end of the session in the "slaughter of the innocents"; that the Bill, had it passed, would have "taken the exclusive monopoly in the sale of poisons used for industrial purposes out of the hands of the pharmaceutical body"; that the Privy Council would then have had the same rights as are at present vested in the Pharmaceutical Society; and that the police of Great Britain are not now able to proceed against anyone who fails to observe the legal requirements in regard to the sale of scheduled poisons. In fact, a more marvellous tissue of errors and misrepresentations would be rare to see, and it is more in sorrow than in anger that we advise the editors of the leading photographic organ to take greater care for the future to ensure that their contributors are at least conversant with the topics upon which they write. Any tendency to inaccuracy, partiality and deliberate lying should be sternly repressed in the columns of a paper that is usually distinguished by characteristics of quite opposite nature.

A Plea for All-Night Pharmacies is put forward by the *Medical Press*, apparently without a clear conception of what the present position is in that respect. As a matter of fact, it is no more difficult to get medicine dispensed by reputable chemists during the night than during the hours of daylight, allowing for the obviously different conditions. If, however, a lock-up shop, or the premises of a joint-stock company be visited at 3 a.m., it is scarcely reasonable to attribute the failure to procure what is required to the negligence, or lack of public spirit, of registered chemists generally. We have heard of medical men being vainly sought for in cases of emergency during the small hours of the morning, but that fact would not justify anyone in suggesting that the medical men implicated were neglecting their duty, let alone the medical profession generally. The fact of the matter is that the *Medical Press*, in respect of this purely imaginary difficulty, is influenced by a carping spirit, and representing a small number of unimportant people who have the fault formerly attributed to the Dutch—giving too little and asking too much. The chemist is to do everything in his power to oblige medical men and the public, but he must look for neither consideration nor profit in return. Medical men dispense medicines for their patients when it suits their own convenience, and unqualified joint-stock companies are prepared to dispense during the daytime, but the poor chemist—after waiting all day prepared to dispense prescriptions which never come—is expected to fill the gap during the night when his business opponents are reposing, after doing all they can to take the bread out of his mouth during the day. Candidly, we believe as little of the tale of the correspondent of the *Medical Press*, "who, armed with a prescription at 3 a.m., applied in vain at sixteen pharmacies," as of that related by the *Daily Telegraph* last week. It is singular, by the way, what a striking resemblance there is between the two mares' nests.

ANALYTICAL NOTES.

Determination of Nicotine in Tobacco.—C. C. Keller states that the proportion of nicotine in tobacco is not at all indicative of its strength. The very strongest Havannah cigars were found to contain only about 1·97 per cent. of the alkaloid, as against 2·33 per cent. of various other brands. Of Turkish cigarettes the mildest gave 3·498 per cent., the strongest, 2·333 per cent. of nicotine. In nine varieties of smoking tobaccos the nicotine averaged 2·7 per cent. The following is the method of determination employed by the author:—6 grammes of dry tobacco is put into a flask of 200 C.c. capacity, 60 grammes of ether and 60 grammes of petroleum ether are added, also 10 C.c. of 20 per cent. potash solution, and the mixture is well shaken. The shaking is repeated at intervals of half-an-hour, and the mixture then allowed to stand for 3 to 4 hours. 100 grammes of the ethereal solution are drawn off into a 200 C.c. flask, shaking being carefully avoided. To remove ammonia a strong current of air is introduced which removes all NH_3 in a few minutes, and the solution is then evaporated to 10 grammes; 10 C.c. of alcohol, one drop of a 1 per cent. iodeosine solution, and 10 C.c. of water are now added for titration, the bottle is well corked and shaken with energy. Nicotine and iodeosine are washed into the water which separates with a red colour; a known volume of decinormal HCl solution is now added, and the mixture again shaken. If the red coloration remains, 1 C.c. of the acid is added at a time until the tint changes. After each addition of acid the mixture must be shaken energetically. If, for instance, the colour remains unaltered after adding 8 C.c. of acid, and on the addition of another 1 C.c. it vanishes, the limit would be between 8 and 9 C.c.; 0·5 C.c. decinormal ammonia is then added and shaken up. If the aqueous solution remains colourless, 1/10th C.c. of ammonia solution is added at a time until a slight rose coloration occurs, which marks the end of the operation.—*Pharm. Ztg.*, **43**, 407.

Toxicological Distinction of Conine and Nicotine.—In view of the difficulty of distinguishing between small quantities of conine and nicotine, Melzer directs attention to the following distinctive reactions. Conine, when treated with carbon disulphide, is acted upon with explosive violence, a deep yellow, thick fluid resulting, which, when treated with ether, gives a crystalline residue of yellowish-white needles upon evaporating the solvent. Nicotine affords no such reaction. When an alcoholic solution of conine is added to a few drops of carbon disulphide and allowed to stand for a few minutes, a yellow coloration is produced. If a few drops of cupric sulphate solution (1:200) be now added, a yellowish-brown precipitate is formed on concentration. By using ferric chloride solution (liquor ferri sesquichlor., Ph. G., 1; water, 10 C.c.) instead of cupric sulphate, under the same conditions, conine gives a very marked and characteristic brown colour. Nicotine combines with epichlorhydrin at 120° to 130° C., with the evolution of great heat and, in concentrated solutions, with explosive violence. One drop of very dilute solution of nicotine heated to boiling in 2 or 3 C.c. of epichlorhydrin gives a deep red colour. Conine gives no such colour. Some alkaloidal bodies allied to nicotine give a transient red colour under these conditions, but not a permanent tint.—*Pharm. Zeit.*, **43**, 489.

Detection of Boric Acid in Meat.—H. Haefeline recommends the following process for detecting boric acid in meat:—10 Gm. of chopped lean meat is macerated for about one minute in a wide test tube, with a mixture of 2 C.c. of glycerin, 4 C.c. of alcohol, 4 C.c. of water, and a few drops of hydrochloric acid. The test is made with turmeric paper. If boric acid be present the turmeric gives the characteristic cherry red to brown colour on being dried rapidly over a Bunsen burner. This colour remains after washing with water and turns to blue-black on being touched with ammonia or potash solution.—*Pharm. Centr.*, **39**, 135.

Ammonium Dithiocarbonate as a Substitute for Sulphuretted Hydrogen and Ammonium Sulphydrate.—Vogtheer recommends the employment of ammonium dithiocarbonate as a reagent in place of H_2S or AmHS. The reagent is obtained thus: Carbon disulphide, 5, are shaken in a stoppered flask with solution of ammonium (20 per cent.), 9, until the disulphide is entirely dissolved. The solution is then neutralised with acetic or hydrochloric acid, and diluted with three or four times its weight of water.—*Bullet. de la Soc. Roy. de Pharm. de Brux.*, **42**, 209 after *Berichte*.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

The quarterly meeting of this Association was held on Wednesday, January 25. The President, Mr. C. J. Park, took the chair, and those present included Messrs. J. Cocks, G. Breeze, F. W. Hunt, Condy U'Ren, J. Barge, C. T. Weary, O. A. Reade, J. B. Swainson, etc.

Mr. J. Cocks proposed that the following be adopted as a resolution:—

> In view of the lamentable accident which occurred at Heaton Norris it is advisable that Local Associations should convene special meetings to discuss the subject of dispensing in surgeries, etc., by unqualified persons, and that resolutions be passed urging the Council of the Pharmaceutical Society to bring the matter before the notice of the Privy Council.

Mr. C. J. Park said he considered that such an important motion ought to have appeared on the agenda paper of the meeting. Unfortunately it had been received too late, therefore he moved that the matter be brought up at the next meeting. After a short discussion, this proposition was agreed to.

The Trade Defence Union.

After a discussion of the proposed Trade Defence Union in connection with the P.A.T.A., it was decided to continue the local trade defence scheme which was formed some time ago in connection with the Association, and to refer the same to the Trade Section Committee to revise on new lines, instead of adopting the suggested P.A.T.A. scheme, but it was left to individual members to join the latter if they felt so disposed. The matter of forming a local plate-glass insurance scheme was also referred to the Trade Section.

The President regretted that he had to announce the departure of Mr. J. R. Johnson, Ph.C., R.N., who is leaving shortly for Jamaica. Mr. Johnson is at the present time conducting a materia medica class for the Association, and he has always interested himself to help forward the studies of the junior members of the Association. It was resolved to open a subscription list for a testimonial on his behalf.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting of this Association held on Wednesday, January 25, Mr. G. H. C. Rowland in the chair, a paper was read by Mr. W. Makepeace Lock, on

The Profession of Pharmacy.

After summarising his former papers on the same subject, the author pointed out that the question of professionalism in pharmacy has lately occupied the columns of the journals to a fairly considerable extent; and that in this field the disparagement of the combatants has taken up a fair amount of space. Such a habit threatens, if unchecked, to grow rapidly, and its prevalence would inflict serious injury on the business. Sometimes, if a man's arguments cannot be refuted or disproved, the question is settled to the satisfaction of the grumbler by his proclaiming the critic to be no gentleman. They have certain criteria of what constitutes a gentleman, such as the following:—Does the candidate for the title wear a gold chain or diamond ring? Does he give good dinners to good fellows? Does he subscribe to the Pharmaceutical Society? We may well weep that such an example should be offered by the "leaders" in pharmacy. This question of professionalism in pharmacy is being frequently discussed, both privately and in the trade journals. Various and contradictory are the opinions which have been elicited, but the author thought all misconception would be removed and perfect unanimity arrived at by rational persons, if words were interpreted in the natural sense. The word "profession" ought not to be twisted out of its obvious etymological meaning. The word occupies a place in the mouths and actions of certain pharmacists to which it is by no means entitled; and that those men should so comport themselves with reference to their brother chemists, assistants, or otherwise, is no criterion of their outstanding ability.

The reading of the paper was followed by an interesting discussion, and on the motion of the Chairman a cordial vote of thanks was awarded to Mr. Lock.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

On Saturday evening last, at the Albert Memorial Museum, Exeter, the Countess of Iddesleigh presented the prizes and certificates won by successful students of the Exeter Technical and University Extension College, including those given by members of the Exeter Association of Chemists and Druggists (see last week's Journal). The Principal of the College (Mr. A. W. Clayden) in an excellent report on the year's work said "Mr. H. Gadd's prizes to the senior chemistry students were divided between E. Kingsley and E. S. Berg; Mr. P. F. Rowsell's prizes to the junior students were awarded to Arthur W. Nation and W. E. Samways; Mr. Stocker's prize for the best herbarium of British plants collected within ten miles of Exeter was received by E. F. Dewdney; Mr. J. H. Lake's prize for pharmacy and materia medica has not been awarded."

BRISTOL PHARMACEUTICAL ASSOCIATION.

The annual meeting of this Association was held at University College on Wednesday, January 25.—The Treasurer's report was presented and showed a small debit balance, owing to some unusual expenses. The Hon. Secretary (Mr. B. Keen) also read the following

Report of Council.

The Council has again to report a year of considerable activity in pharmaceutical matters. Early in the year the Hon. Secretary addressed a circular to all members of the Association, requesting them to communicate with their representative in Parliament, asking his support to the Pharmacy Acts Amendment Bill then to be introduced, the Council believing that considerable impression was made upon the various members of Parliament by this simultaneous action. A similar course was adopted later in the year, when the Poisonous Substances Bill was brought in by the Government. In the opinion of the Council the passing of the one measure and the abandonment of the other was largely due to representations made to members of Parliament by chemists throughout the country. The annual dinner of the Association was held in March, and was honoured by the presence of the President of the Pharmaceutical Society. A further illustration, if such were needed, of the utility of such Associations as this was afforded during the year. Upon the publication of the new Pharmacopœia the Hon. Secretary put himself in communication with some members of the medical profession, and through them the local Medical Association suggested that this Association should notify to all prescribers the date at which it was proposed to use the new Pharmacopœia in dispensing. A circular was therefore sent to all prescribers, accompanied by a copy of the *Pharmaceutical Journal* reprint of the "B.P. Formulæ and Processes," at the cost of this Association. Perhaps the most important meeting of the year was held in December, when all retail chemists were invited to a conference to consider the position and prospects of the retail trade. With few exceptions every business was represented either by personal attendance, expression of sympathy, or by letter. A series of resolutions was unanimously passed, and they were reported in the *Pharmaceutical Journal* of December 24.

Both reports were unanimously adopted and the following officers were then elected:—President, Mr. G. T. Turner; Treasurer, Mr. J. Stroud; Hon. Secretary, Mr. B. Keen; Council, Messrs. B. Allen, H. E. Boorne, T. Buxton, W. Berry, J. Chandler, W. Pitchford, J. Plumley, J. W. White, E. Young.—The annual dinner was provisionally fixed for March 16.

PUBLIC DISPENSERS' ASSOCIATION.

The first annual general meeting of this Association was held at 46, Clarendon Square on January 26, Mr. Welford in the chair. The Secretary read the following report:—

Your Committee, in submitting this, its first, annual report, desires to point with pride to the amount of work accomplished by the Association in the past twelve months, taking into consideration the difficulties to be surmounted in inaugurating a Society of this description. In all new societies a certain time must elapse before the exact work that will be proved most popular and useful to their members is found. The Committee feels that, although the

number of the meetings during the past year has been small, for quality it would have been nearly impossible to surpass them. Dr. Macnaughton Jones's inaugural address for scholarship and eloquence was of the highest class. Our example in asking the British Institute of Preventive Medicine, or Jenner Institute, as it is now titled, to give us a lecture on Antitoxins has been followed by no less an authority than the Royal Institution. Ill-health and pressure of work prevented Mr. W. Martindale from addressing us this last October. The last paper read—on Urine Analysis, by our worthy Treasurer—is of such a useful and scientific nature that with further notes it will shortly appear in book form. Before the end of the winter your Committee hope to provide two or three more papers, all of the highest class, the next being on Micro-photography, by Mr. F. N. Clark, of Paddington Infirmary, in February. We hope to hear Dr. Dean again before the close of the session, and one or two other papers. Thanks to the support we have received from outside friends the funds of the Society are in a sound and flourishing condition.

The Treasurer, Mr. Donnan, then read his report, which showed a substantial balance in hand.

It was proposed by Mr. J. J. Smith and seconded by Mr. Pidgeon that these reports be adopted.—This was carried unanimously.

It was proposed by Mr. Miller and seconded by Mr. Forster that Mr. Welford be re elected Chairman for the ensuing year. This was carried without dissent.

Mr. Miller was proposed as Vice-Chairman by Mr. Duff, seconded by Mr. Welford, and elected; Mr. Forster was re-elected Secretary; Mr. Donnan was re-elected Treasurer; Messrs. Armitage, Duff, Clark, Goodall, J. L. Moore, and J. J. Smith were elected as Committee for the ensuing year.

The meeting terminated with votes of thanks to the Committee and officers for their services during the past year, and to Mr. Miller for obtaining the use of the room.

BOURNEMOUTH PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held on Thursday, January 26, Mr. J. Toone, President, in the chair. There was a conversation on the details of the recently adopted regulations for the storage of poisons, and the best way to meet their requirements. The York Glass Company had sent samples of their ribbed shop bottles, Mr. Silverlock various labels, and Mr. Townsend, of Exeter, a suggestion to place strips of thin card round bottles, so as to be a distinguishing mark and also to make them distinctive to touch.

Mr. W. Jones brought forward the question of the application of the storage regulations to hospitals and dispensaries, and eventually drafted as a resolution, which was passed—

> That this meeting agrees that the passing of the Regulations for the Storage of Poisons was a wise step, and is of opinion that they should be made to apply to hospitals and dispensaries, public and private.

During the discussion of the recent alterations in the constitution of the Pharmaceutical Society, the opinion was expressed that efforts should be made to induce all qualified men to join the Society.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

A meeting of the above Association was held on Friday evening, January 27, when a very interesting and instructive paper was read by Mr. E. M. Chapman, entitled

Photography and the Chemistry Relating Thereto.

Mr. H. Durbin was in the chair and there was a good attendance of students, who followed the paper with great interest. Sketching the history of photography from its predecessor, the camera obscura, Mr. Chapman, after briefly explaining the construction of an ordinary stand camera and its accessories, proceeded to a detailed account of the manufacture of plates and the various methods of developing and fixing, exhibiting numerous samples at various stages of development, etc. The chemistry of the toning and fixing baths was also carefully explained, together with the various kinds of paper used, including ferroprussiate, bromide, and platinotype. Cameras, plates, photographs, and other appliances were kindly lent by Messrs. Eastman and Messrs. Houghton, and were much appreciated.

The Chairman expressed his thanks to Mr. Chapman for his paper, remarking how useful such a paper was to the Major and Minor students, considering that the processes of photography were now included in the Major syllabus, besides the fact that most chemists required their assistants to have a knowledge of that rapidly increasing branch of their business.

Mr. F. A. Upsher Smith having made a few remarks, some technical questions followed from Messrs. Spurway, Padwick, Evans, Finnemore, and Collinette, to which Mr. Chapman suitably replied, and the meeting ended with a vote of thanks to the Chairman.

EXTRACTS FROM CONSULAR REPORTS.

Two Laboratories, one for the examination of food and the other for bacteriological investigation, have been established by the Board of Health of San Francisco. An official chemist with an assistant has been placed in charge of the chemical laboratory, and is constantly engaged in the analysis of food-stuffs. He renders monthly reports, and where his analysis shows articles purchased to be adulterations, or substitutions, warrants are promptly issued for the arrest of the offending dealers. All brands of condensed milk, catsups, and jellies have been inspected and analysed and, according to the report of Acting Consul-General Moore, many palpable and startling adulterations have been made known to the public.

The Analytical Data regarding fruit jellies, jams, and marmalades show that in no line of food products has adulteration and substitution been carried to such an alarming extent. Of eighty-seven samples analysed, twenty-eight only could be called pure, twenty were adulterated, and thirty-nine were fraudulent substitutes. A majority of those passed as pure jellies, although made from their respective fruits, were not made from choice fruit; some were made from immature fruit, and some from over-ripe fruit which had already passed into a state of incipient putrefaction.

Samples of Tomato Catsup, to the number of thirty-one, were examined, but only two of them were found to be free from antiseptics, the remainder containing either salicylic acid or boric acid, whilst sixteen were coloured with aniline dyes. Of fourteen samples of condensed milk and evaporated cream, seven were found to be approximately pure condensed milk, representing a standard of about three parts of pure milk condensed to one part. The remainder seemed to have been made either from skim milk or milk which was very poor in butter-fat. Manufacturers of these goods are now said to be making laudable efforts to bring their products up to a uniform standard.

In Florence there are reported to be about 210 tobacconists, 169 public houses, and 1303 shops for the sale of wine, spirits, and liquors, 10 hospitals, one foundling asylum, four orphanages, 158 relief societies, and 29 colleges, schools, and other educational establishments.

The Turkish Opium Trade with the United Kingdom for 1897, as compared with the previous year, decreased by some 14,882 lbs., valued at £20,376, the total quantity exported from Turkey to this country in 1897 being 349,945 lbs., value £165,484. Prior to that year there had been a steady increase in the exports to the United Kingdom, rising from 247,071 lbs., value £124,360, in 1893, to 364,827 lbs., value £185,860 in 1896. A considerable quantity of opium is also exported from Turkey to the United States of America, and the Government of the Netherlands is reported to effect yearly purchases of the finest opium procurable for exportation to the Dutch Colonies.

Sugar Beet Culture is reported to be increasing in California, and is likely to become a leading industry of the State in the near u ture. In 1897 there were four large factories in operation, their o mbined daily capacity being given as 2950 tons of beets. Three ew factories, with a total daily capacity of 6000 tons of beets,

were under construction, and were expected to commence operations last year. The large amount of money required to build and equip one of these factories has hitherto mitigated against the increase of the industry, as capitalists were naturally unwilling to invest until assured of success. Now that sugar has received increased protection under the new tariff, and it has been demonstrated that sugar can be profitably produced on the Californian coast, there is likely to be a considerable increase in the business.

The Exports of Quicksilver from San Francisco during 1897 (5464 flasks, value £42,073) were little more than one-half those of the previous year (9494 flasks, value £63,515), but the shipments by rail to the Eastern States were considerably heavier. Altogether, however, the amount which left the State in 1897 was a decrease on that of 1896. Prices showed an advance.

The Sulphate of Ammonia imported into Valencia during 1897 was 5435 tons over the importation of 1896.

The Value of the Sponge Export from the Caicos Bank for the year 1897 mounted up to between £4000 and £5000, or nearly five times the sum of the previous year's taking. Nearly the whole of this is taken by Bahamas sponging craft and carried to Nassau for sale, the business being one which, according to Governor Sir A. W. L. Hemming, the Caiconian fishermen are too idle to work at with any steadiness, and the local merchant, for some not very clear reason, is shy of meddling with. Thus the Dependency (Turks and Caicos Islands) really reaps but a slight proportion of the benefit that naturally should accrue from this source of wealth.

The Importation of Chemicals into the San Francisco market, in Acting Consul-General W. Moore's opinion, is likely to fall off materially, owing to the extended operations of the chemical manufacturers of the Eastern States, and the increase in the duty under the new tariff.

As Evidence of Business Enterprise in San Francisco, Acting Consul-General Moore states that several of the large retail shoe dealers now undertake to clean the shoes of their customers free of expense, and keep an employé in attendance expressly for that purpose. This innovation, he remarks, will prove of some benefit and convenience to a large number of the residents of the city who reside in lodgings or boarding houses, where it is not the custom, as in England, to include the cleaning of shoes in their charges, and the usual charge for this service at the street stands is 2½*d*. One or two of the larger stores are also reported to furnish their customers with shoe laces free of cost.

Amongst the New Ordinances adopted by the Board of Supervisors at San Francisco, one prohibits expectoration in street cars and public places, while another requires that the food supplies intended for public institutions shall pass through food stations for inspection.

The Californian Honey Crop of 1897 was, according to a commercial estimate, 3720 tons.

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACTS.

The Pharmaceutical Society *v.* C. Houseman.

At the Clerkenwell County Court, on Friday, January 20, the case of the Pharmaceutical Society *v.* C. Houseman, of 182, Clerkenwell Road, London (an unqualified assistant), came on for trial.

Mr. C. W. Langley Flux, solicitor, who represented the Pharmaceutical Society, stated that the action was brought for the recovery of the amount of one penalty of £5 incurred by the defendant by having sold poison contrary to the provisions of the 15th Section of the Pharmacy Act, 1868.

The defendant did not appear, and was not represented, but had written to the Court admitting the offence, and making an offer as to payment of the penalty and costs by instalments.

The proposal as to payment having been accepted judgment was entered for the plaintiffs with costs on those terms.

NEW REMEDIES.

Picric Acid for Blepharitis.—Fage has used picric acid in 5, 8, and 10 per mille aqueous solution in the treatment of blepharitis. The treatment consists in the removal of the crusts and the application of the solution on gauze, or painting with cotton wool, either pure or mixed, with equal volumes of glycerin. The pain, inflammation, and irritation disappear during cicatrisation, and a quick cure of this obstinate disease is frequently effected.—*Münch. med. Woch.*, 45, 195.

Xeroform (Tribromo-Phenol-Bismuth).—Dr. M. Kaiser again draws attention to the advantages of xeroform over iodoform, on account of its being non-poisonous, free from odour, and cheap. Excellent results have been obtained by the author in sixty surgical and dermatological cases, very small quantities of xeroform producing the same healing effects as very much larger doses of iodoform.—*Therap. Monats.*, 12, 64.

Orthoform as an Anæsthetic.—Boisseau has found orthoform to be a useful anæsthetic in eight cases of operations. On the eye its effect lasted about twelve hours, and no secondary symptoms were observed even after continued application. The author prefers pure orthoform to the medication in the form of ointments. Lichtwitz has used orthoform for hay fever, and one insufflation of the powder into the nostrils checked the progress of the disease. The use of orthoform is recommended as a substitute for the more dangerous and less effective cocaine.—*Münch. med. Woch.*, 45, 161.

Itrol (Silver Citrate) in Gonorrhœa.—O. Werler confirms the previously published favourable results obtained with the use of itrol injections in gonorrhœa. He commences with a solution of 25 milligrammes in 200 C.c., gradually increasing the strength to 50 milligrammes, four injections being practised per diem. He finds the solution to be a most powerful germicide for gonococcus and to penetrate deeply into the affected tissue without causing irritation.—*Therap. Monats.*, 12, 58.

Menthol for Bruises.—The following is said to be a useful application for contusions:—Menthol, from 3 to 6; collodion, from 24 to 27 parts. Mix; to be painted on once or twice a day.—*Practitioner.*

Thiophene Di-Iodide ($C_4H_2I_2S$) is a crystalline preparation containing 75·5 per cent. iodine, 9·5 per cent. sulphur, insoluble in water but soluble in ether, chloroform, and alcohol. It is obtained by the action of iodine and iodic acid, or iodine and mercuric oxide on thiophene. It is applied as an antiseptic for wounds either by itself or mixed with dermatol, as a dusting powder, or in 20 per cent. solution for dressings.

Trinitrine in Hæmoptysis.—L. Flick has found trinitrine a prompt remedy in arresting hæmoptysis in phthisical cases. Half a drop of the one per cent. alcoholic solution was given every half hour.—*Nouv. Rem.*, 14, 168.

Thiol as a Substitute for Ichthyol.—Wirz strongly advocates the substitution of thiol for ichthyol, since it is not only odourless and cheap, but very efficacious. In inflammation it exercises a marked analgesic effect even where the deeper tissues are involved, frequently obviating the necessity of surgical interference. It proves equally efficacious in cases of otitis externa, and when applied in frictions to the chest, in cases of emphysema, rapidly diminished the dyspnœa, relieved the muscular pains, promoted expectoration, and diminished the bronchial catarrh.—*Nouv. Rem.*, 14, 154.

Fluid Extract of Apocynum Cannabinum as an Antiascitic.—In doses of 3 to 15 drops, repeated three or four times in twenty-four hours, K. Aleksieef has found the fluid extract of *Apocynum cannabinum* to act as a cardiac tonic, and is specially serviceable in cases of valvular lesions and arterio sclerosis. If diuresis and amelioration of the general condition do not ensue after administration of repeated doses of 3 to 5 drops for two or three days, the remedy is not likely to be serviceable, and should be discontinued. It is without cumulative action.—*Vratch.*

SELECTED PRACTICAL FORMULÆ.

Preparation of Organic Extracts.

From the fact that unsatisfactory results have followed the use of certain dried preparations of thyroid glands, which have been found by Lanz and Maubrac to contain large quantities of various bacteria, septic vibrios, and also products of putrescent decomposition, Maurange recommends the use of pre-digested preparations of the various organs for the preparation of extracts, since Howitz, Fox, Mackensie, and other clinical experimenters have found that the action of the digestive ferment does not in the least modify the specific physiological results of the active principles of the glands or of other organs. The following process is given for the thyroid gland preparation, and is equally applicable to ovarian tissue, suprarenal capsules, and other organs. 100 grammes of minced thyroid is mixed with 500 grammes of water, containing 2 grammes of pepsin, and 15 grammes of tartaric acid. The mixture is digested at 45° C. for 6 to 8 hours with frequent agitation, or until a portion of the liquid gives no coagulation of albuminoids with nitric acid. The liquid is then filtered and exactly neutralised with potassium bicarbonate. It is again filtered and evaporated *in vacuo* at a temperature not exceeding 45° C. to a syrup. This peptone may then be dissolved in 7½ litres of wine, one tablespoonful of which will be equivalent to 20 centigrammes of the fresh gland. The peptones thus produced will be found to keep perfectly either in the dry state or in a syrupy condition, mixed with equal quantities of alcohol and of glycerin, although the above wine forms the most pleasant means of administering the product. The use of these preparations has been attended by the best results, and in no case has any unfavourable symptom been developed.—*Bull. Gén. de Thérap.* (sec. Pharm.), 5, 698.

For Chapped Hands.

Menthol, 1 ; salol, 2 ; olive oil, 10 ; lanolin, 30. To be applied night and morning.—*Bull. Gen. de Therap.*

Lustrous Shoe Polish.

Methylated spirit, 126 ; camphor, 1 ; Venice turpentine, 16 ; shellac, 36 ; aniline black, 32. Dissolve. For brown shoes Bismarck brown may be substituted for the aniline black. This preparation produces a fine silky lustre, not a bright, varnish-like surface. —*Scient. Amer.*, 79, 394.

Black Finish for Laboratory Tables.

Boil together until solution is effected, copper sulphate, 125 ; potassium chlorate, 125 ; water, 1000 ; and apply two coats of the solution to the table top whilst hot, the second as soon as the first is dry. Then dissolve aniline hydrochloride, 150, in water, 1000 (or aniline, 120 ; hydrochloric acid, 180 ; water, 1000), and apply two coats of this solution. When the wood is thoroughly dry apply a very thin coat of raw linseed oil with a cloth, and polish by rubbing. The black colour is not fully brought out until the table top has been subsequently washed with hot soap suds, the superfluous chemicals being thus removed. The colour is said to be very permanent, resisting even strong acids and alkalies, if they are quickly washed off.—*Journ. Appl. Micros.*

Wine of Iron Glycerophosphate.

The following formula is given for the preparation of this wine :—Iron glycerophosphate, 10 grammes ; rub down with glycerin, 50 and add sherry, 1000. Digest together for four hours with occasional shaking, then filter.—*Merck's Report*, 1898, 184.

Extemporaneous Preparation of Lysol.

Lysol, which is said to be equal to the liquor cresoli saponatus Ph.G., and has oleic acid soap substituted for linseed oil soap, may be prepared according to Wellman (*Pharm. Ztg.*, 43, 471) in the following manner :—Into a suitable vessel weigh cresol, 500, then oleic acid, 250, and after shaking it a few times add a solution of caustic potash, 50, in distilled water, 200, shaking till a soap is formed. The use of ammonia as the saponifying agent is, however, even preferable to the above, for the resulting soap has greater antiseptic power. This is produced with cresol, 500 ; oleic acid, 250 ; solution of ammonia, 100 ; shaken together until emulsified, then diluted with water to produce 1000.

LETTERS TO THE EDITOR.

The Federation and Trade Topics.

Sir,—I have to bring the following subjects before the notice of local pharmaceutical associations :—

(*a*) A communication has been received from the Plymouth, Devonport, Stonehouse and District Chemists' Association, enclosing a bottle of solution of ammonia (see *P.J. ante*, p. 38) bearing the following label :—

Liquid Ammonia.

Medicinal use, Stimulant, Antacid, and Antispasmodic.

Relieves Nervous Headaches, and is useful in Pneumonia, Bronchitis and Dyspepsia.

Externally (applied to the nostrils) in Syncope.

Dose—Ten to twenty drops in water.

I find that the solution contains 12 per cent. of ammonia gas. It is put up in a four-ounce corked bottle. It does not bear the word "Poison," and there is no caution given as to its use ; neither is the name of the firm who supplied it indicated. It was obtained from a local [Plymouth] firm of wholesale grocers, who, no doubt, distributed similar articles to their customers in the usual way of business. The mischief such careless distribution and recommendation of strong drugs may do is apparent. As there is a possibility of the poison regulations being further extended, it was suggested by the above Association that the executive of Local Associations should endeavour to purchase other flagrant instances of strong drugs, etc., that are sold in a similar way, and bring them to the notice of the Pharmaceutical Council.

(*b*) From the same Association the following suggestion has been received : In view of the lamentable accident which occurred at Heaton Norris, it is advisable that Local Associations should convene special meetings, to discuss the subject of dispensing in surgeries, etc., by unqualified persons, and that resolutions be passed urging the Council of the Pharmaceutical Society to bring the matter before the notice of the Privy Council.

(*c*) The misuse of chemists' titles was discussed most ably by Mr. J. Rymer Young in his Manchester address, fully reported in the *Pharmaceutical Journal* of December 17 last. As the confidence of the public is gained by using the title "Chemist and Druggist," it is to their interest that it should be confined to those who have passed the necessary qualifying examination ; further, its misuse is a great injustice to those individuals who are legally qualified to use the title. As this subject is of the greatest importance to every registered chemist and druggist, it is advisable that steps be immediately taken to ascertain the legality or otherwise of limited companies using the title "chemists and druggists."

I shall be glad if the above subjects are brought before the notice of each of the associations at its next meeting.

Liverpool, January 28, 1899. R. C. Cowley,
Hon. Secretary, Federation of Local Pharmaceutical Associations.

Wanted—A Good Work on Pharmacy.

Sir,—That a good work on pharmacy is a desideratum goes without saying. In the hope of some day coming across one I have read every available book which has been published to my knowledge during the past twenty-five years, and although many good attempts have been made, the want has not been fully supplied. I have also read Mr. Lucas' book, and while doing so came across many errors which, if carried into the examination hall, would certainly result in the rejection of the examinee. For example, in chapter xv., on tinctures, pages 140, 141 and 142, there is a good crop of errors in Latin nomenclature and a few in the pharmacy thereof. Notably would I refer to the specific gravity of tinctura arnicæ, which is stated as 0·974 ; either this means tinctura aloes or the figures are wrong, because I find that they are nearer 0·890, the actual figures being 0 8929, which practically accord with Mr. Umney's figures. Again, tinctura benzoini composita (not compositus, please) is omitted altogether, and as that is a most important article for the food and drugs analyst, in some parts of Great Britain, such an omission should not be. It would also have been an advantage to have added the average amount of solid matter present in these tinctures. Amongst his list of standardised tinctures, tinctura iodi is not included ; it should be.

January 30, 1899. A Teacher of Pharmacy (168/17)

Prosecutions Under the Food and Drugs Act.

Sir,—While regretting the recent prosecutions brought against chemists under the Food and Drugs Act—and at the same time permit me to say that in the majority of instances they seem most trivial—yet while acknowledging this, one has to allow that had there not been a wrong committed, "either unwittingly, through gross neglect, or with total apathy to the due care which ought to be exercised, worthy of a man holding qualifications which are understood to place him above suspicion," no prosecution would take place, and no indignity be offered. In a letter signed X Y Z of your issue of January 21, it is stated that often these prosecutions arise through want of technical knowledge; now would it not be better to have left such a statement unsaid, for it indicates an ignorance that, by reason of his training, education, etc., ought not to exist? Taking the lowest possible estimate, surely it is not too much to expect that every chemist ought to be cognisant of the fact that since a new Pharmacopœia has been issued, changes with regard to certain drugs contained therein require his immediate attention and study, and failing this he is already guilty of an irregularity; further, to sell that drug and not prove to his own satisfaction before so doing that the said drug answers to all tests so plainly laid down for his direction, then he becomes liable to the amenity of the law and guilty of an illegality. Surely we have not arrived at that state of mental stagnancy when it is necessary to apply for precedents "as to defence" in the form of "Dairymen's Unions"? From such suggestions one would be led to suppose that the law had been set in motion to run to earth all good chemists and druggists, and that the order of the day would seem to be persecution and not rightful prosecution. The best protection against such eventualities as that so ably described by X Y Z, and to quote his own words "the means to an end in ameliorating a very unhappy state existing," is to be up-to-date and ever on the *qui vive* for what, under such conditions, would prove an unwarrantable intrusion.

Liverpool, January 26, 1899. A. T. Wray, Ph.D.

Sir,—In a recent issue you published a letter by X Y Z advocating the establishment of a Chemists' Defence Union. May I point out to him and to all others interested that such an association is in process of formation, and that, given certain conditions, it will soon be in working order? The Union referred to is the one which is being promoted by Mr. Glyn-Jones in connection with the P.A.T.A.; and the conditions are

(*a*) The promise of support from a reasonable number of retail and wholesale firms, and

(*b*) The consent of the members of the P.A.T.A. at their annual meeting in May.

As many of your readers are aware, it is proposed that all retail chemists should be eligible for membership of the Union. Whether they are members of the P.A.T.A. or not would not matter, but non-members would pay a little more. It is intended that the privileges of those who join the Union shall include defence in the courts of first instance in all cases arising under the Acts selected; appeals to the superior courts in cases approved by the Committee of Management; and insurance against pecuniary loss arising from dispensing mistakes. No fines or costs of prosecution are to be paid, but costs of defence, up to £10 if necessary, will be provided in all cases. It is proposed that the Insurance Section should provide indemnification up to £500. The small fee (10*s.* 6*d.*) which it has been decided to charge for all this would of itself be insufficient, so a guarantee fund of £1000 (not called up) is also being raised. As above intimated, wholesale houses will be eligible to participate in the benefits of this unique combination, and several have already handed in their names and guarantees. A good many retailers also have informed me they will be very willing to join. The annual subscription to non-members of the P.A.T.A. will be a guinea, P.A.T.A. funds and Defence funds being kept quite apart.

I notice from the Press that the authorities are becoming increasingly strict in enforcing the Food and Drugs Act—the 1898 B.P. being now generally regarded as the standard—so it behoves chemists not only to look well to the quality and state of preservation of their drugs, etc., but also to see to it that there is an effective Union ready to defend them against injustice should the evil day come unexpectedly or undeservedly. Public analysts as a body are competent and conscientious, but I am sorry to say there are scattered up and down the country a few ill-trained and discretionless Jacks-in-office; and it is with them that most of the cruel cases originate. Then there is another consideration: no matter how upright and careful a chemist may be, such is the quickly perishable nature of many of his goods, he is always liable to be caught napping at some time or other. It may come about through an employé's carelessness during his principal's absence, or a lapse of vigilance may happen even on the part of the proprietor himself. In a case like that, whether is it better to go before the magistrate like a guilty convict, or bravely make the very best defence possible? I think an honest man's business and reputation demand the latter. For the latter expert solicitors, analysts, and witnesses are necessary; and it is only through such a Union as that now starting that these can become available in the highest state of organisation. The Executive has already secured the services of a solicitor who has made the Food and Drugs Acts almost a life-study, and who is frequently engaged in defending cases under these Acts. Further information may be had from Mr. Glyn-Jones, 2 and 3, Stonecutter Street, E.C.

Brixton, S. W., January 30, 1899. W. Johnston, Ph.C.

Liquorice and Creosote Pills.

Sir,—In the formula for creosote pills given by Mr. Upsher Smith, page 90, in last week's issue of the Journal, no reference is made as to whether the liquorice used was the natural root powdered, or the decorticated powder. The same remark also applies to the editorial note on the formula proposed by M. Agosti, to which Mr. Upsher Smith referred. I, however, have not been successful with either kind; using Mr. Upsher Smith's formula, the mass showing a strong tendency to crumble, and, indeed, to be altogether unmanageable. To remedy this, thinking it possible that glycerin might, with advantage, be substituted in place of the three grains of water (the B. P., 1898, specifying that creosote is freely soluble in glycerin), I tested the solubility of the creosote used in glycerin, and found it to be not miscible in any proportions, so consider Mr. Upsher Smith owes his success in the pill-mass to the creosote he used, or the state, and kind of liquorice he experimented with; but this leads up to an important point, and one well calculated to confuse a student. The creosote I used was obtained from a good-class house, and no doubt is sold as pure, yet it will not comply with the B.P., 1898, in its solubility. Turning to Attfield's 'Chemistry' for further reference, the following statement appears: "According to Morson, pure creosote is unaffected when mixed with an equal volume of commercial glycerin," thus implying, I think, that creosote is not soluble in glycerin. Then, reverting to the liquorice powder once more, I wish to call attention to the fact that the B.P. does not say whether liquorice root should be dried or not, although, of course, it is understood to be so in reference to the manufacture of the preparations therefrom. As the excellence of these depend very much on the drying of the liquorice, it is unfortunate the B.P. does not direct what temperature should be used for its desiccation. Information by any reader on these three points will be very acceptable to me.

R. Kathleen Spencer,

Knowle, Birmingham, January 31, 1899.

The Wandering Prescription.

Sir,—It is no doubt difficult for one on the staff of a respectable weekly journal to understand the case of the buffoon of the delirium tremens sweating under the agony of making bricks without straw. When the Laureate of a former age could only "Strain from hard-bound brains eight lines a year," how can you expect much from a paragraphist on a daily paper? Poor beggar, he is told to sparkle, and sparkle he must, so such trifles as truth, justice, and common-sense must be pitched overboard. Probably the "devil" was waiting for "copy," so he bethought him of one of his own experiences when thirsting for a drink, ere yet the all-night trams and 'buses had started, so he translated 2*d.* = prescription and chemist = open house, and there you have it.

January 28, 1899. Q. E. D. (167/40).

INFORMATION WANTED.

Sticky Fly Plates.—The name and address of the maker wanted.—(Fortior. —22/30.)

Stains.—Particulars are wanted regarding the composition of Stirling's aniline gentian violet stain and Austin's fuchsine stain. Can any reader oblige?—(X. S.—21/17.)

ANSWERS TO QUERIES.

Catarrh Smelling Salts.—Phenol, 24 ; ammonium carbonate, 16 ; oil of eucalyptus, 15 ; menthol, 10 ; strong solution of ammonia, 40 ; pine sawdust, *q.s.* Mix. [*Reply to* J. S.—22/26.]

Indian Brandy.—The composition of the preparation is not invariable, but it is frequently prepared by mixing equal parts of spirit of nitrous ether and tincture of rhubarb, and adding a little tincture of capsicum. [*Reply to* E. H. B.—22/34]

Glycerin of Boric Acid, B.P.—Glycerinum acidi borici is a viscid clear liquid. There is no ambiguity about the official directions for its preparation, so that you might have determined this point for yourself by making some. [*Reply to* S. H.—22/22.]

Household Ammonia.—Soft soap, 2 oz. ; pearlashes, 1 oz. ; stronger solution of ammonia, 40 oz. ; distilled water, 60 oz. Dissolve the soap and pearlashes in the water, then add the solution of ammonia. [*Reply to* J. S.—22/26.]

Polishing Paste.—Finely powdered glass, 3 ; powdered pumice-stone, 3 ; crude oleic acid, *q.s.* to make a paste. If desired of a red colour tint with ferric oxide ; if a hard paste is needed, add sufficient hard paraffin. [*Reply to* Oleic Acid.—22/18.]

Spectacle Trade.—(1) Messrs. Botwright and Grey, manufacturing opticians, Clerkenwell, London, E.C. (2) Hartridge's 'Refraction and Accommodation' (London, J. and A. Churchill) ; 'The Optician's Handbook' (London, The Gutenberg Press) ; Black on 'Eyesight' (London. J. Raphael and Sons) ; Jones on 'Light and Heat' (London, Macmillan and Co.).
[*Reply to* Spectacle.—22/29.]

Lin. Potass. Iodidi c. Sapone.—The sample you send contains potassium iodide and soap, but has no odour of lemon. We think it must be an old or badly-prepared sample. It certainly does not correspond with the official product, which, as you say, should be cream-like. You should maintain your ground and support your opinion by reference to the Pharmacopœia.
[*Reply to* J. A.—22/23.]

Tragacanth in Emulsions.—No, tragacanth alone does not give such good results in emulsions as powdered acacia. If the latter be of good quality it is the best gummy emulsifying agent of any. About 1 part of tragacanth will give the same consistence to an emulsion as 20 to 24 of acacia, but much depends upon the quality of both gums. A mixture of 3 parts of powdered acacia and 1 part of powdered tragacanth gives better results than tragacanth alone. [*Reply to* Piperazine.—22/17.]

Toilet Vinegars.—(1) Extract of jasmin, 1 ; extract of violet, 1 ; extract of rose, 1 ; tincture of orris, 1 ; dilute acetic acid, 4. Mix, allow to stand for seven days, then filter. (2) Tincture of benzoin (simple), 20 ; oil of neroli, 5 ; oil of myrcia acris, 5 ; oil of bergamot, 2 ; otto of rose, 1 ; acetic ether, 50 ; alcohol, 90 per cent., 500 ; dilute acetic acid to produce, 2500. Mix, let stand forty-eight hours, then filter. (3) Vinaigre au Violettes.—Extract of violet, 8 fl. oz. ; ionone, 30 minims ; extract of rose, 4 oz. : oil of neroli, 5 minims ; oil of ylang ylang, 5 minims ; tincture of orris, 6 fl. ozs. ; dilute acetic acid, 40 fl. ozs
[*Reply to* Piperazine.—22/17.]

Composition of Powder.—We cannot undertake the analysis of substances such as you send. It appears to be of a resinous or gum resinous nature, giving off aromatic odours when heated. We would advise you to (1) examine it microscopically ; (2) determine the percentage of ash ; (3) exhaust it successively with 90 per cent. alcohol, ether, and water. The residues left by the evaporation of these solvents should be examined, as well as the portion (if any) left undissolved by them. We shall be pleased to advise you on the interpretation of the results so obtained.
[*Reply to* H. N.—22/21.]

Toothache Jelly.—Phenol, 20 ; cocaine hydrochloride, 4 ; glycerin suppository basis, B.P., 76. Melt the basis with the other ingredients. [*Reply to* J. S.—22/26.]

Food Analyst.—(1) We cannot recommend any particular analyst in these columns. (2) Try the Tinplate Decorating Co., Ltd., Melyn Tin Works, Neath. [*Reply to* G. P.—22/31.]

Paraffinum Molle Alb.—Paraffinum molle is obtained by the fractional distillation of petroleum, or rather, it is the residue left after the removal of the more volatile portions. The portion which comes over last is the source of paraffinum liquidum. The colouring substances, whatever their composition may be, remain in the vaseline residue. Paraffin wax is found native in the solid state and is also obtained from shale oil—the product of the destructive distillation at very high temperatures of bituminous shale. This shale oil contains practically no semi-solid paraffins of the vaseline description. The colour of yellow paraffinum molle is removed by treatment with strong sulphuric acid and charcoal.
[*Reply to* Student—22/19]

DISPENSING PROBLEMS AND NOTES.

Sir,—The following (as written) was handed to me with a request that I would give a price for dispensing it. Thinking that some one had been busy with a prescription and probably left out the water I inquired the writer's name, and was informed that it was an exact copy of a "physician's prescription." Further I discovered that it was correctly copied from a book written mostly by American practitioners and edited by George Black, M.B., Edin.

℞. Mix.	Tincture of Iron	½ oz
	Sulphate of Quinine	24 grains.
	Chlorate of Potash	2 drachms.
	Glycerin	2½ oz.
	Syrup	½ oz.

Take two tablespoonfuls every two hours in a wineglass of water.

What course should be taken under all the circumstances? Is it intended to be dispensed as written or has the writer forgotten the water ?

Member (167/3).

Note.—There can be little doubt that water or some aqueous vehicle was intended to be added and has been omitted by an oversight on the part of the compilers of the book in question. The prescription as written makes only a little over 3½ fluid ounces ; two tablespoonfuls will contain, therefore, about 35 minims of tincture of iron. Moreover, taken every two hours, the whole quantity would be consumed in about seven hours, so there can be little doubt that the diluting vehicle has been omitted. Seeing how frequently the medicine is to be given, we should recommend making the mixture to 24 fluid ounces. The quantities of each ingredient contained in 1 fluid ounce would then be reasonable and in accordance with the usual doses of those substances in a prescription of the kind under discussion. The special circumstances of the case or the practice followed in other prescriptions contained in the same book ought to enable you to advise your client as to the best dilution to adopt.

Sir,—Can you tell me what the precipitate is in the following mixture? Can it be avoided ?

℞	Pot. Cit.	ʒiv.
	Liq. Strychnin	ʒss.
	Quin. Sulph.	grs. xii.
	Acid Citric	ʒi.
	Glycer. Aurant	ʒvi.
	Aq.	ad ʒvi.

Dispenser (22/27).

Note.—If you examine the precipitate under a low power of the microscope you will probably find it to consist of tufts of fine needle-like crystals of quinine citrate, a salt which is only sparingly soluble in water. Its precipitation might be prevented by using more citric acid, although probably an undesirably large quantity of free acid would be necessary. Reduction of the quantity of potassium citrate might enable a clear mixture to be obtained. Try this yourself ; if unsatisfactory the potassium citrate should be omitted by the prescriber. The precipitate, if crystalline, would be difficult to suspend ; moreover, there is a chance that it might also contain some strychnine.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Local Infiltration Analgesia.

A. E. Barker has obtained some remarkable results by resorting to local infiltration analgesia instead of general anæsthesia prior to performing surgical operations. The fluid used is a sterile solution of eucaine β, 1 part sodium chloride, 8 parts; and water, 1000 parts, by weight. The special syringe employed holds 10 C.c. of liquid, and has a perfectly fitting asbestos piston in a glass cylinder. It is filled with the solution at a little above the body temperature and armed with a suitable needle which is thrust obliquely under the epidermis until its eye is buried. A few drops of solution are then forced out and form a white plaque. This is "quite anæsthetic," and the needle is forced through it deeper in various directions while the fluid is pumped out, causing a thorough infiltration of the areolar tissues and, if necessary, of the muscles and periosteum all over the area to be operated on, until an artificial œdema is produced and presumably all the nerves of the part are steeped in the fluid. Finally, the smallest sized needle is thrust horizontally under the epidermis all along the course of the proposed incision until a long plaque is produced of white colour and raised. In about five or ten minutes the part will be in a state of analgesia and the operation can be commenced, more fluid being forced into the deeper tissues, if necessary, during the course of the operation. Patients remain conscious during the whole operation, and in one case referred to the patient talked, laughed, and described his sensations, as he enjoyed a cup of tea while his abdominal walls were being divided and stitched up. The solution used for infiltration is preferably prepared from powders, each containing 3 grains of eucaine β and [24 grains of] pure crystalline sodium chloride. One of these powders is dissolved in 7 ounces of distilled water, and the solution boiled for a few minutes just before use.—*Lancet*, No. 3936, 282.

Citral.

The interest attaching to this substance as a source of artificial violet perfume has induced Professor Tiemann to undertake, with the aid of several assistants in his laboratory, an extended examination of the characters of citral and its derivatives. Some of the results of their inquiry are given in a paper in the last number of the *Berichte*. It is pointed out that citral is an unsaturated aliphatic aldehyde, readily acted upon by acids and bases, the latter especially causing resinification, and producing sparingly volatile substances. Whether that effect is due to a polymerising analogous to that of compounds containing double linkages, as in the case of etyrol $C_6H_5{\cdot}CH{:}CH_2$, or to condensation with elimination of hydrogen, by which the aldehyde group of one citral molecule reacts with a methyl or methylene group of another citral molecule, has not yet been ascertained. Alkalies also exert a hydrolysing action upon citral, as in the conversion into methyheptenone and acetaldehyde, so that when citral reacts with another compound under the influence of alkali the result may be thus complicated, and the reaction will not be absolutely quantitative. In the action of acids upon unsaturated compounds the elements of the acid or of water attach themselves to the doubly linked carbon atoms of the substance acted upon; geraniol and linalol being thus converted into terpin hydrate. The ready conversion of citral into cymene in that way may be preceded by such an attachment of hydroxyl groups to methylated carbon atoms and the production of a cyclic citral derivative, which yields cymene by elimination of water as carvone yields carvacrol. But then the product of hydrolysis could not, by elimination of water, yield a benzene derivative with three double linkings, without transposition of an external double linking, and the conversion of citral into cymene is probably thus effected; as in the conversion of the enol form of carvone into carvacrol. Various experiments made from that point of view for the purpose of converting citral into an isomeric aldehyde proved unsuccessful, and the conclusion arrived at was that no such product can be obtained from citral by the action of either acids or alkalies. In another paper Tiemann deals with the two isomeric compounds of citral with semi-carbazid. He has endeavoured to obtain citral that would yield pseudo-ionone, and by subsequent inversion ionone, differing from that ordinarily produced, and has failed to do so, or to establish the existence of any essential difference between the forms of citral yielding semi-carbazid derivatives respectively melting at 171° C. and 164° C. Settlement of the question whether the citral corresponding to the semi-carbazone derivative melting at 171° C. really differs from that corresponding to the carbazone melting at 164° C., depends very much upon the possibility of separating ordinary citral into fractions yielding those products. So far as has yet been ascertained every kind of citral, whether natural or produced by oxidation of a terpene alcohol, will yield both, while in all cases the product melting at 171° C. is never obtained in a proportion exceeding 6 to 10 per cent. By observing suitable conditions citral *a* may be prepared, which yields almost exclusively a semi-carbazone melting at 164° C., and hence Tiemann infers the individuality of this citral. The smaller portion of material which passes into solution, as hydrosulphonic derivatives, yields a small proportion of citral *b*, giving some semi-carbazone melting at 171° C.; but the physical characters of citral *b* are almost identical with those of citral *a*, and otherwise than in yielding chiefly semi-carbazone melting at 171° C., it does not differ from citral *a*.

Keeping Ferrous Solutions.

W. S. Myers explains how ferrous solutions can be kept for more than a month in a practically unchanged condition. For example, to a 10 per cent. solution of ferrous sulphate he adds 10 per cent. of concentrated sulphuric acid and a suitable amount of iron in the form of small wrought iron nails. The acid liberates hydrogen slowly, yet quickly enough to nullify the oxidising action of the air, even when the solution is exposed in an open beaker.—*Journ. Am. Chem. Soc.*, **21**, 103.

New Species of Eucalyptus.

Mr. R. T. Baker, the Curator of the Technological Museum, Sydney, has described and figured in the 'Proceedings of the Linnean Society of New South Wales,' September 28, 1898, pt. 3, two new species of eucalyptus allied to *E. obliqua*. These he has called *E. dextropinea* and *E. lævopinea*. The former has a fibrous, persistent bark and inferior timber of a dark brown colour, and the volatile oil (0·85 per cent.) consists largely of a dextro-rotatory pinene chemically the same as that obtained from the Coniferæ, eucalyptol being entirely absent. *E. lævopinea* has a less fibrous but brittle bark, a very hard, close-grained, pale-brown timber. The volatile oil (0·66 per cent.) consists largely of a lævo-rotatory pinene chemically identical with that obtained from the Coniferæ, but contains neither eudesmol nor eucalyptol. A variety (*minor*) of this tree, which has sessile buds and smaller fruits, yields an oil which is white and thin, and contains phellandrene besides the lævo-rotatory pinene. Both species yield a ruby kino, consisting principally of a tannic acid and water, and containing neither gum (like the "Ironbarks"), eudesmin, or aromadendrin (like the "Boxes").

NOTE ON STRYCHNINE HYDROCHLORIDE.

BY W. HARRISON MARTINDALE, PH.D.MARBURG.

Having noticed the remarks of Mr. Dott and others on strychnine hydrochloride, it occurred to me to estimate the water of crystallisation in some commercial samples of this salt at different temperatures, in order to ascertain how far the B.P. test is correct, and also to endeavour to clear up certain other little points relative to the subject.

In passing, it is somewhat interesting to note that the nitrate is official in Germany; the sulphate in France and America.

The first thing which I wished to determine was whether a commercial sample of strychnine hydrochloride could be obtained yielding 8·8 per cent. water of crystallisation (8·86 per cent. corresponding to 2 molecules), and if so, at what temperature this loss takes place.

Then, with regard to sublimation. It has been stated that strychnine hydrochloride sublimes slightly over 120°, and that a temperature of 130° to 140° is necessary to totally expel the water of crystallisation. If the first be true how possibly can the water of crystallisation be accurately determined?

Further, the British Pharmacopœia states that the salt readily effloresces in the air. This seemed to me questionable.

The point as to oxidation at temperatures above 100° C. also presented itself, and to these ends I procured six samples from firms of repute and examined them, with the following results:—

Sample No.	Macro- and Micro-scopical Features.	Loss p.c. at water-oven temp	Loss p.c. at 100°–115°.	Loss p.c. at 115°–130°.	Loss p.c. at 130°–150°.
1	Matted, clinging together. Micro. medium-sized "trimetric prisms"	7·35	7·35	7·51	7·64
2	Larger crystals not hanging together	7·34	7·50	7·51	7·52
3	Macro. non-homogeneous. Micro. small crystals, with minute ones massed into nodules	7·70	7·75	7·76	7·85
4	Broken crystals, not hanging together	7·16	7·40	7·40	7·41
5	Moderate crystals, somewhat broken	7·20	7·45	7·55	7·68
6	Clinging together	7·15	7·40	7·50	7·65
7	Silky crystals, little broken	7·20	7·35	7·41	7·75
8	Ditto.	—	—	—	7·79

No. 7 and No. 8, I prepared myself from strychnine made by one of the largest manufacturers.

No. 8 was heated directly to 150°.

The formula for the hydrochloride is given by various authorities to be B, $2H_2O$; B, $1\frac{1}{2}H_2O$; B, H_2O; indicating respectively 8·86, 6·79, 4·63 per cent. H_2O.

From my results I do not think it possible to obtain a commercial sample containing as much as 8·8 per cent. water, and although my figures in the last column agree on an average with those obtained by Mr. Dott, I do not incline to his theory that the salt originally contains 2 mols. and then effloresces to "a composition something like $B_4{\cdot}7H_2O$."

It is just possible that we have here to deal with a combination—mixture if you will—of salts having respectively $1\frac{1}{2}$ and 2 molecules of water.

My reasons for thinking so are three: (1) A combination of an equal number of molecules of $C_{21}H_{22}N_2O_2HCl,2H_2O$ (8·86 per cent.), and $C_{21}H_{22}N_2O_2HCl,1\frac{1}{2}H_2O$ (6·79 per cent. H_2O) would contain 7·837 per cent. H_2O, and would in reality be of the constitution $B_4{\cdot}7H_2O$—the constitution suggested by Mr. Dott.

This theory, however, supported by my experiments, would not agree with the supposition that the salt readily effloresces. To the question of efflorescence in the air I will return later.

(2) Microscopic examination shows at a glance whether strychnine hydrochloride is fresh or has been heated. The crystals before heating are observed to be colourless, with a few longitudinal markings, and where transverse markings are seen they are almost always straight and angular.

But on placing the same in the water oven for a few minutes, and again examining, the crystals will be found to be cracked transversely, but irregularly, they will be slightly opaque and, in short, present a totally different appearance. None of the samples above examined showed these signs of loss of water.

(3) The mean loss at 130° to 150° of the above figures is 7·66—slightly under the theoretical 7·837, it is true. This discrepancy is, however, probably due to manipulation and loss by breaking of the crystals.

It is most essential to transfer the samples as quickly as possible from the air oven to the desiccator. The latter must be faultless and contain fresh concentrated sulphuric acid, as I find that if the acid be at all saturated with moisture the salt will absorb water from it.

Indeed, the dried salt, even after drying at 150°, will re-absorb its water of crystallisation quantitatively from the atmosphere. It was, therefore, imperative to conduct the experiments in as dry an atmosphere as possible.

I found that if a salt lost 7·2 per cent. of water in a water oven it would take up exactly that quantity again on being exposed to the atmosphere, under cover of a bell-jar to avoid dust, draught, etc.

In order to accelerate the re-absorption of water three of the above samples (after heating to 150°) were placed over cold water; weighings were made every two hours and the re-absorption of water was found to be gradual. The samples assumed their original weight in seven hours.

The others were exposed to the air and took slightly longer.

The crystals, however, which have thus re-absorbed their crystallisation water are seen, on mounting in Canada balsam, to have retained their cracked appearance, and are much broken along these transverse fissures, into smaller sections.

I do not think that sublimation will, in the least, interfere with the estimation of water of crystallisation. In all my experiments I have arranged for the collection of any possible sublimate, and have been unable to detect any by means of ordinary alkaloidal reagents or by the tongue. I worked similarly with the alkaloid itself, and could obtain no indication of sublimation even at 169° C.

As to oxidation, all the samples which I have heated to 150° are soluble in water at 15·5° C. after thus heating.

Finally, as to the B.P. statement that the salt "readily effloresces": Five samples were exposed to slightly different atmospheric conditions. The weight of the same did not decrease during one week. On the contrary, two gained slightly in weight. There was no sign of efflorescence, the crystals remaining bright and unchanged. Briefly to summarise, therefore:

(1) No commercial sample was obtained yielding 8·8 per cent. H_2O.

(2) Sublimation does not interfere with the estimation of water of crystallisation.

(3) The salt does not appear to effloresce in the air.

(4) The salt should be dried at above 130°, and it is not apparently decomposed even at 150°.

NOTES ON THE B.P. (1898) GALENICALS.

BY R. GLODE GUYER.

Aquæ.—This group, on the whole, has undergone little alteration at the hands of the compilers. The strength of the preparations has been slightly modified in some cases, but not to such an extent as to produce any appreciable difference in the flavour or aroma of the finished article, except in the case of aqua chloroformi. The standard of one pound to each gallon of product, in the case of those distilled from the raw material, is still maintained, and the strength of aqua cinnamomi is now reduced to that standard. Those prepared from their respective essential oils are now made so that each gallon of distillate is equivalent to 77 minims of the oil instead of 90 minims as formerly. This slight modification may be due to the fact that the compilers desired to make them in unison with the newly adopted decimal system. These waters when fresh are not cloudy as they formerly were.

Aqua Camphoræ.—The changes in this preparation are typical of a great many alterations which have been made. Although minor as far as potency or their therapeutic value is concerned, yet they are very gratifying to the pharmacist who is desirous of uniformity and accuracy; and certainly this formula and process should meet his requirements. The former rule of thumb process has been superseded, the camphor now being dissolved in alcohol, the solution made up to a given volume, and then added to the water, which is shaken till solution is complete.

Aqua Chloroformi.—The reduction in strength—from 1 in 200 to 1 in 400—facilitates solution, but the flavour depreciates after standing awhile, and the preparation should, therefore, not be stocked for any length of time.

Aqua Rosæ.—This preparation is ordered to be prepared from *Rosa damascena*, but there is no official description to be found of this particular rose. Was the old preparation, which could be prepared from roses grown at home, so inferior in aroma that we have to import a foreign water? Evidently opinions differ, but when this water was prepared from good sound fresh petals or their equivalent in pickle, a water was produced with a fragrance that was difficult to improve upon. The foreign water of commerce is stated to be "triple," but we do not know the original strength, nor is there any method of testing it, except that purely arbitrary and inconclusive one which depends upon the aroma. When these so-called concentrated waters of foreign origin are diluted, their flavour and aroma are seldom comparable with those of the older preparations. Aqua sambuci—a sister preparation—has been allowed to remain unaltered; why not aqua rosæ also?

Caffeinæ Citras Effervescens.—This is a welcome addition to the granular effervescent preparations. They are so distinctly popular and useful that we might have expected to find several similar preparations instead of only a meagre two, viz., caffeine and lithium citrates. The quantity of citric acid ordered is scarcely sufficient to prepare a moderate sized granule. It might easily have been increased and the quantity of tartaric acid reduced proportionately, so as to balance the acidity.

Confections.—Except for two very minor alterations in confectio sulphuris, this group has escaped alteration and addition, the compilers being wise enough to adopt the more drastic plan of deletion rather than revision.

Decoctions—These have been advantageously reduced to a very small group of three, two of which have undergone slight modification.

Decoctum Granati Corticis.—The proportion of bark has been increased from 2 ozs. to 4 ozs. in the 20 ozs., and the time for boiling is now definitely stated. Both alterations should prove useful to the few who may occasionally have to prepare this decoction.

Decoctum Hæmatoxyli.—The reduction in the quantity of the cinnamon bark is the only change that has occurred here.

Emplastra.—This group of galenicals is almost obsolete in both laboratory and dispensing pharmacy, owing to the increased popularity of machine-spread plasters. The changes which have been effected are of a very minor character, and in no way interfere with practical manipulations, except in the case of emplastrum belladonnæ. This is not a happy formula, as the plaster is far too soft and tenacious, and varies with the quality of extract employed.

Extracta.—A most laudable change has been made in the processes for many of these preparations, several being prepared by the repercolation process, others standardised for the first time, and many greatly improved. The paucity of the additions is a marked feature, and is greatly to be deprecated.

Extractum Belladonnæ Liquidum.—This is an excellent type of preparation, so far as the finished article is concerned, but it is open to criticism of an adverse character when the details of the process involved are considered from a practical standpoint. The constructive details are evidently based on what one might term experimental data, which are most misleading when dealing with a commercial quantity of the drug. It is unfortunate that this is the case, for there may be pharmacists who think there must not be the slightest deviation from the official process if the preparation is to be exactly of B.P. standard. Such a view of the case is, of course, an incorrect one, and a practical man may exercise his own discretion in a matter of this kind, where the product is to be brought to a given standard by a given process. Few would care to have to prepare such a comparatively costly preparation on a large scale, on strictly B.P. lines. The process of repercolation, which is officially adopted for the first time, is undoubtedly the best that can be used in making a preparation of this kind, but the quantity of menstruum directed to be used is out of all proportion. Doubtless the idea was to use the minimum amount, so that the final product should be slightly stronger than the required standard, but belladonna root, like all other drugs, is apt to vary considerably in its alkaloidal value. Since no allowance has been made for this variation, very poor root must not be used, for a root with a low percentage of alkaloids cannot yield an extract of the desired strength without adjustment by evaporation. On the other hand, the amount of the menstruum given is not sufficient to exhaust the drug. It might have been better if directions had been given for percolation to be pushed to the limits indicated by the absence of any precipitate with Thresh's or Mayer's reagent. The superfluous menstruum might then have been recovered by distillation, and the residue diluted to the required volume after being assayed. This would have resulted in the production of a practically identical preparation, and at the same time the process would have completely exhausted the root. The specific gravity of the final product will depend very largely upon the class of root employed, and possibly also upon its age. A belladonna root with a large percentage of extractive and a small percentage of alkaloids will produce an extract having a higher specific gravity than one prepared from a root having a large amount of alkaloids and a small quantity of extractive matter. This may appear a trivial point but a great deal depends upon it. A liquid extract of standard strength with a high specific gravity is of necessity more charged with inert extractive matter than one with a low specific gravity and, when diluted to prepare the

tincture, will naturally make it of a deeper colour than if an extract of the reverse nature were used. The same argument applies with equal force to the extractum belladonnæ alcoholicum, for if that be made from a high gravity extract, a more tenacious mass will be produced than if the other class of extract be used, as the latter will probably make a solid extract of a friable nature.

Extractum Belladonnæ Alcoholicum.—This is prepared from the liquid extract, and it is somewhat inconsistent that when the mother preparation is prepared by such an exact process its offspring should have been allowed to face the pharmaceutical world in such a state of incompleteness. The term "moderately firm extract" is much too arbitrary, and capable of being interpreted variously, according to the operator's ideas of what is meant by such a consistency as "moderately firm." The liability of variation in this direction, coupled with the fact that the liquid extract is in itself capable of having different degrees of extractive value, makes the character of the finished article of a distinctly uncertain nature. Given a dense liquid extract and an operator whose idea of a moderately firm extract tends towards a soft preparation, an extract of a stiff, tenacious or perhaps sticky mass will result; on the other hand, where the circumstances are the reverse, too hard a mass will be formed. Yet both extracts may be strictly B.P.! In the process for extractum nucis vomicæ the liquid extract is directed to be evaporated to a given weight, so that the chances of variation are reduced to the minimum. The same process should have been adopted for the preparation of belladonna extract, and the evaporation carried to such a degree as to ensure that the product would be a powder and not a moist extract, which may vary from a pilular consistency to that of a sticky or friable nature.

Extractum Cascaræ Sagradæ et Liquidum.—Already these two extracts have been brought into the battlefield of discussion. From a purely pharmaceutical standpoint both preparations are distinctly good, with one exception, for as Mr. Moss has pointed out, the liquid extract should have been percolated to a given specific gravity before adding the alcohol, and not to a given volume, as is now the case. The recent controversy has been confined to the question of the menstruum most suited for this preparation, viz., a weak alcoholic one or water. If cascara bark be properly exhausted with water the marc yields practically no virtue when subsequently treated with alcohol; that I think is sufficient to justify the adoption of the present menstruum.

Extractum Euonymi Siccum.—The introduction of calcium phosphate as the diluent is a distinct improvement upon the sugar of milk, adopted in 1890, which tended to make the powder of a hygroscopic nature.

Extractum Glycyrrhizæ Liquidum.—The directions to strain and press are unnecessary, for the extractive matter of this drug is readily removed by percolation with the water, nor is it desirable to have the root in such a fine state of comminution as No. 20 powder. A coarse powder is quite sufficient for all practical purposes, as the root is of a very open and porous nature. Repercolation might have been introduced with advantage, as it considerably diminishes the quantity of the percolate, and so reduces the amount of heat necessary for evaporation, for this is a case where heat is distinctly deleterious to flavour.

Extractum Jaborandi Liquidum.—The introduction of this extract is a distinct gain to pharmacy, for jaborandi has evidently come to stay, and an authorised formula was wanted, the liquid extract having been in considerable demand.

(To be continued.)

THE NORDRACH CURE OF CONSUMPTION.

BY JAMES ARTHUR GIBSON.

(Concluded from page 98.)

(2) Regulation of the Amount of Exertion and Rest.—There is nothing so injurious to a consumptive patient as over-exertion in any form—mental or bodily. This is not realised as it should be. The disease of itself tends to make the sufferer nervous and excitable, and every added excitement or over-exertion but increases the danger and hurries the patient to the grave. What a poker is to a fire is excitement to a consumptive—it hastens, though it may brighten, the consumption of the vital energies. The first thing a consumptive should be instructed to do is to take his temperature properly and to be guided entirely by it. A chart should be prepared and the temperature taken four times a day, in the morning on waking, an hour before dinner, again an hour before supper, and on going to bed at night, and noted on the chart. It is advisable to take it by the rectum, as thus the only reliable readings are to be obtained. The temperature, roughly speaking, should vary between, say, 36°·3 C. on waking in the morning, to about 37°·5 to 37°·8 C. after exertion about midday, gradually falling towards night when at rest. If it rises above 37° C. in the morning or 38° C. immediately after the morning walk, then the patient has done too much, and should be careful to do less. If it is as high as this without exertion then he should be in bed until it becomes more normal. Nothing is so exhausting to the system as fever—a much greater amount of oxidation and tissue waste goes on at such a time.

It is well that anyone who attemps to carry out the cure should weigh himself regularly each week, and note his weight on the temperature chart for comparison. On arrival at Nordrach, the patient, after a day or two's rest, is thoroughly examined, and the doctor is able to tell what is the condition of the lungs. He instructs the patient accordingly with his eye on the temperature chart. If there is fever present the patient goes to bed, and in very obstinate and old-standing cases I have known this to be for several months, but it has been the means of saving those patients' lives, though it is a terribly tedious ordeal. If the temperature be fairly good then the patient is instructed whether to lie on his couch, sit outside, or go for a walk. Walking is generally uphill, rising gradually, and must always be taken at a snail's pace. No hurrying is ever allowed. The lungs, while thus being strengthened, are not disturbed, and the healing process is permitted to proceed.

As the patient grows stronger the walks, which were only perhaps a few hundred yards to begin with, are increased gradually, until, by the time he is cured, he is walking as far as ten miles in a forenoon. Thus the patient, when he returns home, is in a thoroughly hardy condition, and is able at once to resume work. Walking, for those who are permitted, is done from immediately after breakfast until twelve o'clock, when everyone is supposed to be in his room resting for an hour before dinner. The way to rest properly is lying stretched out on a lounge or sofa. It is thus that the maximum amount of rest is obtained. After dinner again, all who are allowed are supposed to be outside, doing as instructed, and are required to be in their rooms again for an hour before supper to rest. It is wonderful how much this hour's rest will improve the appetite. The Doctor visits each patient three times a day—before breakfast, dinner, and supper—and it is then he instructs each what to be about till his next visit. Everyone is practically under his eye all day long, and it is on account of this personal, constant supervision that he obtains results so very much better than are obtained elsewhere. I should

say he cures 90 per cent. of his cases, and many of these would be such as had been given up as hopeless by others.*

I have known many cases to have come from other well-known sanatoria, unable to get benefit, hopelessly and as a last resort to Nordrach, and to have been perfectly cured. At the large hotel-like sanatoria on the Continent there is not the same constant attention to the individual; there is practically no compulsion to eat and no supervision of the every-day life, and it can be readily understood that the results suffer. As an instance of this, I have it on good authority that a patient absented himself from one of these sanatoria for a whole week, having gone into the neighbouring city, without his absence having been noticed. Twenty-five to thirty per cent. is the extent of the cures at such sanatoria, and these are only the most favourable cases. It is on the lines of such places that the movement in this country is being instituted. It may seem to anyone who reads these lines that life at Nordrach must be a dreary round, hedged in as one is on every side by restrictions; but that is far from being so. One could not find a happier set anywhere. Every liberty is allowed that does not interfere with progress toward recovery. There are certainly no amusements, such as concerts and games. There is not even a common sitting or meeting room. Such things are not for consumptives' good. But there are the walks with a companion through the beautifully wooded hills and valleys of the Black Forest.

There is the doctor himself—a wonderful personality—and, above all, there is the feeling of returning strength and the hope of future health and usefulness; that more than compensates for everything. Then three times a day all who are able meet in the dining-hall, when such subjects as politics, religion, and one's latest gain in weight are discussed. One must be very careful, however, to say nothing to hurt the feelings of Emperor William—that is a subject tabooed.

To illustrate to you what is the appearance of these poor consumptives, I would give you the following. An English doctor came out to see Nordrach and have a look into Dr. Walther's mode of treatment; no doubt to return the next day to England believing that he knew all about it. We were sitting at dinner and Dr. Walther said to Dr. ——— "There is but one person in the room besides ourselves who is not a patient, merely a visitor. Tell me who that is." Dr. ——— looked round, but was quite unable to pick out from so many healthy looking folk the one who was really sound. Then Dr. Walther said "point out the worst case in the room." Dr. ——— immediately said that he thought a lady almost opposite to him was the worst case. We were all uncontrollable. She was the only person who was not a patient. One looks back to the days at Nordrach—when it was a duty to be lazy and grow fat—as the happiest of one's life.

(3) Fresh Air.—Nowhere is the fresh-air treatment carried out so thoroughly as at Nordrach. It is an important factor in the cure of consumption, but it is only one out of the three essentials, and is, I take it, the least important of them all. You could cure a man of consumption if he were living in an alley in the slums of London if you nourish him and watch constantly over his actions; but it would be impossible to cure the same man in the pure air of the Engadine heights unless you could supply him with the extra nourishment he requires. However, this is beside the mark. Under the Nordrach system there is pure air, and any amount of it. Night or day, summer or winter, the casement windows are never closed. Often the windows are taken quite out of the frames. Wind or frost, rain or sunshine, it is all one. From going there until returning the patient is bathed in this pure air continuously. The sanatorium is a long way from a town or even a village. By the constant inhalation of pure air the lungs are ventilated and purified and the blood thoroughly renewed. Patients are encouraged to be outside as much as possible in all kinds of weather. Sometimes they walk in the rain for hours without overcoat or hat, or protection of any kind, and never think of changing their wet clothing afterwards, and they never catch cold! I have done the same thing all the three years I have been back in this country. Never an overcoat, no matter what the time of year or the state of the weather. I am often drenched without afterwards changing or catching cold. When I can I go without hat or cap, and I am only sorry I cannot do so every day. The constant living in the open at Nordrach—the bedroom being practically as much outside as the weathercock—makes one feel miserable afterwards if he gets into a room with closed windows. I always keep the windows of my house open all the year round, night and day. The temperature without and within being more or less equal, there is no danger of catching cold in going out at any hour in any season. Consumptives undergoing such treatment here would have nothing to fear so long as they carried out the treatment consistently, and did not one day live in a close room and the next day throw the windows open. Sudden change of temperature is the only thing to be avoided. The climate at Nordrach is very much the same as in this country. There is plenty of rain and mist; and in winter it is much colder than here. Climate has nothing to do with the cause or cure of consumption. All that is essential to the proper carrying out of the best system known is plenty of nourishment, rest, and pure air. These are all to be had in abundance here. Dr. Walther told me that we could as readily cure consumptives in this country as anywhere else, provided only that the proper men were entrusted with the work, and that the sanatoria were in the country, well away from a town. Nothing else is needed. No elaborate building with systems for supplying dried, heated, disinfected air to the patients, as some of our leading scientists would advocate. Such a system of treatment would only make hot-house cures. Such patients would never be able to live a natural life afterwards and keep well. Any kind of a house will do if it be in the country, and if the windows be knocked out, and if all the curtains, cushions, carpets and such things be thrown out of those windows. I have been reading an article by a doctor on the construction of hospitals for consumptive patients in the *Builders' Journal* of November 23 last. The writer shows an almost mediæval ignorance of the subject. He takes as an authority the 'Encyclopædia Britannica' that dates twenty years back, and another authority almost fifty years old, when everything of any value that is known about consumption has been learned within the last five or ten years! He advocates this system of heated air. He says that climates like that of Great Britain are very ill suited for allowing the air to be admitted directly into the patient's room without being sufficiently warmed. This is altogether wrong. This climate, or any climate, is suited for letting pure air directly into the rooms of consumptives at any time of the day or night and at any season of the year.

There are no bad results whatever to be feared. The patients need pure air, and need it in all its natural simplicity. They must live in it, bathe in it continually. With or without the guidance

* On the last day of 1898 five of us met in Edinburgh. We were all Glasgow and Edinburgh men who had been cured of consumption at Nordrach, and had everyone, some time within the last four years, been marked for death. You would not that day have found in Edinburgh five healthier or jollier fellows. C, of Glagow, was telling us that the same day a year ago he was sitting shivering over the fire, wrapped up in a blanket, and saying over to himself Tennyson's sad lines in "The May Queen," "It is the last new year that I shall ever see." We of course wired to Doctor Walther, wishing him the compliments of the season, and letting him know that we were all well and happy.

of a doctor there is no danger from such constant exposure in this climate. This will be realised only after many thousands of pounds have been spent on building useless sanatoria. Indeed, there seems to be a tendency to spend all available money and energy on building the sanatoria and to leave the treatment of the patients to take a very secondary place, perhaps only enough funds being left to keep them in semi-starvation. The least possible amount of money should be spent on the building, and every possible penny be saved for the maintenance of the patients, which must be on a liberal scale, if cures are to be effected. It will take £4000 or £5000 a year to properly feed and maintain fifty patients. There must be no stinting in the matter of food. The best form of sanatorium is a long three-storied building, situated at the proper place, facing S.E. or S.S.E., so that the patients' rooms, which should be to the front, may get the maximum amount of sunshine, and yet that the back of the house may not be altogether deprived of it. The ground story of this sanatorium would consist of the "cellars"—all above ground—for the storage of coal, etc., and for the heating apparatus necessary for hot water for douche-baths, etc., and for heating in winter. The second story would be a range of, say, twenty-five rooms, each measuring about 12 ft. × 14ft. × 11 ft., and all facing to the front. Behind these rooms would run a corridor, six feet broad, the entire length of the building. In this corridor there would be casement windows every six or eight feet, and these windows would be kept open continually. The entrance door would be at the south-west end of the sanatorium, which would be so constructed as to have no communication between the "cellars" and the living apartments. The top or third story would be a duplicate of the second. This would be the complete sanatorium, which would accommodate fifty patients, every one of whom would have a room to himself. The walls and ceiling of each room would be of wood—pine for preference—all waxed and varnished, so that they could be washed as often as necessary. In each room there should be a douche bath, hot and cold water, so that a patient could take a bath every day — wash-basin, writing table, bed, sofa or lounge, and two chairs would comprise the furniture of the room. There should be two casement windows in each room, which would always be kept open, and above each window there should be a fanlight window reaching to the ceiling, also kept open. This would always ensure adequate ventilation, which would be found never too much even in the depths of winter. I speak by the book in this matter, for I speak from experience—and, besides, I know what is being done in one sanatorium in England on these lines with the best results. There would be a coil of steam pipes in every room for heating it slightly in the very coldest weather. There should be no fires and no gas. Electric light is the necessity. The building for cooking, dining, etc., must be distinct and apart from the living house. This is all that is wanted; not elaborate systems of heating and ventilating. But I am doubtful if anyone will be convinced of this until a lot of money, which would have been much better spent on the patients, has been thrown uselessly away on buildings. Dr. Walther's sanatorium consists of four living houses, separated from each other by 300 or 400 yards. Only one of them has been specially built as a sanatorium, the other three having been ordinary dwelling-houses which he adapted to his purpose without change other than the increasing of the number of rooms and the fitting up of each room as I have mentioned above. The rooms in these houses face in all directions—some north, some east, some west, some south. Some of them are without a blink of sunshine for months, but the windows are kept open—the one essential—and the cures effected in these rooms are quite as rapid and satisfactory as in any of the others. I cannot insist too strongly on there being no merit in the sanatorium. Everything depends on the system and on the way in which it is carried out. It is necessary that the doctor who is to take charge of a sanatorium go to some properly conducted Continental sanatorium—Nordrach preferably—and study there a few months (not days) the proper mode of treatment. It would be nothing short of criminal for an ordinary practitioner to take up such work, one whose only qualification for carrying it on would be the knowledge he had culled from badly-informed books about a disease the true nature of which he was, a few months before, totally ignorant.

I have exceeded the space at my disposal, and have not said half of what I meant to say. The point I would like to enforce is: That nine out of every ten cases of consumption are curable by the means I have indicated—nourishment, rest, and fresh air. When these things are properly applied, they are the reversal of the conditions that bring about the disease, and there are certainly no other means that can effect a cure. We all know of the pounds of guaiacol carbonate and creosote that some consumptives have to take. These things are absolutely useless. It were much better that the patient spend his money on a few gallons of milk and some pounds of butter and beefsteak. No drug can do any good in the smallest degree, and no injection of serum is of any benefit. I had meant to have spoken of the best means of eradicating tuberculosis in man and in cattle. It is the same disease in both, and can be cured in the same way. Consumption being an infectious—and not a hereditary—disease, can be quickly diminished by preventing its spread, by the use of the same means as are resorted to in the case of other infectious diseases. Being curable, it follows that fresh cases, which would be few, and which would be at once notified, would quickly be cured. This refers to cattle as well as to man. If the State were to take the matter up—which in all conscience it ought to do, seeing that about 60,000 people die needlessly every year from consumption, and that almost a third of the cattle in this country are affected—and create a department for its suppression, I am convinced that in ten years tuberculosis could be completely eradicated. I would refer the reader to my article in last month's *Nineteenth Century* for fuller information on some of the points touched on here.

BACTERIOLOGICAL NOTES.

In the Report of the Medical Officer of the Local Government Board, 1897-98, recently issued, Dr. Klein gives an exhaustive report on the *Bacillus enteritidis sporogenes*. This organism was isolated from the bowel discharges in an epidemic of diarrhœa occurring among patients in St. Bartholomew's Hospital in 1895. In a former report (1896-97) Drs. Klein and Andrews found this bacillus to be present in the milk supply and to be absent from the evacuations of healthy individuals and of cases of ordinary diarrhœa. The *Bacillus enteritidis sporogenes* occurs as a shorter or longer rod, measuring 1·6 to 4·8μ in length, and 0·8μ in thickness, and frequently forming short chains. In size and appearance it is very like the *B. anthracis*. It is an obligatory anaërobe, is motile, possessing several long flagella, and under certain conditions spores freely. It stains well by Gram's method. In a sugar-agar stab, a cream coloured growth forms, accompanied by much evolution of gas. In sugar-gelatin, growth takes place with rapid liquefaction. Serum is also rapidly liquefied. Milk (which must be fresh) gives one of the most char-

acteristic cultures—the main portion forms a thin watery whey, on which float the cream and stringy masses of casein together with numerous gas bubbles; the whey has a distinctly acid reaction, and the tube smells of butyric acid.

The Organism is Markedly pathogenic to the guinea-pig, 1 C.c. of the whey from a typical milk culture one to two days old, injected subcutaneously, producing death within twenty-four hours. *Post-mortem*, the hairs are found to strip off near the seat of inoculation, the skin being green and gangrenous, the subcutaneous tissues are dissolved or gangrenous, and the muscular tissues sodden and disintegrated. The bacillus is abundant in the subcutaneous exudation, but is scanty in the internal organs and blood. Spores are met with in the subcutaneous exudation and in gelatin and serum cultivations, but are difficult to demonstrate in milk cultures. In order to isolate the organism, a small particle of the suspected material is placed in a test-tube containing 15 to 20 C.c. of sterile milk, which must not be more than three to four days old. The tube is heated to 80° C. for ten to fifteen minutes and then placed in a Buchner's tube with alkaline pyrogallol, and grown anaërobically at 37° C. In twenty-four to forty-eight hours the characteristic change of the milk will occur. The *Bacillus enteritidis sporogenes* is met with in infantile diarrhœa and in cholera nostras. It occurs frequently in milk, and always in sewage and manure, from which it may be readily isolated by the anaërobic milk cultures.

In the same Report Drs. Klein and Houston have a paper on the isolation of the *Bacillus enteritidis sporogenes* from water as an index of sewage pollution. This organism (or its spores) is universally present in sewage, varying in number from 200-2000 per C.c. Water was artificially contaminated with traces of sewage, then passed through a Berkefeld filter, and the brushings from the filter added to milk, and cultivated anaërobically. An artificial pollution so slight as to be quite unrecognisable by a chemical examination was detected with the greatest ease by this bacterioscopic method.

Rousselet, in the last number of the Journal of the Quekett Microscopical Club (VII., No. 43), gives a useful *résumé* on micro-cements for fluid mounts. He recommends first a coat of pure damar in benzole, then a coat of a mixture of damar and gold size, then three or four thin coats of pure gold size at intervals of twenty-four hours, and lastly a thin coat of Ward's brown cement.

Binaghi (*Centr. f. Bak.*, abt. ii., bd. iv., pp. 897 and 919) gives a list of the organisms in which capsules have been described. He considers Johne's staining method the best, viz., warm the preparations in 2 per cent. gentian-violet solution until steam rises, wash in water, treat for six to ten seconds with 2 per cent. acetic acid, and wash. The capsule he regards as a swelling of the outer layer of the membrane of the bacterial cell.

Bolley and Field give some results of experiments on the persistence of the typhoid bacillus in butter and milk (*Centr. f. Bak.*, abt. ii., bd. iv., s. 881). In sweet and sour milk the bacillus was found to be present in some cases for a month after inoculation. In sweet cream and in salted butter it was detected four months after inoculation. In some of the experiments the organism did not seem to persist so long, but in almost every case it was found for a week or ten days after inoculation.

DISPENSING NOTES.*

BY HAROLD WYATT, JUN.

As a continuation of the papers on this subject already contributed by me at various times to the Liverpool Pharmaceutical Students' Society, the following notes extracted from marginal annotations in the prescription register made during the last year may be of interest :—

Mixtures.

1. ℞ Liq. Ferri Perchlor. ..... ʒiii.
   Acid. Hydrobrom. Dil. ..... ʒiii.
   Quininæ Sulphatis ..... gr. xii.
   Tinct. Gelsemii ..... ʒiss.
   Sp. Chlorof. ..... ʒii.
   Syrupi Aurantii ..... ʒii.
   Aquæ ..... ad ʒvi.
   M. ft. mist.

On mixing the acid and the iron solution a deep red colour was produced, which, however, disappeared on further dilution. This was judged to be due to ferric bromide, as when shaken up with chloroform no indication of free bromine was afforded.

2. ℞ Quininæ Sulphatis ..... gr. xx.
   Acid. Sulph. Dil. ..... ʒi.
   Tinct. Chlorof. Co. ..... ʒii.
   Syrupi Limonis ..... ʒvi.
   Aquæ ..... ad ʒvi.
   Ft. mist.

This mixture invariably has a muddy appearance, and sometimes contains quite a perceptible scum of reddish thread-like particles after standing. The cause of this seems to be the tannic and other astringent bodies from the tincture of cardamoms in the compound tincture of chloroform partially precipitating the quinine. The only way to make it look elegant is to filter it, for the small amount of suspended matter removed, be it quinine tannate or not, need not be considered.

3. ℞ Potass. Bromid. ..... ʒv. gr. 40
   Potass. Iodidi ..... ʒii. gr. 40
   Tinct. Cannabis Indic. ..... ♏ 160
   Syrupi Aurantii. ..... ʒi.
   Mucilaginis Tragac. ..... ad ʒviii.
   M. ʒii. for a dose twice daily.

The quantity of mucilage in this is somewhat abnormal, but as a concentrated mixture is intended, it was dispensed as written.

4. ℞ Tr. Benzoin. Co. ..... ♏ 320
   Oxymellis Scillæ ..... ʒi.
   Vini, Ipecac.
   Tinct. Tolutani ..... aa ♏ 80
   Aquæ Destill. ..... ad ʒviii.
   M.

The yolk of an egg beaten up with ʒss. of water was put into the bottle, the tinctures poured in well shaken, and then the rest of the water, with the oxymel last of all.

5. ℞ Bismuthi Salicylatis ..... ʒi.
   Liq. Bismuthi ..... ʒii.
   Mucilaginis Acaciæ ..... ʒi.
   Sp. Chlorof. ..... ʒi.
   Aquæ ..... ad ʒvi.
   M.

A doctor in the habit of dispensing his own medicines asked me how it was that this mixture was so much more easily made smooth when it contained liq. bismuthi than when the salicylate alone was used. Thinking that the ammonium citrate in the liq. bismuthi was the secret, I made experiments which proved that bismuth salicylate was soluble in ammonium citrate, and that it is quite possible to make a liq. bismuthi salicylatis on similar lines to the liq. bismuthi amm. cit.

6. ℞ Sodii Bromidi ..... gr. 80.
   Caffeinæ Hydrobrom. ..... gr. xx.
   Sp. Ammon. Co. ..... ʒss.
   Aquæ ..... ad ʒviii.

The caffeine dissolved in the water, though the sal volatile throws it out of strong solutions. The spirit in the sp. ammon. co. doubtless assists this solubility of caffeine, which in water requires 80 parts to form a solution.

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* Paper read before the Liverpool Pharmaceutical Students' Society on Feb. 2

7. ℞ Liq. Bismuthi ..... ʒii.
Sodii Hyposulphitis ..... ʒii.
Tinct. Nucis Vomicæ ..... ʒi.
Infusi Calumbæ .....ad ℥vi.
Fiat mistura.

On mixing no immediate change was observed, but bearing in mind what takes place in a similar solution for a totally different purpose, the mixture was kept under observation. At the end of a day a brownish-yellow precipitate had fallen, and this gradually became darker and darker day by day until at the end of a month it was almost black. The precipitate is an oxy-sulphide of bismuth from the interaction of the thiosulphate of sodium and the bismuth citrate, assisted by the organic matters present and by the action of light. It is nothing more nor less than the bismuth hair dye, and will dye animal fibre or wool from a light brown to black, according to the time taken in the process and the amount of light to which the wool is exposed. A similar mixture to this is fully discussed in the 'Art of Dispensing.'

8. ℞. Salol ..... ʒi.
Nepenthe ..... ʒii.
Mucilaginis Tragac ..... *q.s.*
Aquam.....ad ℥vi.
M. ft. mistura.

Salol is by no means easy to reduce to an impalpable powder by simple trituration, because of its tendency to adhere to the sides of the mortar and the pestle if of porcelain. For it and for thymol, sulphonal, and other insoluble bodies which exhibit this same tendency, I find the following method work out well where it is desired to give the drug in mixture form:—Dissolve the salol in methylated ether and pour this solution on compound powder of tragacanth and lump sugar, grinding hard until the ether has evaporated. Then transfer to a hot mortar and continue the trituration until all smell of ether is removed. To this powder add water by degrees so as to form an emulsion. Having numerous salol mixtures to make similar to the above, we keep a compound salol powder ready containing 1 part of salol in 3 made with salol, 60.

Gum Tragacanth, powdered 15
Gum Acacia, powdered 15
Lump Sugar 90

made with ether as already described.

9. ℞ Piperazinæ ..... ʒi.
Liq. Strychninæ ..... ♏50.
Syrupi Aurantii ..... ℥vi.
Aquæ Chloroformi .....ad ℥vi.
Fiat mist.

As piperazine is alkaline, and would therefore throw out the strychnine from the liquor, mucilage of acacia was added with a view of preventing separation, though the amount of chloroform water present makes it very improbable that the alkaloid would come out, seeing that chloroform is one of the best solvents for strychnine.

10. ℞ Bismuthi Salicylatis ..... gr. 80.
Pulv. Cretæ *c.* Opio, Lond. Pharm. .... ʒii.
Mucilaginis Acaciæ ..... ʒiv.
Sp. Chlorof. ..... ʒii.
Aquæ .....ad ℥viii.
M. fiat mistura

The salicylate being liable to float to the surface, owing to its containing a good deal of air locked up in its particles, during powdering, I find it in this case best to rub it up with the compound chalk powder, and make into a stiff paste with the spirits of chloroform, which, thoroughly saturating both the powders, causes them to mix better on the subsequent addition of the water, which must be done little by little, the mucilage being added when about 2 ounces of water have been used.

11. ℞ Liq. Hydrarg. Perchlor. ..... ʒi.
Liq. Strychninæ ..... ♏xxx.
Aquæ Distillatæ .....ad ℥vi.
Fiat mist.

There was no visible precipitate when the liquors, each previously diluted with 3 ozs. of water, were mixed together, but under the circumstances, for safety a new mixture was made up as before, with the addition of acacia mucilage, ½ oz.

Ointments.

12. ℞ Atropinæ ..... gr. i.
Cocainæ ..... gr. i.
Vasilini Albi ..... ʒii.
Dissolve with gentle heat and then add, when cool, Acid. Boracici, gr. viiss.

These directions, if the ointment only contained one of the alkaloids, would be all right, but when both cocaine and atropine are present as prescribed the atropine is not soluble 1 in 120, and on cooling part of the atropine is deposited as pasty specks. It is preferable to dissolve the cocaine in vaseline as directed, and then when cool work in the boric acid with which the atropine has been intimately mixed.

13. ℞ Cupri Oleatis ..... ʒi.
Lanolini *c.* Olco ..... ʒi.
Ft. unguentum.

When warmed with lanoline (anhydrous) ʒii. the oleate showed signs of reduction, so a new lot was made by dissolving the oleate in ʒv. of olive oil with gentle heat, and then stirring in the lanoline when nearly cold. In this way there were no signs of the yellow cuprous salt in the product.

14. ℞ Hydrarg. Perchlor..... gr. iii.
Ung. Petrolei..... ʒi.
Ft. unguentum.

The irritating effect of even minute particles of perchloride of mercury on the skin being borne in mind, a solution of this salt was made in 30 minims of S.V.R., 1 fluid drachm of castor oil was mixed with this, and then the liquid mixed with the unguentum petrolei on a slab with the point of a bone spatula.

15. ℞ Zinci Oxidi,
Amyli Pulv. .....aa ʒss.
Acidi Salicylici ..... gr. x.
Adipis Lanæ Hydros.
Paraffin Mollis.....aa ʒss.
Olei Lavandulæ ..... *q.s.* (♏vi.).
M. fiat unguentum.

On keeping this seemed to become rather lumpy in places, and as this was most likely the effect of the action of the salicylic acid on the zinc oxide in the presence of the water from the hydrous wool fat forming zinc salicylate, the following *modus operandi* was adopted: The acid was rubbed down with 1 drachm of zinc oxide, then 80 minims of water were added and well mixed. To this an ointment, made by rubbing the rest of the powders fine, mixing with paraffinum album molle and adeps lanæ (anhydrous), 170 grains, melted together, was next added, and finally the perfume, mixing well. The object of using the zinc oxide, salicylic acid, and water rubbed together is to form the zinc salicylate at once, and so prevent any further change in the ointment.

16. ℞ Resorcin..... ʒi.
Ung. Chrysarobini ..... ʒss.
Ft. unguentum.

The resorcin must be powdered fine and added to the unguentum chrysarobini in the cold, for the resorcin being soluble in oils about 1 in 20, if heat were used the excess would crystallise out on cooling. I have noticed that when chrysarobin and resorcin are melted together in the proportion of 5 and 1 the mixture melts at a lower temperature than does chrysarobin alone, and that an ointment made with the mixture is smoother and easier made than when chrysarobin is there by itself. Phenol has also a solvent effect on chrysarobin.

17. ℞ Acid. Carbol. Pur..... ʒi.
Paraffin. Liquid. Alb. .....ad ℥ii.
M. Fiat oleum.

The relative insolubility of carbolic acid in paraffin ointments as pointed out by C. F. Henry, gave an indication that this oil

would not keep in solution the amount of phenol ordered. This opinion was justified on experiment, for fully half the phenol separated on cooling. On communication with the doctor olive oil was ordered instead of the liquid paraffin.

Pills.

18. ℞ Argent. Oxidi. ..... gr. ix.
Ext. Gentianæ, *q.s.*, ut fiat massa, divide in pil. xii.

The oxide was massed with resin ointment, and then the ext. gentianæ, made into pilular consistence with powdered gentian, was added to bring the pills up to 2 grains each. By this means the action of the extract on the oxide was obviated as far as possible.

19. ℞. Exalgin..... gr. ii.
Phenacetin .... gr. iii.
Fiat pulvis. Mitte, xii.

When rubbed together these powders gave off a persistent odour of valerianic acid, though separately neither the exalgin nor phenacetin had any smell. A possible explanation is that one of these bodies had been crystallised from amylic alcohol solution, and that traces of this locked up in the crystals either mechanically or as "alcohol of crystallisation" had become oxidised to valerianic acid or some similar compound.

PHARMACEUTICAL SOCIETY.

DONATIONS TO THE LIBRARY AND MUSEUM.

At a meeting of the Library, Museum, School and House Committee, on Wednesday, February 8, the Librarian and Curator presented the following reports of donations :—

To the Library (London).

Mr. E. J. Spitta, London (per Editor of *Pharmaceutical Journal*):—Photomicrography, 1899.

Street Brothers, London:—Street's Newspaper Directory, 1899.

T. B. Browne, Limited, London:—The Advertiser's ABC, 1899.

Radcliffe Library, Oxford:—Catalogue of Books added during 1898.

Professor E. Schaer, Strassburg:—Ueber physikalisch-chemische Eigenschaften des Chloralhydrats, von R. Mauch, 1898,

Smithsonian Institution, Washington:—Reprint from Annual Report of 1896.

American Pharmaceutical Association:—Proceedings, 1898.

To the Library (Edinburgh).

American Pharmaceutical Association:—Proceedings, 1898.

To the Museum (London).

Mr. E. H. Farr, Uckfield:—Twenty-five microscopic slides of sections of drugs.

Mr. A. Mander, Malvern:—Twenty-four specimens of South American drugs.

The London Missionary Society, London:—Twenty-three specimens of native remedies from Tanganyika.

Mr. R. J. Lynch, Botanic Gardens, Cambridge:—Living specimens of *Hamamelis virginica*, and *Daphne laureola*.

Mr. R. Goodwin Mumbray:—Living specimens of *Eucalyptus globulus* and *Smilax aspera*.

Mr. Mellor, Hemel Hempstead:—Specimens of *Daphne laureola*, and of *Ruscus aculeatus* in fruit.

To the Museum (Edinburgh).

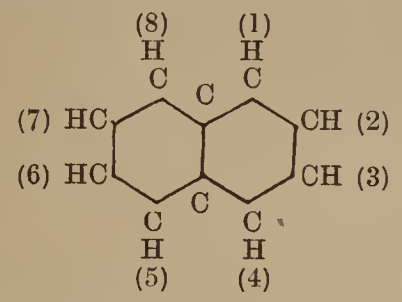
Messrs. Hodgkinsons, Clarke and Ward, London:—Specimens of Opaque Bdellium.

Creosote Carbonate and Ammonium Ichthyol in Phthisis.—H. Goldmann (*Wien Klin. Woch.*) advocates the treatment of phthisis with the following mixture, which is well tolerated and not unpleasant to take. Creosote carbonate, ammonium sulphichthyolate, of each 15 grammes; glycerin, 30 grammes; peppermint water, 10 grammes. Twenty to thirty drops of the mixture to be taken three times a day.—*Therap. Monats.*, 12, 641.

THE STUDENTS' COLUMNS.

EXPLANATORY NOTES ON THE B.P. 1898.

Naphthol.—This is a mono-hydroxy derivative of the hydrocarbon naphthalene, which is separated in large quantities from coal tar. The constitution of naphthalene is expressed by the formula—



which shows that it contains two condensed benzene nuclei. The naphthols are consequently very closely related to the phenols, but whereas only one variety of simple phenol—hydroxy-benzene—is possible, owing to the exactly equal value of each of the six CH groups of benzene, two isomeric mono-hydroxy naphthalenes are possible, and both are known. Inspection of the formula shows that replacement of each of the four hydrogen atoms numbered 1, 4, 5, and 8 by a monovalent group will result in one and the same derivative, owing to the exactly similar relation that each of these hydrogen atoms bears to the remainder of the molecule. On the other hand, replacement of any one of the hydrogen atoms 2, 3, 6, and 7 will lead to the production of another derivative, different from the previous one. For the first mentioned four atoms of hydrogen are each similarly connected with carbon adjacent to one of the carbon atoms common to the two nuclei, and which is not united to hydrogen. In the other four positions the replaceable hydrogen is united to carbon, which is adjacent only to two similar CH groups. The first class are known as α-derivatives and the second as β-derivatives, to which the official beta-naphthol consequently belongs. To prepare beta-naphthol from naphthalene the latter is heated with concentrated sulphuric acid for several hours at a temperature of 170°-180° C. At this high temperature beta-naphthalene sulphonic acid is chiefly obtained, while at lower temperature the alpha-acid is produced in larger proportion—

$$C_{10}H_8 + SO_2\langle^{OH}_{OH} = SO_2\langle^{C_{10}H_7}_{OH} + H_2O$$

The product is then diluted and neutralised with calcium hydroxide and filtered. The uncombined sulphuric acid is thus separated as insoluble calcium sulphate from the two isomeric calcium naphthalene sulphonates which are found in the filtrate. This filtrate is evaporated to a pasty consistence, and after standing, strongly expressed. The solid residue will be chiefly beta-calcium naphthalene sulphonate, while the alpha-salt being much more soluble in water will be contained in the expressed fluid. The pressed residue, after washing with a little cold water, is then dissolved in hot water and converted into beta-sodium naphthalene sulphonate by treatment with sodium carbonate solution, calcium carbonate being precipitated. The filtrate is then concentrated and the beta-sodium salt crystallised out. This is next added gradually to fused sodium hydroxide at about 300° C. The sulphonic group is then eliminated with formation of sodium naphtholate and sulphite—

$$SO_2\langle^{C_{10}H_7}_{ONa} + 2NaOH = C_{10}H_7\cdot O\cdot Na + SO_2\langle^{Na}_{ONa} + H_2O.$$

The fused mass is dissolved in water and acidified with hydro

chloric acid. This decomposes the sulphite with formation of sulphurous acid, while the soluble naphtholate is converted into the corresponding sparingly soluble naphthol, and is hence precipitated, filtered out, and purified by sublimation or recrystallisation.

$$C_{10}H_7ONa + HCl = C_{10}H_7{\cdot}OH + NaCl.$$

FLORAL CALENDAR FOR FEBRUARY.

The flowers in blossom during February are—many of them—the same that were in flower during January. In the following natural orders nothing fresh has come under notice: Acanthaceæ, Caprifoliaceæ, Cruciferæ, Cupuliferæ, Ericaceæ, Geraniaceæ, Hamamelidaceæ, Lardizabalaceæ, Linaceæ, Lythraceæ, Magnoliaceæ, Myrtaceæ, Orchidaceæ, and Scrophulariaceæ. Some of those mentioned in the following list may not be in flower until March if the weather is unfavourable, but they have all been seen in flower in a mild February. Flowers obtainable of florists are marked F; those to be seen in botanical gardens, B. G.; those found wild are not indicated by any letter. The January calendar is given on p. 62.

Amaryllidaceæ.—*Pancratium.* F., besides the January list.

Apocynaceæ.—*Vinca minor* (*P. J.* [3], 7, p. 689).

Boraginaceæ.—*Pulmonaria officinalis.* B.G.

Compositæ (or Asteraceæ).—*Petasites fragrans, Tussilago farfara*, in addition to the January list.

Coniferæ.—*Taxus baccata.*

Cornaceæ.—*Cornus mas.*, B.G. (*P.J.* [3], 7, p. 690).

Corylaceæ.—*Corylus avellana.*

Crassulaceæ.—*Echeveria.* B G.

Euphorbiaceæ.—*Mercurialis perennis*, in addition to the January list.

Fumariaceæ.—*Dielytra spectabilis.*

Iridaceæ.—*Iris reticulata.* F. *Crocus.* F., in addition to the January list.

Labiatæ.—*Nepeta glechoma*; *Rosmarinus officinalis.* F., in addition to the January list.

Lauraceæ.—*Laurus nobilis.* F.

Leguminosæ.—*Acacia armata.* F. *A. longifolia.* B.G. *Cytisus.* F., in addition to the January list.

Liliaceæ.—*Aloe plicatilis.* B.G. (*P.J* [3], 7, p. 689). *Bulbocodium vernum* (Tribe *Melantheæ*). F. *Chionodoxa.* F. *Hyacinthus azureus.* F.; *Scilla bifolia* and *S. sibiricca.* F., in addition to the January list.

Oleaceæ.—*Forsythia suspensa* and F. *viridissima* (*P.J.* [3], 7, p. 690), in addition to the January list.

Plumbaginaceæ.—*Plumbago rosea.*

Primulaceæ.—*Cyclamen.* F. *Primula sinensis.* F. *P. vulgaris.*

Ranunculaceæ.—*Adonis vernalis.* B.G. *Eranthis hyemalis.* F. (*P.J.* [3], 8, p. 665). *Anemone angulosa.* F. *Clematis indivisa.* F. *Helleborus fœtidus. Ranunculus ficaria* (*P.J.* [4], 4, p. 179), in addition to the January list.

Rosaceæ.—*Amygdalus communis.* F. (*P.J.* [3], 7, p. 690). *Potentilla fragrariastrum*, in addition to the January list.

Rubiaceæ.—*Bouvardia.*

Rutaceæ.—*Barosma crenulata.* B.G. (*P.J.* [3], 7, p. 689).

Saxifragaceæ.—*Saxifraga burseriana.* F. *S. crassifolia*, F. *S. sancta.* F.

Solanaceæ.—*Mandragora vernalis.* B.G. *Solanum jasminoides.* B.G., in addition to the January list.

Thymelæaceæ.—*Daphne laureola* and *D. mezereum.* See p. 62 for references.

Urticaceæ.—*Ulmus campestris* (*P.J.* [3], 7, p. 689).

Violaceæ.—*Viola odorata* (*P.J.* [3], 7, p. 689).

THE NEW POISON REGULATIONS.

APPROVAL BY THE PRIVY COUNCIL.

The consent of the Privy Council to the regulations as to the keeping, dispensing, and selling of poisons, adopted by the Pharmaceutical Society on January 11 last, was formally signified on January 31. The following is the text of the Order in Council bearing on the matter :—

AT THE COUNCIL CHAMBER, WHITEHALL.

The 31st Day of January, 1899.

By a Committee of the Lords of Her Majesty's Most Honourable Privy Council.

PRESENT.

Lord President.
Marquess of Lansdowne.
Sir John Gorst.

WHEREAS by Section 1 of "The Pharmacy Act, 1868," it is enacted that it shall be unlawful for any person to sell or keep open shop for retailing, dispensing, or compounding Poisons, or to assume or use the title "Chemist and Druggist," or Chemist or Druggist, or Pharmacist, or Dispensing Chemist or Druggist, in any part of "Great Britain," unless such person shall be a Pharmaceutical Chemist, or a Chemist and Druggist within the meaning of that Act, and be registered under that Act, and conform to such Regulations as to the keeping, dispensing, and selling of such Poisons as may from time to time be prescribed by the Pharmaceutical Society with the consent of the Privy Council :

And whereas the Pharmaceutical Society of Great Britain did, on the 11th day of January, 1899, adopt the following Regulations for the keeping, dispensing, and selling of Poisons within the meaning of "The Pharmacy Act, 1868," in accordance with the provisions set forth in Section 1 of that Act :—

"*1. That in the keeping of poisons, each bottle, vessel, box, or package containing a poison be labelled with the name of the article, and also with some distinctive mark indicating that it contains poison.*

"*2. Also that in the keeping of poisons, each poison be kept on one or other of the following systems, viz.* :—

"(a) *In a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary; or*

"(b) *In a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary; or*

"(c) *In a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles.*

"*3. That in the dispensing and selling of poisons, all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article, and to any particular instructions for its use) a label giving notice that the contents of the bottle are not to be taken internally.*"

And whereas the said Society has submitted the said Regulations for the consent of the Privy Council :

NOW, THEREFORE, the Lords of the Council are hereby pleased to signify their consent to the said Regulations.

A. W. Fitzroy.

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LONDON: SATURDAY, FEBRUARY 11, 1899.

THE SUGGESTED PHARMACY LEGISLATION.

As was to be expected, the publication of the suggestions for a draft Pharmacy Bill, which the Council of the Pharmaceutical Society decided last week to forward to the Lord Chancellor, has been received with much interest in the country, but not yet with such general expression of approval from registered chemists as might have been expected. In the present issue of the Journal will be found letters from several correspondents, raising some objections which are based on misconception, and already, unfortunately, there are suggestions of opposition from within the ranks of pharmacy. That fact is the more to be regretted, because no Bill has yet been actually drafted, and it seems unreasonable as well as inopportune to threaten opposition at the present moment. The Bill when drafted will almost certainly not deal with many problems which chemists would like to have solved; but is it wise or expedient on that account to threaten opposition? It is certainly not politic to preface remarks on the Council's suggestions with expressions of doubt as to their attainability, neither is it complimentary to the Council to assume that more has been asked for than ought reasonably to have been claimed. Some months ago, the President of the Pharmaceutical Society asked chemists throughout the country to express their views as to what seemed desirable to include in a Pharmacy Bill. The responses to that appeal were numerous and the suggestions which have been submitted to the Lord Chancellor undoubtedly represent the views of the registered chemists in Great Britain, as ascertained from those responses. The further recommendations which are now being sent in by correspondents are mostly excellent in their way; but they agree in possessing one fault—that of coming rather late, and it appears distinctly unreasonable at the present time to attempt to burden the proposed Bill unduly, or to threaten opposition to what is at least calculated to benefit the whole craft, because ideas now mooted for the first time in this connection have not been considered. As an excellent example of the position that should be occupied in the matter, reference may be made to the remarks of Mr. James Reid (see p. 136), who wisely points out that "we are not in search of ground upon which to plant an opposition tent, but we are in search of ground upon which we can all stand united and strong, with our front to the enemy." Those remarks are commended to the careful consideration of registered chemists who, like Mr. Yewdall, may be inclined to adopt an attitude such as is indicated by his letter printed at page 137.

The fact of the matter is that much greater regard must be had at the present juncture to what is expedient than to what is desirable, and it is even conceivable that the published suggestions of the Council, few though they be, may have to be modified before they become crystallised in a draft Bill. In considering the matter, it becomes desirable to devote a little attention to the steps by which we have attained our present position. When the Pharmacy Bill of 1898 was before the House of Lords, the Lord Chancellor directed attention to the fact that the Pharmacy Acts do not cover the case of drug stores carried on by joint-stock companies or other corporations, and he expressed his opinion that position was contrary to a common-sense view. Lord Herschell took up a similar position with regard to the Bill and supported the Lord Chancellor's evident desire to make the law more reasonably effective. When, however, the clause drafted by the Lord Chancellor, with that object in view, was published, it was found that it would not fulfil the desired purpose and the clause was accordingly withdrawn by its promoter. In doing so, however, he said once more that some amendment of the law was to be desired and that he should be glad to see a favourable opportunity of dealing with the question. Subsequently, the Lord Chancellor was approached by the General Medical Council with regard to the same difficulty, as it affected the medical profession, and as the time appeared ripe, the President of the Pharmaceutical Society was requested in December last, by his colleagues on the Council, to address a communication to Lord Halsbury on the subject (see *P. J.* [4], **7**, 614), requesting assistance in the endeavour to secure suitable legislation.

On receipt of an intimation that the Lord Chancellor thought an amendment of the law desirable and that he would be prepared to introduce a Bill into Parliament if there should appear to be a reasonable prospect of proceeding with it, suggestions for a draft Bill on the lines of the President's letter to the Lord Chancellor were submitted to the Council of the Society last week. Those suggestions having been unanimously approved, instructions were given that they should be forwarded to the Lord Chancellor, in the hope that he would see fit either to introduce a Bill on those lines, or at least to make some suggestions to the Council on the subject. The position at the present moment is that the Council has submitted to the Lord Chancellor suggestions for a draft Pharmacy Bill on those lines. If he is willing to introduce a Bill, well and good; if he makes suggestions to the Council on the subject they will receive full consideration, and be acted upon as far as appears consistent with the recognised needs of the craft. If, however, Lord Halsbury does not see his way clear to introduce a Bill or to offer suggestions that are likely to prove acceptable to registered chemists as a body, the Council of the Pharmaceutical Society may proceed independently to promote a Pharmacy Bill, and the provisions of that Bill can be made as comprehensive as may be desired, though even then the question of expediency will have to be considered. For the present, however, the Council is bound by the terms of the communication sent to the Lord Chancellor by the President a few weeks ago, and it is quite out of the question—as matters now stand—to suggest the inclusion of other clauses in the proposed Bill.

ANNOTATIONS.

The New Poison Regulations are now compulsory, the consent of the Privy Council to their adoption by the Pharmaceutical Society having been formally signified in an Order in Council, the complete text of which will be found at page 128. As has previously been explained in the Journal, these regulations now virtually constitute part of the Pharmacy Act of 1868, and every registered chemist in business in Great Britain should, therefore, at once take whatever steps may be necessary to enable him to meet all the legal requirements with regard to the keeping, dispensing, and selling of scheduled poisons. The regulations are given in full in the Order in Council, and there is good reason to believe that the vast majority of registered chemists will find there is nothing stipulated therein beyond the precautions they already adopt in dealing with poisons. The great thing is that the regulations, whilst well adapted to serve the required purpose—the prevention of accident—are sufficiently elastic for all purposes.

The First Regulation as to Keeping Poisons speaks for itself and requires no explanation. It provides that every container of a scheduled poison shall be labelled with the name of its contents and some distinctive mark to indicate that it contains poison. The second regulation specifies three systems in accordance with which scheduled poisons may be kept. One or other of the systems must be adopted in the case of each poison, but it is not essential, nor perhaps desirable, that the same system should be followed in every case. For example, system (*a*) suggests itself as most suitable for poisons kept in a warehouse; system (*b*) appears the ideal one for poisons kept in the pharmacy and dispensary; and system (*c*) recommends itself for the more potent poisons, such as are usually kept in a special poison cupboard. The requirements of the third regulation will be met by sending out all liniments, embrocations, and lotions containing poison, as is now usual, in the fluted poison bottles already in general use, and with the customary caution labels attached.

Breaches of the Regulations will be punishable by fine, in accordance with Section 15 of the Pharmacy Act, 1868, which provides that "any person who . . . . shall fail to conform with any regulation as to the keeping or selling of poisons, made in pursuance of this Act . . . . shall, for every such offence, be liable to pay a penalty or sum of five pounds." The penalty may be sued for, recovered, and dealt with in the manner provided by the Pharmacy Act, 1852, *i.e.*, by the Registrar appointed under the Act, in the name and by the authority of the Council of the Pharmaceutical Society. Though no penalty is stipulated for infringing any regulation as to the dispensing of poisons, it is obvious that a penalty could be sued for and recovered if the poisons dispensed were subsequently sold. The detection of infringements of the third regulation will be very simple, as all that is necessary is for a purchase to be effected, and the evidence necessary will at once be forthcoming. The procedure is not so obvious in regard to infringements of the first and second regulations, but it need not be anticipated that any serious difficulty will be experienced in that respect, if ever the occasion for proving such infringements should arise.

Evening Meetings of the Pharmaceutical Society will be held both in London and Edinburgh next week, a most unusual occurrence. At the London meeting, on Tuesday, Professor J. R. Green is announced to deliver a lecture on "Adverse Conditions and Their Remedies, in the Life of Plants," and the President will take the chair at eight o'clock. A more varied and more strictly pharmaceutical programme is offered for the delectation of the members of the North British Branch on Wednesday. Messrs. Alexander Davidson and George Lunan will then contribute a paper on "The Official Granular Effervescent Preparations"; Mr. G. F. Merson is expected to communicate papers on "Concentrated Decoctions and Infusions," and on "Unguentum Zinci Oleatis, B.P.," respectively. Finally, Mr. Archibald Currie has promised a practical note on "Pharmacists and Urine Analysis." At this meeting the chair will be taken by Mr. W. L. Currie at half-past eight.

The Suggestions for a Draft Pharmacy Bill have incited a correspondent of the *Westminster Gazette*, who is said to be in the drug trade, to write to that paper explaining—fairly correctly as it happens—that at present no one in this country can keep open shop for the sale of certain poisons unless he is a qualified chemist, but that limited companies enjoy exemption from this restriction owing to a judicial decision that a company is not a "person" within the meaning of the Pharmacy Acts. Further, he points out that companies have fulfilled the requirements as to the actual selling of poisons by employing legally qualified assistants for the purpose; and that they have also made use of the title of "chemist" with impunity. Continuing, he remarks, "to all this a Bill that the Pharmaceutical Council has just drafted, at the suggestion of the Lord Chancellor, will put an end. Incidentally I may say that the Bill strikes at many more traders than limited companies, but what I wish to show now is how it will make the business of drug dealers absolutely impossible to limited corporations." He then states briefly what are the objects of the suggestions which the Council of the Pharmaceutical Society has sent to the Lord Chancellor, on the understanding that he is prepared to introduce a measure giving effect to the Society's objects if there is a reasonable possibility of passing it during the coming session of Parliament. "In the first place, the Bill makes a company a 'person,' and so forbids it to have a shop for the sale of poisons or call itself 'chemist' unless it passes certain examinations which, of course, it cannot do. Secondly, it prevents a company (as well as other unqualified persons) from selling, dispensing, or compounding any medicines whatever, so that an ounce of Epsom salts or a seidlitz powder could be purchased nowhere but at the chemist's shop. This is more stringent than the law of France or Germany." Doubtless, this view of the matter will suggest itself to many critics, for the British public dearly loves to physic itself, and may be expected to resent any attempt to check that practice. But that, we believe, is not exactly what the Council of the Pharmaceutical Society intends by its suggestions.

The General Medical Council has drafted a short Bill of two clauses for the consideration of the Privy Council, the first clause being intended to give power to erase the name of a medical practitioner from the Register for a limited period, and the second to deprive any practitioner whose name should be erased of any diploma or degree entitling him to practise. It appears that there has always been considerable doubt in legal minds as to the power of the Medical Council to restore names which have been erased; hence the reason for drafting the first clause. With regard to the second one, as the law is at present usually interpreted, the erasure of a practitioner's name from the Register affects him but little, since he retains his diploma or degree, as a rule, and probably suffers little or nothing from a pecuniary

point of view. He cannot recover charges for attendance in any court of law, he is debarred from holding certain positions, and certificates given by him are not valid. On the other hand, he remains at liberty to practise as before, and is no longer subject to the jurisdiction of the General Medical Council. What is now proposed is virtually to deprive the erring practitioner of the means of earning a livelihood in the way he has been accustomed to earn it. Since no other way may be open, in many instances, the probability is that no British Government or Government department will approve of the clause, the more especially as striking a practitioner's name off the Register for advertising or some other mere breach of professional etiquette cannot logically be assumed to affect his ability to treat his patients as skilfully as before.

A Natural History Reading Room to be maintained in good order at the expense of the London County Council will be stocked with specimens and books by the generosity of Mr. S. Prout Newcombe, who has offered to that body his educational collection of natural history specimens and literature. The collection consists of about 21,000 objects, with a considerable mass of literature on natural history subjects, all classified to correspond with the examples, and is of special value to teachers, the arrangement being that of an illustrated catalogue. According to the *Times* it had been suggested that if the Chelsea Physic Garden became available the collection might be housed within the garden, the present lecture-room being supplemented by additional buildings, so that classes in botany and natural history might be conducted on the premises. In the meanwhile, the Technical Education Board had suggested that the great hall of Aske's Schools, which would gradually be equipped as a museum in connection with the cabinet-making classes, would serve admirably for housing the collection, which has been valued at about £3000, but really represents a life-long work in collecting and classifying. The draft deed of gift to the Council contains the following provisions: (1) The collection is to be kept and exhibited always in a room to be named "The Natural History Reading Room," which room is to be maintained in good order at the expense of the Council, and the collection is to be kept separate and distinct from other than natural history objects and literature; (2) the collection is to be transferred to the Council for educational purposes, and not as a public exhibition; (3) before the end of the present year the collection is to be removed temporarily to the Shoreditch Technical Institute, and within a certain period thereafter to be transferred to a suitable place in the county of London.

The Just Position of Bacteriology is considered in a paper published in last week's *Lancet*, the author asking if it is not almost time for some protest to be made against the all-absorbing importance now so generally attached to the subject. That bacteriology has rendered immense service to medical, surgical, and clinical science, and that it has effected much good in the investigation and treatment of disease, he does not deny; but surely, he says, it is not the "be all and end all" of the science and art of medicine and surgery, nor should it be allowed to replace, as it now appears to, the patient and careful clinical observation formerly relied on. "The feverish search for the particular microbe associated with each disease is quite at variance with the calm and philosophical study of symptoms, personality and environments, which should be the prime object of the scientific physician." The patient and laborious endeavour to identify some eluding bacillus is allowed to be worthy of all praise for those who have the leisure and eyesight for such reasearches, but it does not evoke the higher qualities of the "wise physician," and it should not be his whole end and aim in the investigation of the hidden causes of disease. That specific micro-organisms are intimately and invariably associated with certain diseases is held to be indisputable, and that they or their products will reproduce the same disease is thought to be equally undeniable, but that they are the original primal cause of disease is a very different matter. "It may be a good working theory, but it is 'not proven,' and at any rate it is one which should be received with limitations." In conclusion, it is asked that bacteriology should be relegated to its proper sphere as the handmaid, not the master and leader, of science.

The Scottish Chamber of Agriculture is a comparatively juvenile institution, promoted and developed largely by individuals who think the Highland and Agricultural Society of Scotland rather behind the times, and it is naturally anxious to win its spurs by doing something. When it is explained that Mr. Alexander Cross, M.P., is the most active person connected with the Chamber, no surprise will be felt at the announcement that the sale of poisonous sheep dips is a subject of engrossing interest to that body. In fact, so great is the interest taken in the matter that a petition has been addressed to the Board of Agriculture, asking that the restrictions on the sale of sheep dips and insecticides should be relaxed, "so that they may be sold by others than pharmaceutical chemists" Having regard to the fact that the whole of the very numerous body of chemists and druggists are legally entitled to sell all scheduled poisons, in every shape and form, the reason for the request is not altogether obvious. The point remains, however, that the petition referred to has been sent to the Board of Agriculture, and the Secretary of that body, in acknowledging its receipt, is reported to have stated that it has been sent to the Privy Council, "which is preparing a Bill on the subject." The latter statement may or may not be correct; the probability is that it is incorrect. At the same time, it is as well that Scottish chemists should be aware of the persistent attempts to injure them that originate in their midst. The Scottish Chamber of Agriculture is understood to have the ear of Mr. Walter Long, who is described by a correspondent as being in heathen darkness so far as any practical knowledge of poison legislation is concerned, and extremely anxious to please the farmers, even though it be at the expense of registered chemists.

Potassium Chlorate was recently the cause of some little trouble to the authorities at Constantinople. In view of its explosive properties the wholesale importation of the chlorate into Turkey was prohibited some years ago. Retail chemists and apothecaries, however, are permitted to import it in small quantities for pharmaceutical purposes, though restriction as to quantity is rigidly enforced, so that no single dispenser of medicines possesses enough for any nefarious purpose. It may be, observes a *Times* correspondent, that if the minute stores of the 230 pharmaciens of the Turkish capital were united the total would suffice for an attempt on the life of the Sovereign, and that idea appears to have entered into the mind of the watchful personage to whom the Sultan entrusted his safety one day when his Majesty had occasion to take a short drive in a suburb of his capital, and to cross the Golden Horn in a steam launch. Accordingly, the police were instructed to visit all the dispensaries and to seal up all the bottles, vessels, or cases containing potassium chlorate. It was necessary to do this work in one day, in order that refractory dispensers might not hide their chlorate away.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held on Thursday, February 2, at 73, Newman Street, W., the President, Mr. F. W. Gamble, in the chair. There was a good attendance, amongst those present being Mr. W. H. E. Thornthwaite, F.R.A.S., the Worshipful Master of the Spectacle Makers' Company, Mr. and Mrs. H. C. Kemp, and other gentlemen interested in the spectacle trade. Their presence at a meeting of chemists' assistants was accounted for by the fact that the subject under consideration that evening was a paper on

The Spectacle Makers' Company and its Optical Examination,

by Mr. S. W. Woolley, Ph.C., one of the successful candidates at the recent examination held under the auspices of the Spectacle Makers' Company.

The author, in the earlier part of his paper, traced the history of the Livery Companies, of which the Spectacle Makers' Company is one, from the time of the Anglo-Saxon "Gilds," giving their origin and uses. The distinctive dress, or livery, was adopted during the reign of Edward III. (1327-1377). One of the early companies possessing considerable interest to chemists was the Grocers' Company, which had the oversight of drugs and power "to go and assay weights, powders, confections, plasters, and ointments, and all other things belonging to the same craft." One of the bye-laws was to the effect that no one shall moisten saffron, alum, ginger, cloves, or other merchandise in order to increase their weight. In 1617 the druggists connected with the Grocers' Company separated themselves, and under the title of Apothecaries started a company of their own, and for a long period monopolised the sale of tea, coffee, and other expensive drugs. In passing, Mr. Woolley mentioned that at the Reformation Henry VIII. was particularly severe on the Livery Companies, forcing them to pay rent for their halls and properties, so much so that taxation of the companies became quite a regular source of supply to the Government. He then touched upon the wealth of the companies and the useful work they have accomplished, especially in the way of education. This brought the author to the subject of his paper, the Spectacle Makers' Company and its optical examination. The Company is not traceable previous to the granting of its charter in 1629 by Charles I., which conferred the power to exercise a superintendence over the trade in the City and liberties and within three miles thereof, this power being exercised up to the end of the eighteenth century, but is not now exercised. An Act of Common Council dated July 1, 1658, enacts that all persons using the trade of spectacle makers within the City or liberties are to become free of the Company. The minute books date from 1666, the previous volumes having been destroyed in the Great Fire of London. The Company applied for and was granted the apportionment of a livery in 1809. There are seventy-five companies in existence at the present day, and the Spectacle Makers' Company stands sixtieth in order of precedence, although it is the second in order of size, and bids fair to be the largest in a few months, there being 350 liverymen, about 700 freemen, and one honorary member, the Astronomer Royal. The Freemen of the Company have the privilege of being able to become freemen of the City of London on easy terms, while the liverymen have additional advantages, mainly social and charitable. The Company has an income of £1200 a year, of which part is trust property, and the remainder corporate property, the greater part of the income being dispensed in charity. Coming to the examination scheme, Mr. Woolley said the germ of the scheme was formulated some few years ago, but the Company proceeded with caution, so that the scheme did not finally pass the Court till January of last year. The idea was to examine and register opticians so as to protect the public from the injury done by badly adapted spectacles, and incidentally to re-unite with the guild spectacle makers and opticians. At the present time there are over 200 opticians connected with the Company. The examinations are held at the Northampton Institute, Clerkenwell, the first taking place last November. The Company has a course of instruction in progress for intending candidates at merely nominal fees. There are two official instructors who take the classes in optics and visual optics, the present instructors being Mr. Lionel Laurance and Mr. D. V. Drysdale. The three examiners are Professor Silvanus Thompson, Mr. G. Lindsay Johnson, and Mr. Paxton. The diploma of the Company is presented to the successful candidates ready framed in an oak frame surmounted by the arms of the Company. It is given only on certain conditions, the chief one of which is that the Fellows do not use mydriatics, as it is considered by the Company that the responsibility of paralysing the accommodation belongs to the oculist alone. The examination fee is five guineas, which, considering it includes the freedom of the Company and a Government stamp of £3, is very moderate. Mr. Woolley remarked that it is an examination that chemists can easily take up, as they have already acquired the theoretical portion of it for the pharmaceutical examinations and the difficulties of the practical part are not insurmountable. At the last examination there were twelve chemists amongst the successful candidates. He thought all would agree that great credit was due to the Spectacle Makers' Company for initiating its examination scheme. One could not but admire a Company which, although not a wealthy one, was spending its money freely in promoting technical education amongst opticians, which indirectly must result in benefit to the public at large. Referring to a regulation made about a fortnight ago that ladies are not eligible for the examination, Mr. Woolley was of opinion that the Company had taken a retrograde step.

The paper was illustrated by over twenty lantern slides prepared specially for the occasion by Mr. H. C. Kemp, a member of the Optical Committee of the Company, who also furnished the apparatus and attendants for exhibiting the same.

The President, after complimenting Mr. Woolley on his interesting paper, referred to the remarks in one of the medical papers recently with regard to the granting of what it called "sham diplomas" by the Spectacle Makers' Company. After what he had heard and seen that night, he thought there was not much "sham" about the diplomas. What medical men seemed to be afraid of was that chemists who possessed the diploma would trade on that to the detriment of their own profession. The prescribing chemist had become a hydra-headed monster to many medical men. He thought, however, that anyone who was successful in gaining the diploma of the Spectacle Makers' Company would have got beyond the dangerous little knowledge, and would be better able to advise their customers when to consult a physician. The movement of the Company was deserving of support by chemists, especially as they have a connection with physicians, and it would no doubt be to their benefit to be associated with the movement.

Mr. Thornthwaite asked permission to address a few words to the meeting, and after thanking Mr. Woolley for speaking in such glowing terms of what has already been done and what will be done in the future, said that the company was very anxious to serve the interests of everybody who has to do with the sale of spectacles. It was their desire that those connected with the spectacle trade should be men of intelligence and education, and chemists were most suitable for the business. The object of the first few examinations was to secure the older members of the trade who possess average intelligence, but after a time more stringent knowledge will be required, as the educational status must be made of some position. At the recent examination the highest number of marks was gained by a jeweller, but he felt sure that at the next examination the position of honour would be held by a chemist.

Mr. George Pearson, referring to a remark made by Mr. Woolley, said it was rather interesting to hear that one of the conditions imposed upon members of the Company was that they should not use mydriatics, because by doing so it might paralyse the accommodation. But he thought it was possible to use a mydriatic that would not act on the accommodation.

Mr. Thornthwaite said that, in the case of a person going in to a chemist with a bit of dust in the eye, they would not object to his using a drug. It was one of their objects, however, to prevent any possible friction between doctors and chemists. A chemist might use a drug which would paralyse the accommodation, and so lay himself open to an action for damages.

Mr. Peter MacEwan remarked that he was very pleased that the C.A.A. was the first body in connection with pharmacy to bring the matter of the Spectacle Makers' Company's movement forward. He hoped that the Company would do as much for the profession to which it is allied—pharmacy—as it did in the days when it was bled by the authorities.

Mr. C. Morley proposed a very hearty vote of thanks to Mr. Woolley for his paper. He also wished to associate with the

vote of thanks the name of the Worshipful Master of the Spectacle Makers' Company, who had honoured them with his presence, and also Mr. Kemp, who had so kindly lent the lantern and other requisites.

Mr. Pearson seconded, and the vote was carried unanimously.

Mr. Woolley, in replying, said he should like to mention that Mr. Potter, a noted collector of antiquities, was present, and had brought a curious old pair of spectacles and some very old engravings, which could be seen in the next room.

Mr. Potter expressed his enjoyment of the paper from an antiquarian point of view, and the meeting then adjourned.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

The annual meeting of this Association was held on Friday, February 3, Mr. D. Reid, President, in the chair. The minutes of previous meetings were read and confirmed and the Hon. Secretary and Treasurer (Mr. P. F. Rowsell) presented his statement of accounts which were passed, after which the meeting proceeded to the election of a President for the ensuing year.

Election of Officers.

Mr. J. Hinton Lake (Local Secretary of the Pharmaceutical Society) testified to the able services rendered by Mr. Reid during the past year, and proposed that he be re-elected.

Alderman Gadd, J.P., seconded the proposition, but Mr. Reid said he did not see his way clear to accept the Presidency for the coming year.

Mr. E. Lemmon then moved that Mr. P. F. Rowsell be elected President, and Mr. Vinden having seconded the proposition, it was agreed to unanimously.

Mr. Rowsell thanked the members for electing him and expressed his intention of doing his best to carry out the dutics which would devolve upon him as President during what he thought would undoubtedly be a very important year in the annals of the Association.

Mr. D. Reid was then elected Vice-President for the ensuing year, and in returning thanks remarked that he should be very pleased indeed to support Mr. Rowsell in the carrying out of the important duties of President during the coming year.

Mr. H. Wippell Gadd was elected Honorary Secretary of the Association, and Mr. J. W. Lake was appointed to carry out the duties of the Honorary Treasurer.

The following Committee was appointed for the ensuing year :—Alderman H. Gadd, J.P. ; Messrs. J. Hinton Lake, T. C. Milton, G. Stocker, E. Lemmon, and F. W. Vinden.

P.A.T.A. Business.

Letters were read from Mr. W. S. Glyn-Jones, Secretary, suggesting, among other points, that members of the P.A.T.A. should take every legitimate means of discouraging the sales of non-protected articles. Reference was also made to the defence scheme now being considered by the retail members of the Executive Committee of the P.A.T.A., and described in last week's *Pharmaceutical Journal* (see p. 117). A special committee consisting of the President, Hon. Secretary, Messrs. J. Hinton Lake, E. Lemmon, and G. Stocker was appointed to consider and report on Mr. Glyn-Jones' letters.

The Qualification of Dispensers.

An important discussion next took place on the consideration of Mr. Glyn-Jones' letter to the Privy Council respecting doctors dispensing, as to the desirability of this Association also sending a communication to the Privy Council in support of Mr. Glyn-Jones' action. Ultimately, Mr. Stocker proposed, and it was unanimously agreed, that the following resolution be sent to the Council of the Pharmaceutical Society :—

> That the Exeter Association of Chemists and Druggists would call the attention of the Pharmaceutical Society of Great Britain to the great danger now existing from the practice of the dispensing of poisons by unqualified persons in doctors', workhouse, and other dispensaries.

Membership of the Pharmaceutical Society.

Mr. Lake said he had received a copy of the appeal issued by the Council of the Pharmaceutical Society, urging non-members to join the Pharmaceutical Society, but he could take no action in the matter, for the simple reason that as the result of his persistent appeals to them practically all the Exeter chemists were members.

Federation Business.

Mr. R. C. Cowley, Hon. Secretary of the Federation of Local Pharmaceutical Associations, had sent an official report of the meeting of delegates to the Federation meeting held at Belfast in August last, and he also referred, among other matters, to the suggestions for a draft Pharmacy Bill, adopted last week by the Council of the Pharmaceutical Society. Mr. Cowley had also sent a reprint of an address read before the Manchester Pharmaceutical Association by Mr. J. Rymer Young, of Warrington, which is considered to be the best exposition of the Pharmacy Act of 1868 that has yet appeared.

Concluding Business.

The meeting subsequently discussed at some length the programme of the Association for the coming year. It was suggested that the annual dinner should not be held this year, but that an excursion should be arranged in the summer instead. Finally, it was decided to defer the consideration of the subject until another meeting.—On the proposition of Mr. Lemmon, a unanimous vote of thanks was accorded the retiring officers for their services during the past year, and the Chairman having returned thanks, the meeting concluded.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held at the Dewsbury Town Hall on Monday, February 6, Mr. A. Foster, President, in the chair.

Correspondence.

The Secretary read a letter from C. A. M. W. A. L. in reply to a resolution passed at the last meeting and stating that the directors had taken counsel's opinion on the question raised by the Dewsbury Association, and counsel ruled that C. A. M. W. A. L. was bound to supply any chemist shareholder, and that he could order goods to be delivered wherever he liked. The letter went on to say that if the directors were to stop the supply to stores, those stores would most likely become manufacturers and cut the price still lower, as Messrs. Boot, Ltd., were doing in the Midlands.—A letter was also read from Mr. Glyn-Jones along with copies of the November *Record*, which gives the defence scheme in full.

Mr. Gledhill reported receipt of a copy of the rules of the Federation of Local Pharmaceutical Associations, and several other communications from Mr. R. C. Cowley. One of these was dated February 3, and with it was enclosed a copy of the suggestions for a draft Pharmacy Bill.

Local Secretaries.

Before dealing with the correspondence, the Chairman proposed that Mr. R. Gledhill be nominated as one of the local secretaries for the Pharmaceutical Society, and that the district be divided, Mr. W. Stead to take Cleckheaton, Liversedge, Heckmondwike, Mirfield, and Birstall ; and Mr. Gledhill to take Batley, Ossett, and Dewsbury. In Mr. Stead's district there would be nine members, and in Mr. Gledhill's twelve.—This was agreed to.

Chemists' Defence Fund.

A discussion then took place with regard to the Chemists' Defence Fund, and Mr. Stead read a letter by Mr. W. Johnston, of Brixton, which appeared in the *Pharmaceutical Journal* last week. Eventually the Chairman proposed a resolution expressing sympathy with the scheme, but that no further action be taken until the matter is further developed.

Mr. J. Walker seconded the motion, which was passed unanimously.—The question of

Dispensing in Surgeries

was next introduced, the Chairman observing that they were now on very touchy ground. After a long letter had been read from Mr. R. Broadbent, of Batley, against dispensing by doctors, a discussion took place on the subject, and

Mr. G. Walker finally proposed that the following communication be sent to the Clerk of the Privy Council :—

> Sir,—The Dewsbury and District Chemists' Association desires to draw the attention of the Privy Council to the recent fatality to a patient at Heaton Norris, caused by the dispensing of an excessive overdose of morphia by an unqualified dispenser to a medical man, and whereas in chemists' shops the keeping, sale, and dispensing of poisons are hedged about by certain restrictions for the safety of the public, and there are no such restrictions in the case of

doctors' private surgeries or dispensaries, the above Association of chemists would urge that either all medical men who do not write prescriptions be required to personally dispense all medicines, or employ a dispenser who holds the Minor qualification of the Pharmaceutical Society, as the Association considers the assistants' certificate of the Apothecaries' Company not a sufficient legal qualification.

Mr. Day suggested that the last part of the proposed resolution should be struck out. The assistant's certificate of the Apothecaries' Company was considered by many to be a sufficient legal qualification.

Mr. Walker then alluded to the paragraph which appeared in the *Pharmaceutical Journal* last week with reference to the dispensing of medicines at Arbroath Infirmary, and said the question had been raised there by a letter from Mr. James Jack, who said just the opposite of what Mr. Day contended.

After a lengthy discussion Mr. Stead seconded the motion, and Mr. Day then moved as an amendment that the latter part be struck out. The amendment was defeated, and the original motion was agreed to.—It was decided to send copies of the resolution to the Privy Council, the British Medical Association, and the Pharmaceutical Society.—With reference to the suggested

Amendment of the Pharmacy Act.

Mr. Stead said he thought it would be best not to do anything until they saw what the Lord Chancellor thought about it. He did not imagine they would get all that was set down in the proposed draft of the new Bill. There would be tremendous opposition to any alteration of the "Widows' Clause" from within their own ranks, and there were other clauses that might require modifying. He would, however, move :—

> That the action of the Council of the Pharmaceutical Society, in its proposed further Amendment of the Pharmacy Act, 1868, commands the sympathy and approval of the members of this Association, and that the Secretary be authorised to assure the said Council of the utmost endeavour and support of this Association in the event of the proposed Bill being proceeded with, reserving to itself the opportunity of suggesting any such modifications as may appear to it desirable.

If that were passed as a resolution, it would leave it open to them to criticise the Bill, or suggest that it be modified as they deemed desirable. It was proper that they should signify their approval of the action of the Pharmaceutical Society in stepping so promptly into the breach.

Mr. Gutteridge seconded the proposition, and it was passed unanimously.

Arrangements were then made for the annual dinner to be held on February 21.

LIVERPOOL PHARMACEUTICAL STUDENTS' SOCIETY.

A well-attended meeting of this Society was held at University College, Liverpool, on Thursday evening the 2nd instant, Mr. R. C. Cowley, President, in the chair. Messrs. Birkett, Bowers, Davies, Featherstone, Griffiths, Murray, Parkinson, and Plumtree were elected members.

Some interesting communications were brought forward by various members. Mr. P. H. Marsden had had some trouble with a mixture containing bicarbonate of soda, glycerin of borax, and sulphate of soda, which effervesced strongly in whatever manner it was compounded. It was interesting that whilst bicarbonate of soda, sulphate of soda, borax and glycerin separately were none of them acid, they should become so when mixed.

Mr. Wyatt said that the acidity came from the action of the glycerin on the borax, this latter, as shown by Mr. Dunstan some years since, being split up into sodium metaborate and borate of glyceryl, and the borate of glyceryl giving with the water present glycerin and free boric acid. This boric acid would unite with the sodium bicarbonate, and hence the effervescence, which could not be avoided. The best way with such mixtures was to use hot water so as to hasten the reaction and get rid of the carbonic acid gas as soon as possible.

Mr. A. H. Morgan asked what caused boric acid suppositories made with the glyco-gelatin base to become opaque on standing a day or two. The same change had been observed by Mr. H. B. Morgan in the glyco-gelatin pastilles of the Throat Hospital Pharmacopœia when made with chlorate of potash.

As regarded the chlorate of potash, Mr. Wyatt was of the opinion that the opacity was due to crystallisation of the salt. Boric acid in pessaries had given him similar trouble to that mentioned by Mr. A. H. Morgan, and he thought that, whilst crystallisation of the boric acid from its solution in glycerin might be partially the cause, it was probable that the boric acid has some action on the gelatin itself, as he had found it necessary to use double the quantity of gelatin when making up such pessaries, owing to the addition of the boric acid causing liquefaction. This opacity went right through the mass and was not confined to the exterior alone.

Mr. P. F. White then read out for the members' benefit a few prescriptions he had had passing under his notice of late and which he considered worthy of comment. The first was—

℞ Olei Morrhuæ ..... ʒi.
Liquor Potassæ ..... ʒss.
Mucilaginis Tragac. ..... ʒss.
Aquæ Chlorof. .....ad ʒii.
Misce fiat emulsio, et adde
Syrupus Ferri Phosp. Co. ..... ʒi.

This went well until the syrup of phosphates was added, when the whole of the oil at once separated.

The second was—

℞ Creosote ..... ♏i.
Ol. Terebinth ..... ♏ii.
Misce fiat pilula.

This was dispensed in a capsule. The third contained phenol, gr. iii., made into a pill. It was massed and divided into two pills.

The members thought that the liquor potassæ should have been omitted in the emulsion, as it was the cause of the separation on the subsequent addition of the acid syrup, that the creosote and turpentine pills were best dispensed in capsules, and that the phenol pills might have been disposed of in the same manner, first dissolving the phenol in oil before filling it into the capsules so as to avoid its irritating effect on the stomach.

The receipt of a communication from the Hon. Secretary of the Federation of Local Pharmaceutical Associations was announced, relative to various topics emanating from the Plymouth, Devonport, Stonehouse and District Chemists' Association. A copy of the communication has already appeared in this Journal on February 4.

In introducing Mr. T. H. Wardleworth, F.L.S., who was to give a short lecture on

Plant Cells,

the President said that he knew how the members would appreciate the lecturer keeping his engagement, knowing as they did the sad bereavement to which he had recently been subjected.

The remarks of Mr. Wardleworth were illustrated by some capital slides from plates thrown on the screen with an electric lantern. Unfortunately the artists responsible for the illustrations appearing in most botanical works seem, the lecturer said, to devote too much of their talent and energy to producing a picture rather than a true representation of the sections or organs illustrated. This became the more evident upon viewing the various cells under the microscope, when one would find one's notions received from books subjected to considerable alteration. The tenor of the lecture was the enforcing of the absolute necessity of using the microscope in one's botanical studies, for without its aid the beauty of botany was considerably curtailed and its usefulness from a practical point of view rendered of less moment.

At the close of the lecture a vote of thanks was passed to Mr. Wardleworth, who subsequently exhibited a series of specimens under the microscope.

Mr. H. Wyatt, Jun., then gave a description of several difficulties he had observed in prescriptions he had dispensed during the year (see page 125).

A good discussion followed, in the course of which Mr. Pierson said that ointment No. 15, a modified Lassar's paste, had never given him any trouble to dispense, and that, though zinc salicylate might be formed after the ingredients had been mixed, the matter was to a large extent more theoretical than practical, and the method proposed entailed the expenditure of more time than the circumstances of the case demanded.

Another member took exception to the use of mucilage in mixture No. 11, saying that the actual amount of alkaloid present was so small that it was questionable whether it would be precipitated from so dilute a solution.

In reply, Mr. Wyatt said Mr. Pierson was not correct in regarding the ointment No. 15 in the light of ordinary Lassar's paste, for that contained oxide of zinc, salicylic acid, and paraffinum molle, and whilst ointment No. 15 had, in addition, hydrous wool fat, an ingredient of considerable importance, for to the water contained therein the reaction between

the zinc oxide and salicylic acid was due. It was an axiom in dispensing that if a reaction was likely to take place between two bodies it was best to hasten this and have it complete before the compound was placed in the customer's hands, and this was his idea in following the method proposed. The mixture containing the solution of perchloride of mercury and solution of strychnine gave no signs of precipitation when first made, as he distinctly stated during his remarks, and the mucilage was added for fear there should be slow precipitation after the mixture had left his hands. It was by no means a small matter, and even the most captious critic could scarcely take exception to the use of a "little harmless necessary mucilage."

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held at the Old Cock Hotel on Thursday, February 2, Mr. John Patchett in the chair.—A vote of condolence was passed to the President, Mr. G. M. Cobb, on the loss of his daughter, and a wreath was sent from the Association.—On the motion of Mr. C. Fielding, a resolution was passed approving of the new poison regulations.

The Secretary, Mr. H. C. Brierley, read to the meeting various extracts from Mr. J. Rymer Young's pamphlet on the Pharmacy Act, drawing special attention to the paragraph on "Misuse of Chemists' Titles." The pamphlet was stated to be worth the attention of every pharmacist, as a clearer interpretation of the Pharmacy Act, 1868, had never been written.

Mr. C. Fielding, local secretary of the Pharmaceutical Society, presented his quarterly report, which showed that he had been very energetic in the discharge of his duties.

Dissatisfaction was expressed by the members at the action of Messrs. Hood in putting up a 13½*d.* size of their sarsaparilla which was about two-thirds the size of the 2*s.* 9*d.* bottle. Complaints had been made to several chemists by consumers. It was hard on the chemist who was left with a good stock of 2*s.* 9*d.* size, as he would have difficulty in disposing of them.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, February 1, at the Society's House, 67, Lower Mount Street, Dublin, the President, Mr. R. J. Downes, in the chair, and the other members of the Council in attendance being the Vice-President (Mr. Beggs) and Messrs. Wells, Sullivan, Porter, Kelly, Grindley (Treasurer), Professor Tichborne, and Dr. Walsh.

On the motion of Professor Tichborne, seconded by Mr. Porter, the following gentlemen were appointed a Committee to consult with the referee (the President) in relation to the publication of the next edition of the British Pharmacopœia :—Messrs. William Allen, George Brown, Charles Evans, Smith, and the following members of Council: Messrs. Wells, Kelly, Dr. Walsh, J. J. Bernard, and Michie, together with the President and Vice-President (*ex-officio*).

A letter dated January 4 from the Secretary of the Privy Council asked whether a three months' course of lectures in botany and materia medica, with a minimum attendance of twenty lectures of one hour each, which is proposed by an amended regulation of the Council of the Society, was a reasonable and possible requirement for the other four schools which are recognised by the Society.

Mr. Ferrall, the Registrar, read the reply which he had been directed to send to the above, which stated that the course referred to was reasonable and possible for the other schools; that the schools had been recognised on the understanding that the minimum should be maintained; and that that understanding had been as a rule loyally carried out.

A letter from Mr. T. T. Keany, 202, Camberwell Road, London, asked the Council to accept a declaration of six months' attendance at lectures in the South London School of Pharmacy.

President: We cannot do that. We have refused to add to our list of recognised schools.

The President, referring to the Reports of the Examiners, mentioned that six candidates out of fifteen had passed for the Licence; that one registered druggist had passed and one had failed; that five assistants had presented themselves, all of whom passed; and that at the Preliminary examination ten passed out of thirteen.

Other business having been disposed of, the Council adjourned.

LETTERS TO THE EDITOR.

The Suggestions for a Draft Pharmacy Bill.

Sir,—May I ask space from you for an open letter to the Council and members of the Pharmaceutical Society of Great Britain? I am very loth to do so, but the plea of urgency will be manifest, and sufficient to justify me. I have read carefully and with interest the report of the meeting of your Council in the *Pharmaceutical Journal* of February 4, and particularly the report of the Law and Parliamentary Committee which was adopted. I confess to the weakness of being disappointed when I found that Ireland and the Irish were as completely ignored as if the "Union" was already repealed. As an Irish leader I cannot help noticing this, while recognising to the full all that another Irishman has done for the bringing forward of the question in Great Britain, which was properly emphasised by all the speakers. No doubt we all esteem our own methods and ideas as perfect, and I may err in my estimate of those which have been chosen and adopted by the Council of the Pharmaceutical Society of Ireland; but assuming a better has been found, I think it is hardly friendly to adopt that better one, and leave us digging away in our own trench while you are pursuing an improved plan. The Pharmaceutical Society of Ireland has made one point of attack and concentrated the attack, so that we obtained an important expression of opinion and even an attempt to meet it, in the House of Lords. This was due, I unhesitatingly claim, to the action of the Pharmaceutical Society of Ireland, for there was nothing in the Bill of the Pharmaceutical Society of Great Britain to promote it. On the contrary, it was a surprise to find it could not be fitted on that Bill. It was the action of the Pharmaceutical Society of Ireland, through a member of the Council, that brought the General Medical Council to take action as it has done, and to endorse and emphasise our complaint. That the Council has endeavoured to draw a line between the professional and the trader is not unnatural, but that course has been strongly protested against by the Pharmaceutical Society of Ireland, which has claimed that we must stand or fall together, that the same law must apply in one case as other; but as regards the two societies, it is fatal to have them aiming at different objects and adopting dissimilar tactics. If the lead of the Irish Council is not good enough to follow, at least let a lead be given that will be worth its while to follow. The aim of the Irish Council is to break down the ruling of the House of Lords, and to set up the barrier of the "lawful purpose" which exists in the Companies Acts, the amendment of the Companies Acts being under consideration of the Government. The Pharmaceutical Society of Great Britain goes in for a Bill to get exclusive right of compounding prescriptions as against the public in general and the medical profession in particular. I ask, is this attainable, and will Parliament, which will not place in the hands of the medical profession the exclusive right of giving advice, be likely to bar the public from mixing their own prescriptions? Would it not be wiser for the present to keep to the point "keeping open shop for the purpose of selling, retailing, and compounding poisons and medical prescriptions"? After this one point, which is the crux in the matter of Limited Companies, is settled, the dispensing in public institutions could be unitedly attacked; but it is madness to mix it up with the shopkeeping question at the present time. We have laid bare a scandal, the Government say to us, What remedy do you propose? We reply: It should be stopped by amending the Companies Acts so that they should not be applicable to professions or callings for which educational qualification is necessary, unless the members are all qualified. They ask, is the English Society interested, and do its members agree? We say Yes. We are told there are great interests opposed, and if the matter is taken up it means a big thing for the United Kingdom, which cannot be treated as a local matter. The next thing we learn is that the Pharmaceutical Society of Great Britain has adopted a line of its own, and want a Bill to include additional privileges. Will not the Government play one against the other? Will they not say, Here is a scandal you both complain of, and you come to us, one asking one remedy and the other another? In the end we will all be left to work for separate Acts, or sit down biting our fingers, or perhaps worse, saying to each other, You did it. I appeal to the Council and members of the Pharmaceutical Society of Great Britain not to mix up ambitions with the practical question now before us. The above was written in the course of last week, but it

was considered courteous to allow time for a reply from the President of the Pharmaceutical Society of Great Britain to a letter addressed to him. The report in this week's Journal renders further delay unnecessary. I hope I may be able to congratulate the Pharmaceutical Society of Great Britain on the passing of its proposed Act. I am conscious the steps of the Council cannot be retraced, and that the publication of this letter only serves as a protest.

67, Lower Mount Street, Dublin, February 4, 1899.

Robert J. Dowmes,
President, Pharmaceutical Society of Ireland.

Sir,—As a qualified and struggling chemist and druggist of upwards of thirty years' standing, permit me to say how delighted I have been to read the suggestions in your last issue for a draft of a new Pharmacy Bill, and at the prospect at last of better days for the poor qualified chemist. The Pharmaceutical Society is now stripped for the fight, and I feel confident that it will receive the entire support of every well-wisher of the trade and of all right-thinking persons outside. Every man who has suffered from the illegitimate competition of bogus and unqualified pretenders should come forward at once and leave no stone unturned until the present state of matters is put an end to. There must be no compromise and no nonsense about vested interests. How do the legal and medical professions treat quacks and pretenders, and do we ever hear of cash lawyers or cash surgeons? No such question as vested interests is allowed to come in here when the culprit is caught, no matter how long he may have been at the game. Because these companies have been acting illegally for so many years, we now hear some of our would-be advisers whining about their vested interests when they find that at last they are about to fall into the hands of the policeman. As well might the thief who had been robbing me and dipping his hands into my till for the past thirty years talk about his vested interests. The thing is preposterous, and the Pharmaceutical Society is taking at last the proper steps to "scotch" the mischief. Let the unqualified trader make up his mind at once that we are in earnest in seeking, for those who have gone to expense and complied with the law by becoming qualified to handle the articles and to perform the work our trade demands, a reasonable chance of making a living. The unqualified have got to go, that is certain, and the sooner they realise that fact the better. The Widow's Clause is fairly met in the new draft. Twelve months is ample time to dispose of a business, if it is worth selling; if it is not, the greatest kindness in the majority of cases would be for the widow to sell off for what it would bring and shut the shop—so saving herself a world of worry and trouble caused by constantly changing managers. To refer again to the legal and medical professions, what time may I ask, are their widows allowed in these cases to dispose of the practice? None at all; and if no qualified man is ready to step into the dead man's shoes at once, the practice is scattered to the wind in less than a month. Yet we do not hear any complaint here. My advice to my fellow chemists would be then to go tooth and nail for the proposed Bill. When it becomes law they will have a much better chance of earning a decent living and of making some provision for those near and dear to them when their life's work is over, either by means of insurance, endowments, or by any other course which may suggest itself to the honest worker.

South Shields, February 4, 1899. Alex. Ellis.

Sir,—Will you kindly afford me space in your columns for the expression of a few thoughts suggested by the perusal of the suggestions for the Draft Pharmacy Bill adopted by the Council at its meeting on Wednesday, February 1?

Clause 1 would be an act of simple justice; opposition would have so little ground to stand on that it would not prove very formidable. Companies would lose their right to the title "Chemist and Druggist," but the clause would not prevent them employing a qualified manager and conducting the drug department in his name.

Clause 2 is impossible as it stands; the attempt to confine the sale of "Medicines" to registered chemists would arouse the opposition of grocers, drug stores, companies, herbalists, co-operative societies, etc., and this would be fatal to the Bill. Even the most sanguine pharmaceutical reformer would never dream of accomplishing such a sweeping revolution. A further difficulty would arise in the definition of the word "Medicine." What about syr. ferri phosph. co., cod-liver oil, malt extract, etc., are they medicines or foods?

Clause 3 is a sensible one. The sentence "the seller . . . shall be the person on whose behalf the sale . . . is performed" is excellent. The lesson taught by the Wheeldon case has not been forgotten, and fortunately the effect of this sentence is confined to clause 3; if it applied also to clause 4, then doctors and veterinary surgeons could employ any persons, however ignorant, to mix (I will not say dispense) the medicines. It is right that medical men should be personally exempted from the provisions of the Bill, but they should not be permitted to have their dispensing done by unqualified people without the personal supervision of a qualified man.

Clause 5 calls for serious thought. The difficulty of legislating for a "mongrel" vocation is here keenly felt. Pharmacy is a profession, yet not wholly a profession; it is a business, yet not wholly a business. To treat it as a profession only would be unjust; to treat it as a business only would open the door for illegal practices. When a professional man dies, his working capital (*i.e.*, his brains and skill) dies with him, but, if he has been a wise man, he will have invested the fruits of his labours in some security outside of his profession for the benefit of his widow and children. With the pharmacist the case is different; brains and skill are not his only working capital—he needs money also; and very often all the fruits of his labours are absorbed by his business, so that at the time of his death, especially if that be premature, his business is all that is left for the support of his widow and children, and if its full value is to be realised, it must be sold as a going concern. If Clause 5 becomes law, the business would have to be disposed of within twelve months, and intending purchasers would quietly wait until the year had expired, when a forced sale would have to be made, and the business sold at a price considerably below its real value. The Clause is a compromise, but a very unsatisfactory one, and should only be accepted if it is conclusively proved that no better one is available.

With clause 6 I think no one will disagree. From the foregoing it will be seen that I look upon clauses 1, 3, 4, and 6 of the official suggestions as being practicable; I should like to suggest that in any future legislation provision should also be made for an extension of the Poison Schedule, and also for a statutory enactment that all medical prescriptions shall be dispensed by a registered chemist, or under the personal supervision of a registered chemist. These are reforms demanded by considerations for the public safety.

One of the weak points of pharmaceutical legislation is the fact that the Pharmaceutical Society has no control over registered chemists. If it were possible to make membership of the Society essential to carrying on business or managing a business, and if that membership could be made forfeitable in the case of a member transgressing any bye-laws sanctioned by the Privy Council, then the need for a statutory widows' clause would be abolished, and the practice of pharmacy would be placed on a more satisfactory basis. Whether this can or cannot be accomplished I leave to more experienced persons than myself to decide.

Nottingham, February 7, 1899. William Gill.

Sir,—If our law agents consider it necessary for us to drop the "Widows' Clause" there is nothing more to be said. It will be a very great sacrifice, however. There are a great many chemists throughout the country miserably poor, and it will be a considerable time before they are able to recuperate, even if their condition is ameliorated. Meantime many of them will die and their widows and orphans will be practically left without support. Pharmacy, however, has reached that pass in this country at which no necessary sacrifice is too great to be made in order that the field may be cleared of unqualified competition. I quite recognise the logical aspect of the "Widows' Clause" question. I have said from the beginning that the President must avail himself of the best legal advice he can get, and if he is assured that in order to reach success in legislation this clause must go, then it must go. I will certainly be no party to opposition from within. We are not in search of ground upon which to plant an opposition tent, but we are in search of ground upon which we can all stand united and strong, with our front to the enemy. We mean to fight the enemy and we mean to beat him, but it will only be good generalship if we manage to beat him with as little loss to ourselves as possible. I am of opinion that we are all over-estimating his strength. We must never forget that whatever the legal aspect of a case is in this country, it is weak if its moral aspect

is not right. The moral position of these unqualified men is, in my opinion, rotten, and their whole case will crumble down like an apple of Sodom when it is touched. We chemists have learned much during the last five years, but the community has learned more, and the whole position is fairly well understood now. I shall be much disappointed if we do not find far more sympathy in the House of Commons than any of us expects. Meanwhile, I heartily commend the spirit of our President and the men by whom he is surrounded in the Council, in that they have taken up this matter with so much vigour, and I trust that every chemist in the country will follow them with loyalty in the path which they select in accordance with legal advice. Although I have elsewhere remarked upon the difference in principle between a widows' business and a company business, I had no thought of going over to the opposition, and I am almost sorry that, after all I have written regarding fresh legislation in the trade journals and in the lay press, anybody should have thought so hardly of me.

Dumfries, February 6, 1899. James Reid.

Sir,—In the draft Pharmacy Bill, page 106 of the *Pharmaceutical Journal*, no provision is made for the training of youths who desire to enter our trade. The Medical Council, whilst objecting to the employment of unregistered men as assistants, makes exceptions for those who are students up to a certain age, and as students in our business are examined in the art of dispensing it is natural that they should have some experience. How is this experience to be gained if all unqualified persons dispensing or compounding a prescription are liable to a fine of £5? It seems to me that in Section 4 there should be a clause exempting students duly apprenticed to the principal or owner of the business, who must be a registered chemist, so long as they are under the immediate supervision of the principal, and, further, to give them the opportunity of continuing their studies. If not fortunate to pass their examination immediately on attaining the age of twenty-one years they should after being loose of their apprenticeship be registered as "students" or improvers, and be allowed to continue their studies with properly qualified men until they are twenty-five years of age. If they fail to pass before that age then it is fair to consider them incompetent for the trade. I have no desire to enter upon a factious opposition, but unless some such condition is allowed I shall feel compelled to oppose the measure.

Leeds, February 6, 1899. Edwin Yewdall.

Sir,—I am sure that the suggested Pharmacy Bill will meet with the approval of a large majority of our craft. Those that do not approve—well! "the least said the better." May I make a few additions to the suggestions?

1. Make every chemist a subscribing member of the Society.
2. No branch shops.
3. Allow offenders until the end of the year to settle up.
4. Exemption from jury service.

Let us work with the kindred professions, let the doctor, dentist, "vet," and chemist all stand together to get the Bills through. Let our local secretaries call meetings and confer with the other professions who are pushing Bills forward, hold mass meetings of the four professions, and send resolutions to the members who represent them. Let our motto be "Medicines for Chemists." The results of victory are worth fighting hard for. Let us fight is the prayer of

Wolverhampton, February 6, 1899. J. H. Coleman.

Schimmelia Oleifera.

Sir,—I have been favoured by Mr. W. B. Hemsley, F.R.S., Keeper of the Royal Herbarium, Kew Gardens, with the following note, which seems of sufficient interest to publish as an appendix to my paper on the West Indian sandal wood plant. He says:—"I am much interested in your *Schimmelia* because I made it out to be a new genus twelve years ago. But as I had not the fruit before me, I hesitated to describe it as such, and placed it at the end of the order. The specimens I examined were from Mugeres Island, Bay of Honduras, collected by G. T. Gaumer in 1886, and presented to Kew by F. D. Godman, F.R.S. We have also a specimen collected at Matanzas, Cuba, by Rügel (No. 76), in 1849. I think, perhaps, it belongs to the Aurantiaceæ, which is certainly allied to *Schimmelia*, but it has simple leaves. There is an imperfectly known Mexican genus, *Stauranthus perforatus*, Liebm." Mr. Hemsley has thus shown that the plant *Schimmelia* has remained undescribed for fifty years, owing to the fruit being until now unknown, and has brought out the interesting fact that it occurs also in the West Indies, and has, therefore, a right to the name West Indian applied to the oil in commerce. On one of the specimens in the Kew Herbarium the collector has written "Flowers white," thus confirming my supposition as to the colour of the flowers.

Sevenoaks, February 7, 1899. E. M. Holmes.

Castor Oil and the B.P. Tests.

Sir,—The tests of the new Pharmacopœia have been the subject of some correspondence in your columns at the hands of Messrs. Thursfield, Lucas, and Coull, the first named having called attention to the fact that he was not able to obtain samples of Indian or Italian castor oil that complied with the official carbon bisulphide and sulphuric acid test. The following are my experiences of the various tests:—

Brit. Pharm. 1898 Test.	Observation.
Specific gravity 0·950–0·970	Correct.
Solubility in equal volume of absolute alcohol	Correct.
Solubility in five times its volume of alcohol 90 per cent.	Correct.
Equal volume of castor oil and petroleum spirit do not yield a clear mixture if kept at 60° F.	Correct.
Three C.c. shaken with equal volume carbon bisulphide and 1 C.c. sulphuric acid should not become brown	Not satisfactory.

Sulphuric Acid Test.—The wording in the United States Pharmacopœia of the similar test is that the mixture shall not become "blackish-brown," and not as in the British Pharmacopœia, "brown." Upon this difference of wording the matter hinges. Neither English, Italian, French, nor East Indian castor oils can be strictly said to answer this test as worded, but the difference in reaction caused by the addition of 5 per cent. of cottonseed oil to any of the oils is most marked. In the presence of even this proportion of cottonseed oil the mixture at once assumes a nearly black-brown colour. It is not of course likely that any public analyst would condemn castor oil on this colour reaction alone, without the determination of the saponification equivalent. All the different varieties of castor oil that I have examined, although giving a brown colour with sulphuric acid and carbon bisulphide, have, notwithstanding, the saponification equivalents which have been stated by Alder Wright to be those of pure castor oil.

	Percentage of KOH Required for Saponification.
Alder Wright	17·6 to 18·15
English	17·9
East Indian	18·1
French	18 0
Italian	18·15

There appears to be no question, therefore, that castor oil of which the purity, as ascertained by other tests, is undoubted, may yet give a slight brownish colour on the application of the sulphuric acid test of the new British Pharmacopœia. It is suggested that in reprints the wording be altered from "brown" to "blackish-brown," and possibly what might be more satisfactory the percentage of caustic potash required for saponification added, viz., 17·6 to 18·15.

Southwark, London, February 7, 1899. John C. Umney.

A Request.

Sir,—May I, through your columns, request agents, manufacturers and others to favour the Edinburgh District Chemists' Trade Association by sending a specimen of any bottles, pots, etc., which have from time to time been patented or devised for the purpose of keeping or selling poisons? A discussion is to take place at our next meeting, on the 21st inst., on the best way to carry out the poison regulations recently adopted by the Pharmaceutical Society, and it has been thought that a small exhibition of such bottles, etc., would prove both interesting and useful. Particulars as to sizes, etc., might accompany specimens, and all bottles, etc., will be duly returned, if desired, after the meeting.

Claude F. Henry, *Hon. Sec.*
Edinburgh District Chemists' Trade Association.

1, Brandon Terrace, Edinburgh, February 7, 1899.

Bottles for Metric Prescriptions.

Sir,—Mr. Alfred Roe's information in your issue of January 28 as to the practice obtaining upon the Continent is timely. I now feel it may be taken for granted that 5, 10, 15, and 30 C.c. will be the most suitable quantities for an English prescriber to adopt as doses. As to the bottles, all the sizes he mentions may be convenient upon the Continent, but it must be remembered that there all liquids, even the vehicle, are weighed in, so that the prescriber never knows exactly what the volume of the finished

mixture will be, although he orders his dose by volume! Nine times out of ten the mixture will not exactly fill any of the bottles. In England mixtures are always made up to a stated regular volume, so that the bottles are always sent out exactly filled and the patient takes an aliquot part. To gain this end it is perfectly plain that the sizes of the bottles must be simple multiples of 15 and 30, and the only ones meeting this requirement are those holding 45, 60, 90, 120, 150, 180, 240, 300, 360, 480, 600, and 960 C.c. (with four smaller ones of 5, 10, 15, and 30 C.c. capacity). Bottles holding 24, 125, 155, 250, 310, or 500 C.c. would be exceedingly awkward for prescriptions made up according to English methods, none of them would hold an exact number of medium or large doses. For instance, a 500 C.c. bottle will hold sixteen large doses with two-thirds of a dose over, a 125 C.c. bottle will hold eight medium doses and a portion of another! Litre, half-quarter and one-eighth litre bottles will doubtless be used for numberless purposes, but they will not be convenient sizes for mixtures. Mr. Roe cannot have studied the tables you published last February, or he would see that a fluid ounce is only 28·4 C.c., not 31¼ as he stated. The B.P. 1898, also gives 28·4 C.c.

February 7, 1899. DOUBTFUL (169/37).

STICKY FLY PLATES.

Sir,—In reply to your inquiry through the columns of the *Pharmaceutical Journal*, we beg to state we are manufacturers of Sticky Fly Papers, and shall be glad to submit samples and to quote terms on application stating the quantities required.

Hull, February 4, 1899. LOFTHOUSE AND SALTMER.

*** What our correspondent asked for was the address of the makers of "plates" covered with a sticky substance. [ED. *P.J.*]

CHEMISTS' ASSISTANTS' ASSOCIATION.

Sir,—Can you kindly give the enclosed notice prominence in this week's issue of the *Pharmaceutical Journal?* A paper on the "Preparation, Properties, and Administration of Antitoxins" will be read before the Chemists' Assistants' Association, at 73, Newman Street, W., on Thursday, February 16, by Dr. R. T. Hewlett. Dr. Hewlett is Bacteriologist to the Jenner Institute of Preventive Medicine, and Demonstrator of Bacteriology at King's College, and his paper will doubtless be extremely interesting. The President and Council of the Association will be glad to welcome any chemist interested in the subject. The meeting will commence at 8.45 p.m. for 9 p.m. punctually.

73, Newman Street, W., F. W. GAMBLE, *President,*
February 6, 1899. *Chemists' Assistants' Association.*

CREOSOTE AND LIQUORICE PILLS.

Sir,—I wish to thank Mr. Upsher Smith for his note *re* creosote pills, with which I have been most successful, having made two gross of pills each containing one minim last week. I have since tried "guaiacol," using same formula. This also is good. For Miss Spencer's benefit I may state that—1. The creosote was colourless; 2. That s. g. was 1·088; 3. That it was soluble in glycerin; 4. That I used decorticated liquorice.

Knowle, February 7, 1899. A. H. WINDRIDGE.

Sir,—Miss R. Kathleen Spencer's difficulty in dispensing creosote pills by my modification of Agosti and Delhaxhe's formula arises from the fact that she did not use the creosote of the B.P., 1898. With your permission I will reply *seriatim* to her inquiries and add a few pertinent remarks. Decorticated liquorice root, in powder, was used. I have not heard of the use of the whole root, except for the preparation of horse and cattle medicines and cheap compound liquorice powder. It is not in vogue as a pill excipient. Creosote (B.P., 1885) will not form pills by the method in question; the mixed ingredients possess little or no cohesion, even when the proportion of water is doubled, as in Delhaxhe's formula, or when it is quadrupled, as in the original formula of Agosti. With regard to Miss Spencer's choice of glycerin as an excipient, it is difficult to see why the fact that creosote is soluble in glycerin should suggest its use. Glycerin is a good excipient for mucilaginous powders, but not for another liquid like creosote. Turning to the creosote itself, the B.P. statement is correct; it *is* soluble in glycerin. I have ascertained this by experiment, and Messrs. Morson confirm my result. The B.P., 1885, creosote, however, will not mix with glycerin. The old and new official varieties are very different in chemical constitution, as may be seen by reference to an excellent article on the subject in the Students' Column of the *Pharmaceutical Journal* ([4] 7, 468). That of the present B.P. is derived principally from beechwood and consists mainly of guaiacol, b.p. 200° C.; the creosote of the 1885 B.P. consisted principally of creosol, b.p. 221° C. The greater solubility of the official product may be well seen in the new mistura creosoti, in which there is now no need to add acetic acid as a solvent. In reference to Morson's statement, quoted in Attfield's 'Chemistry,' that pure creosote is unaffected when mixed with an equal volume of commercial glycerin, of course, it is difficult to say what pure creosote really is. I should call B.P. creosote the only variety permissible in physicians' prescriptions, unless otherwise ordered. Morson's creosote is not miscible with glycerin. In drying liquorice root the temperature should not rise above 140° F. or the starch will be coagulated. A current of warm dry air will be found sufficient. As Miss Spencer suggests, the dried root should be used in making pharmacopœial galenicals. This is implied in the Pharmacopœia, where it speaks of the root being longitudinally wrinkled. It would be well if the word dried were inserted. I trust that this information will be found sufficiently full to enable Miss Spencer to obtain success with the formula which she has done me the honour to try.

17, Bloomsbury Square, W.C., F. A. UPSHER SMITH.
February 7, 1899.

*** The pills submitted for examination are excellent specimens of the dispenser's art; in fact, better ones could not be desired. [ED. *P.J.*]

ANSWERS TO QUERIES.

PINE EMULSION.—Kindly explain what is the nature of the preparation you require. [*Reply to* JEANETTE.—22/26.]

DRUGS USED HYPODERMICALLY.—You can easily find the information in the 'Extra Pharmacopœia.' [*Reply to* S. H.—23/9.]

BOTANICAL.—Your first specimen is certainly *Hypnum cupressiforme*, and probably var. *elatum*. The second is *Brachythecium albicans*. [*Reply to* W. H. M.—23/11.]

GENTIAN.—It does not contain tannin. The bitter taste is due to a glucoside—gentiopicrin. [*Reply to* C. B.—23/15.]

SEEDS.—They are annatto seeds, obtained from *Bixa orellanæ* (Bixaceæ). [*Reply to* S. H. E.—23/17.]

BOTANICAL.—The specimen sent is obtained from *Alnus glutinosa*, the bark and leaves of which possess diuretic properties, and have been used in cases of malarial fever. [*Reply to* A. J. R. S.—23/4.]

PHENALGIN.—We have no information respecting this article except that it is claimed by the makers to be ammonio-phospho-phenylacetamide and to possess antipyretic, antimalarial, and hypnotic properties. It is a proprietary preparation and is quoted in American price-lists at one dollar per ounce. You should have no difficulty in obtaining it. [*Reply to* RHEI.—23/14.]

CLASSES IN MICROSCOPY.—If the classes at the Jenner Institute do not meet your requirements, you might try an evening class at King's College. Mr. Cole is recognised as an expert teacher of microscope technique. [*Reply to* D. S.—23/7.]

BOTANICAL.—(1) You will find the original paper by Stoklasa in the *Comptes rendus* of the French Academy of Sciences, vol. 127 (1898), p. 282. An account of the results attained by Molisch, and reported in his important work on the subject will be found in the *Journal of the Royal Microscopical Society* for October, 1892. (2) 'Illustrations of the Principal Natural Orders of the Vegetable Kingdom,' by Professor D. Oliver (Chapman and Hall) contains floral diagrams of all the more important orders, with explanatory letterpress. (3) We can give no information on this point. [*Reply to* S. P.—23/1.]

INFORMATION WANTED.

THE CABINET ADVERTISING CO, SHEFFIELD.—Can any reader give me any information regarding this firm.—A. H. (23/18).

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Colouring Matters of Flowers.

P. G. Keegan concludes that a blue flower is unproducible in species which contain or are capable of forming phlobaphenic tannin, no matter what the development of the inflorescence may amount to, and that a blue flower is more likely to be produced in a species having a gamopetalous corolla or perianth, and therefore liable to evolve by higher oxidation a certain quantity of a high oxybenzoic acid. He also thinks that in species wherein the tannin natural to the organism is iron-greening and non-phlobaphenic, a blue flower may possibly be producible in a polypetalous corolla, provided always that the petals or perianth be large relatively to the height of the plant and to the size and robustness of its stem and leaves; in this case it is uncertain whether gallic acid is necessary for the production of the effect, but an alkaline compound of an oxybenzoic acid would seem to be indispensable.—*Nat. Science*, 14, 143.

Production of Apospory by Environment.

F. W. Stansfield read a paper before the Linnean Society on February 2, in which he described a case of apospory in *Athyrium filix-fœmina* var. *uncoglomeratum*, an apparently barren fern, which had been effected by cutting off parts of the immature fronds and allowing them to expand during eighteen months in a uniformly humid atmosphere. The result was the production in the ultimate divisions of a meristematic tissue which gave rise to (1) gemmæ or bulbils, (2) prothalli, producing both apogamous buds and ordinary sexual axes of growth. One of the prothalli had been examined, and found to bear both archegonia and antheridia. On layering the primary fronds produced by apospory, it was found that those readily gave rise to fresh aposporous growths. The ease with which apospory was induced in the primary fronds, as compared with the extreme difficulty in the case of fronds from an older plant, was stated to be characteristic of aposporous ferns in general. It had been observed in every case (eight in all) in which ferns had been raised by apospory. Assuming the truth of the "recapitulation" theory, it was suggested that this fact indicated that apospory is an atavic trait in ferns.

Gum M'beppe or Kongosita.

Under this name Dr. E. Heckel has received a gum from Senegal, which he identifies as that of *Sterculia tomentosa*, Guill. and Perrot. Examined by Professor Schlagdenhauffen, it was found to contain 19·8 per cent. of hygrometric water. It swells rapidly in cold water, but does not give a mucilage; in boiling water only 5·8 per cent. dissolves. But if the gum is subjected to a temperature of 120° C. for four hours, with twenty times its weight of water, in a sealed tube placed in an oil bath, the whole dissolves into a colourless liquid, which possesses when evaporated the characters of arabin. When tragacanth is heated in a sealed tube it requires twice as much water as the M'beppe gum, it must be heated twice as long, up to 135° C., and then affords only 80 per cent. of arabin. As the new gum costs about ten francs per 100 kilogrammes it might serve as a cheap source of arabin and thus as a substitute for gum arabic. This African gum closely resembles the gum known in Indian bazaars as Kutira gum, and like it has a strong odour of acetic acid when kept in close vessels. The Indian gum is obtained from *Sterculia urens* and possibly other species. M'beppe gum differs from tragacanth as follows:—With iodine, tragacanth gives a rose, blue, or violet colour; M'beppe gum gives not the least coloration. Tragacanth yields only 3 per cent. of ash; M'beppe gum gives 7·24 per cent., of which 1·8 per cent. consists of soluble salts of potassium and sodium, and 5·4 per cent. of carbonate of lime. It contains neither chlorides nor sulphates. Dr. Heckel has ascertained that the seeds of the *Sterculia tomentosa* yield an oil which gives no reaction with iodine, whilst that from *S. fœtida* gives a clear green colour.—*Extrait de la Revue des Cultures Coloniales*.

Palladium as a Reducing Agent.

Dr. N. Zelinsky describes a convenient method of employing palladium as a reducing agent. He prepares a zinc-palladium couple from zinc and palladium chloride, places it in alcohol, and adds acid until evolution of hydrogen gas begins. The palladium black is now saturated with hydrogen, and produces reduction of the alkyl iodide or bromide. The reduction proceeds energetically, and it is necessary to add more acid and iodide alternately. It is claimed that 70 to 75 per cent. of the theoretical quantity of hexamethylene and ethyl or methyl-hexamethylene are produced when the corresponding iodides or bromides are treated in the manner described.—*Berichte*.

Lithium Benzoate and Salicylate.

Lyman F. Kebler has followed up his investigation into the purity of lithium carbonate by a study of the physical and chemical properties of the benzoate and salicylate of lithium. The examination of six of the best samples obtainable in the United States showed that the commercial salt may appear crystalline, or amorphous, or both, under the microscope, and contain in no case less than 99 per cent. of lithium benzoate when determined gravimetrically, or 97·23 per cent. volumetrically. The percentage of moisture varies between 0·60 and 8·50 (the latter figure is remarkable), and the reaction to litmus is alkaline in each case. The solubility in water at 15° C. is 1 in 2·4 to 1 in 2 56, and in alcohol (95 per cent.) at the same temperature 1 in 18·9 to 1 in 19·3. Five samples of lithium salicylate were examined; all were white or greyish powders, appearing crystalline, or amorphous, or both, under the microscope. All the samples were acid to litmus, contained 3 96 to 4·50 per cent. of moisture at 110° C., and from 98·60 to 100·31 per cent. of lithium salicylate. The solubility in water at 15° C. ranged from 0 72 to 0·84, and in 95 per cent. alcohol at 15° C. from 1·63 to 1 81 per cent.—*Amer. Journ. Pharm*, 71, 57.

Comparative Value of Fluid Acetracts.

W. B. Thompson makes some observations on fluid acetracts in comparison with fluid extracts, which in most cases are in favour of the latter. He places the two classes of preparations side by side in the case of the following drugs:—Coca, cascara, buchu, digitalis, gentian, ergot, aconite, and belladonna. Cascara and ergot appear to be types of drugs which yield satisfactory acetracts, that from cascara having a good appearance and taste, and ergot acetract being an improvement on the aqueous extract, the added acid permanently fixing the volatile active principle of the drug. The aconite acetract gives to the tongue only a faint tingling sensation, whilst the ordinary preparation leaves a numbness for hours. The acetic preparations of coca and buchu compare unfavourably with the alcoholic extracts. A noticeable feature in all acetracts is the lighter specific gravity which they possess; many of them have a grumous or beclouded appearance. It is suggested that the matter merits the attention of pharmacists before an acetic menstruum is allowed to supersede alcohol as a solvent, as the value of the latter has been confirmed by experience and practice extending over an unlimited period.—*Amer. Journ. Phar.*, 71, 67.

UNGUENTUM ZINCI OLEATIS, B.P.*

BY GEORGE F. MERSON.

The directions given in the Pharmacopœia under this heading for the preparation of zinc oleate are as follows :—

"Dissolve 2 ozs. of zinc sulphate in 4 ozs. of boiling distilled water and 4 ozs. of hard soap (in shavings) in 40 ozs. of boiling distilled water. Mix the solutions, collect the precipitated zinc oleate ; wash with hot distilled water until the washings afford little or no reaction for sulphate ; dry on a water bath," etc., etc.

Without being hypercritical, I think "precipitated" is scarcely the best word to use with refcrence to the zinc oleate. "Separated" would be more appropriate, as the salt—immediately it is formed—is liquefied and floats on the surface of the watery liquid as an oily scum. This is emphasised by the fact that a retail friend consulted me on this very point soon after the Pharmacopœia was issued. He was somewhat puzzled at the appearance of the results obtained when he first tried the formula, naturally expecting a precipitate such as is produced when cold solutions are employed.

In following the official directions, the separated oleate, on stirring, aggregates and rises to the surface of the aqueous liquid, forming a layer which solidifies as the mixture cools. If an attempt be made to wash the separated oleate before solidification takes place, considerable difficulty is experienced in preventing loss of oleate, while if washing be deferred till after concretion, the temperature of the water used is not sufficiently high to liquefy the whole of the mass, and even after several washings a good deal of sulphate is retained by the oleate. This is proved by breaking up the mass and triturating a portion with distilled water, filtering and adding BaCl to the filtrate acidulated with HCl.

The most satisfactory method I find is to allow the separated oleate to solidify in a basin, pierce two holes in the cake, and pour off the aqueous fluid, rinsing the cake with a little cold water. Now add another portion of distilled water, applying heat till the mixture just boils and the oleate is quite fluid, stirring briskly the while ; again cool and decant as before. This usually leaves the solidified oleate perfectly free from sulphate, but the operation may be repeated a third time if necessary.

The cake will now contain a considerable amount of moisture in globules imprisoned in its mass, and following the official directions, the product is to be dried on a water bath. The specific gravity of the substance at 15° C. is just above that of distilled water, the mass sinking slowly.

On warming the water gently the oleate rises to the surface before any trace of fusion is noticed, and just over 70° C., is fluid. Obviously, then, water-bath temperature is too high for drying the oleate, for if the official directions be followed, the mass fuses, water separates out and collects at the bottom of the dish, and, in spite of energetic stirring, it is found impossible to get rid of it, even when operating upon very small quantities, whilst on large lots it is absolutely impracticable. If the cold oleate, however, be broken up and reduced to a granular powder, which is readily done, and placed in an air oven at a temperature not exceeding 60° C., every trace of moisture is rapidly dissipated. To minimise as far as possible the tendency to turn rancid on exposure to air, the dry powder may be again liquefied and allowed to set, if not immediately required for the preparation of the ointment.

The quantity of zinc sulphate ordered is almost sufficient theoretically to decompose the soap, even if the latter be anhydrous, and if the 30 per cent. moisture allowance permitted by the Pharmacopœia be taken into account, the zinc is largely in excess of actual requirements.

Notwithstanding this, made according to official directions, the decomposition of the sodium oleate is not quite complete. The separated zinc oleate, boiled with distilled water, cooled, and filtered, gives on the addition of HCl to the filtrate an oily scum of oleic acid. Another portion of the filtrate to which solution of zinc sulphate has been added gives in the cold a flocculent precipitate, which on drying responds to the tests for zinc oleate.

If the original solutions of zinc sulphate and soap be boiled for a few minutes after mixing, complete interaction is effected and further treatment with boiling water has no appreciable effect on the mass.

* Read at an Evening Meeting of the Pharmaceutical Society in Edinburgh, on Wednesday, February 15.

CONCENTRATED DECOCTIONS AND INFUSIONS.*

BY GEORGE F. MERSON.

Some time ago, before the issue of the present Pharmacopœia, while working upon concentrated decoctions and infusions with a view of finding how far the commercial articles on the market corresponded, on dilution, to the official preparations they were meant to produce, amongst other data noted was (1) the specific gravity, (2) the percentage by volume of alcohol present as a preservative, and (3) the weight of extractive yielded per ounce of the samples under examination.

Under the third heading the discrepancy in results obtained from different specimens of the same preparation is remarkable enough, and shows a great want of uniformity in this class of preparations. A series of concentrated products from one source, stood out prominently from the others examined by reason of their high specific gravity, low alcohol yield, and high percentage of residue obtained on evaporating to dryness on water bath and continuing the heat until the residue ceased to lose weight.

The percentage of alcohol present being in some cases so low as 10 per cent., and this being inconsistent with the stability of vegetable preparations, it occurred to me that possibly some antiseptic might have been used as a preservative.

Turmeric paper dipped in a dilute solution of decoctum senegæ and dried gave unmistakable evidence of boric acid.

A little of the concentrated decoction, mixed with strong sulphuric acid and alcohol added, gave a distinct green flame while burning, showing conclusively boric acid or borate in considerable quantity. The dry residue obtained on evaporation of the original liquid was ignited gently, the heat employed being just sufficient to carbonise all organic matter without fusing the boric acid.

The charred mass so obtained from 50 C.c., lixivated with hot distilled water and filtered, gave a perfectly clear liquid of acid reaction and strong, persistent sodium flame. This, together with a decided tendency to intumesce when the residue from original liquid was being ignited, pointed to a mixture of borax and boric acid being the preservative used.

The filtrate, concentrated and allowed to cool, deposited crystals of a substance giving all the reactions for sodium and boric acid. The crystals were distinctly of two kinds—lamellar, characteristic of boric acid, and irregular clusters of harder texture. On washing with a trace of distilled water the former gave, with litmus paper, an acid reaction, and the latter slightly alkaline.

The crystalline mass, dried at moderate temperature, weighed 5·35 grammes, equal to 10·7 per cent. of soluble inorganic matter.

As this might include any soluble salts of potassium or sodium, etc., normally present in the ash, the result was verified by titrating a little of the salt with N/O volumetric H_2SO_4, using

* Read at an Evening Meeting of the Pharmaceutical Society in Edinburgh, on Wednesday, February 15.

methyl orange as indicator. The result showed 3·71 per cent. of $Na_2B_4O_7 \cdot 10H_2O$. To ascertain the amount of boric acid present in the free state R. T. Thompson's process (Sutton's 'Volumetric Analysis,' page 92), was employed; the whole amount of acid radicle being determined; the difference between the total yield and the amount present in combination with sodium being equivalent to 6·27 per cent. of free H_3BO_3 in the original decoction; or 6 ozs. of borax and 10 ozs. of boric acid per gallon of the finished product. A sample of dec. scoparii conc. from another source attracted special notice owing to the irritating nature of the vapours evolved on ignition of the dry extractive.

The original, shaken up with ether, the ether drawn off, and allowed to evaporate, gave a light coloured residue which answered all the tests for free salicylic acid.

Without expressing any opinion as to the desirability of dispensing a diluted concentration in place of a freshly prepared decoction or infusion, I think that, as concentrated preparations are so largely used, and as the recent issue of the Pharmacopœia has made an attempt to secure uniformity by including formulæ for this class of galenicals, these formulæ being in all cases based upon exhaustion of the crude drug with dilute alcohol, the practice of using any preservative other than spirit is to be discouraged. It is just possible that some of the medicinal constituents to which certain drugs owe their therapeutic value may be precipitated and filtered out of the finished article, or that these preservatives may act as disturbing agents in certain combinations dispensed.

I may remark in conclusion that a sample of a concentrated vegetable liquor, bearing in addition to the ordinary label a slip stating that "This article is prepared in accordance with the British Pharmacopœia, 1898," gave results practically identical with the foregoing.

While the use of such substances as boric or salicylic acids as preservatives, in place of alcohol, for non-official medicinal preparations, is in my opinion open to grave question, their unauthorised use in official compounds cannot be too strongly condemned.

THE GRANULAR EFFERVESCENT PREPARATIONS OF THE B.P.*

BY ALEXANDER DAVIDSON AND GEORGE LUNAN.

There are two additions to this class of preparation in the B.P., 1898, viz., the effervescent caffeine citrate and the effervescent lithium citrate. The inclusion of both was fully justified by their frequent occurrence in prescriptions, and to ensure uniformity of medication when called for either in that way or otherwise.

In both cases the strength has been wisely fixed to succeed unofficial preparations in general use, but the lithium would have been more economically, if less elegantly, prepared by using carbonate.

Our experience has fully convinced us that the granular effervescent form of exhibiting many drugs is on the increase, and it is from a sense that this subject will be more important to dispensing chemists in the future than in the past, that we have decided to offer some observations of a practical nature, which we have made regarding the B.P. preparations of this class.

Our observations were made working separately, and tended clearly to show, so far as we could judge, that the temperature required by the B.P.—93·3° to 104·4° C.—was, for the purpose of granulation, excessive, and resulted in unnecessary loss of carbonic anhydride; that the products from each of the six preparations, instead of being "about 100" varied from 108 to 99, and that it would be impossible, using the excessive temperature of the B.P., to attain all over, results approximating to 100.

We were able, therefore, to account for and confirm Mr. Dyer's statement that there was a loss of about one-third of the carbonic anhydride in preparing the granules by the B.P. process, but that the loss might be modified by using a low temperature for granulation. No higher temperature need nor will, in most cases, be used, and consequently the weights of the products will vary so long as the high temperature is official. Our observations, therefore, included a joint opinion that the heat of a water bath was amply sufficient for the purpose of granulating, and that, if the surface of the pan or dish showed a temperature of from 60° to 70° C., it fulfilled the requirements.

We are of opinion that the B.P. definition "to separate into granules of uniform and convenient size" is too vague, considering the difference between the weight and volume of granules separated by Nos. 6, 9, and 12 sieves, particularly also when it is remembered that granules are invariably prescribed by volume.

We consider it desirable also for the more exact dosage of all drugs, and more especially of potent ones, such as arsenious acid and strychnine, which are frequently prescribed in granular effervescent form, that a standard-sized granule should be adopted, and that a minimum yield of available CO_2 should be stated.

In order to support these observations and commend them to your approval, we made each of the six official preparations in the proportions of the process given, using, however, a temperature not exceeding 70° C. on the surface of our pans for granulating, and of 50° C. for drying. The ingredients were powdered, mixed, sifted through a No. 30 sieve, and again mixed so as to comply with the B.P. requirements to "mix the powders thoroughly," "thoroughly incorporate," "triturating thoroughly," and "mix," the last being apparently only required by the magnesium sulphate and the sodium phosphate and sulphate. When the mixture assumed a plastic consistency it was separated into granules of any desired size by passing through a sieve of the requisite dimensions. The granules were dried at 40° to 50° C. The sodium bicarbonate used was practically chemically pure. Calculation was made of the carbonic anhydride available. The weight of the product after granulation was determined, as well as the available CO_2 at the same stage. After drying the same determinations were made.

The carbonic anhydride was determined by weight in a flask suitably protected from error by means of an inlet tube reaching the bottom of it, and an outlet containing a bulb filled with fused calcium chloride. The flask was emptied of the last traces of CO_2 by drawing air through the apparatus before weighing.

From these determinations we are able to submit the following data of our results:—

EFFERVESCENT PREPARATIONS, B.P.

Preparation.	Weight of Ingredients.	Weight after Granulation.	Weight after Drying.	Loss due to CO_2.	Percentage loss of CO_2.	Loss due to H_2O.	Total loss of Weight.
1. Caffeine Citrate	114	108·5	104·3	5·77	20 6	3·93	9·7
CO_2 available	26·69	22·99	20·92				
2. Lithium Citrate	115	105·5	101·75	7·06	23·26	6·19	13·25
CO_2 available	30·35	26·68	23·29				
3. *Magnesium Sulphate	116·5	107·25	104	4·74	25 16	7 76	12 5
CO_2 available	18·84	16·52	14·1				
4. Sodium Citro-Tart....	111	104	99	7·15	26·82	4·85	12
CO_2 available	26·69	22·03	19·54				
5. *Sodium Phosphate ..	115	111	108·5	4·13	15·79	2·37	6·5
CO_2 available	26·17	22·81	22·04				
6. *Sodium Sulphate	117	107	102·5	9·23	35·27	5 27	14·5
CO_2 available	26·17	19·68	16·94				

* After drying as required by B.P.

* Read at an Evening Meeting of the Pharmaceutical Society in Edinburgh, on Wednesday, February 15.

Effervescent Caffeine Citrate.—This newly-introduced formula works very well. As the product averages 104·3 parts, while caffeine citrate contains about 52·5 per cent. of caffeine, the granules will contain about 2 per cent. of the alkaloid. A fluid drachm of this granule from a No. 12 sieve weighs about 30 grains, from a No. 9 about 27 grains, and from a No. 6 about 23 grains. Five cubic centimetres from a sieve with twelve meshes in 25 millimetres, nine and six respectively weigh 2·28, 2·07, and 1·89 grammes. The granules will contain, calculating from loss due to CO_2, about the following in 104 3 parts :—

Sodium Bicarbonate	39·2
Sodium Citrate, dry	11·1
Tartaric Acid	27·0
Citric Acid	8 2
Refined Sugar	14·0
Caffeine Citrate	4·0
Water	0·8
	104·3

This is assuming, as suggested by Mr. Dyer, that the reaction occurs only between the bicarbonate and the citric acid. We are by no means certain that the reaction once set agoing does not involve the tartaric acid as well. We cannot understand why it should not in a homogeneous mass. At all events the whole of the citric acid is not converted into sodium citrate by the temperature used by us. It will also be noted that the loss of carbonic anhydride is only one-fifth of the quantity introduced.

Effervescent Lithium Citrate.—The presence of about one part of water of crystallisation in the lithium citrate, and nearly two in the same condition in the citric acid produces a softer mass than the caffeine formula, and consequently a larger reaction between the sodium bicarbonate and the acids with production and loss of more CO_2, as well as H_2O. Thus we have

0·95	H_2O	from the Lithium Citrate (Water of Crystallisation).
1 8	H_2O	,, Citric Acid ,, ,,
2 88	H_2O	,, Chemical reaction and production of
7·06	CO_2	
12 89		

a total which so closely approximates to loss given as due to H_2O and CO_2 in the table, as practically to confirm the accuracy of our determinations. The approximate composition of this granule might be calculated in the same way as the effervescent caffeine citrate. The comparatively high loss of CO_2—almost a quarter—would be modified by using lithium carbonate instead of citrate.

Effervescent Magnesium Sulphate.—This is a type of an effervescent granule with a relatively large proportion of medicament, and consequently a smaller one of effervescing material. Only two-fifths of the seven molecules of water of crystallisation are dissipated. Still it leaves a rather slowly soluble product. A more practical method than the B.P. is to take 51 ounces, deprive it of 23 per cent. of its weight and weigh 38½ ounces. This ensures the full proportion. Like granules of the same type the drying takes longer and is better accomplished at 50° C. than at a lower temperature. This accounts for the relatively larger loss of CO_2—quite a quarter—and also of H_2O, which here is mainly from the Epsom salt, not the result of the reaction alone. A small granule is suitable for this type because it dries more quickly and thoroughly, and dissolves better.

Effervescent Sodium Citro-Tartrate.—This is the only fully defined granule and is, of course, the basis with which any medicament may be incorporated.

The loss in making is nearly 10 per cent., which agrees closely with our results. This is a most important point, otherwise a granule of a definite strength of medicament cannot be made. The latter, however, affects the ultimate product, *e.g.*, the caffeine preparation—a dry medicament—has the same proportions, except one less of sugar and four more caffeine citrate, that is, three more in all, yet the average product is 5 3 parts higher because the dry powder diffused through the mass diminishes to some extent chemical reaction, with production and loss of less CO_2 and H_2O. Effervescent lithium citrate has four parts more, yet the product is only 2·75 higher, because of the water of crystallisation in the lithium citrate increasing the reaction throughout the mass. The approximate composition of this finished granule would be :—

Sodium Bicarbonate	36·5 parts.
,, Citrate, dry	14·0 ,,
Citric Acid	6·0 ,,
Tartaric Acid	27·0 ,,
Sugar	15·0 ,,
Water	0 5 ,,
	99·0

The actual water produced here is 4·85, besides a trace in the granules, while the production of 7·15 CO_2 only gives 2·88 H_2O, which with 1·54 from the citric acid makes 4·64, barely sufficient to agree with our table. But this is accounted for by the tartaric acid and sugar carrying into the mass the necessary balance.

Effervescent Sodium Phosphate.—The same remarks apply here as to the magnesium granule. Nearly the whole of the water of crystallisation is driven off, and the salt greedily absorbs the water of crystallisation and chemical reaction. Yet, although the granule dries slowly, the loss of carbonic anhydride and water is the lowest of the examples. The product, too, comes out so high as to call for special notice. Here, as in all, the greatest loss of CO_2 occurs during granulation, the ratio between that time and drying being constantly proportionate.

Effervescent Sodium Sulphate.—The same remarks apply here as to magnesium sulphate and sodium phosphate granules. The whole of the water of crystallisation is driven off from the sodium sulphate before granulating, yet the granule is difficult to thoroughly dry and loses a large proportion of its CO_2 (nearly 36 per cent.).

The mean of the examination of a large number of commercial samples for CO_2 was as follows :—

	From Table Parts.	Mean.	Percentage.	
			Highest.	Lowest.
Caffeine Citrate	20·92	14 02	21·6	11·3
Lithium Citrate	23·29	16 93	21·46	12·2
Magnesium Sulphate	14·1	10·84	12·4	9·3
Magnesium Citrate (so-called) = Sodium Citro-tartrate	19·54	12·6	16·6	8·0
Sodium Phosphate	22·04	12·9	17·6	9·84
Sodium Sulphate	16·94	10·85	13 1	8·9

Comment is unnecessary.

Granulation by Citric Acid and Heat.—The proportion of citric acid may be varied according to the degree of moisture in the substance to be incorporated. We have not found that a smaller proportion than that contained in effervescent sodium citro-tartrate can be successfully employed at and under 70° C., for the purpose of granulating, without risk of obtaining a very dry pulverulent mass. Sometimes with a deliquescent substance such as piperazine it is possible to granulate at ordinary temperatures, thus avoiding the risk of discolouring the product. The highest temperature such a granule need be subjected to for drying is 40° C., and is the most suitable for granules of this type. This illustrates the fact that it is unnecessary to heat citric acid, when mixed, to 100° C. before it yields its water of crystallisation for beginning the reaction necessary for granulation. Possibly it may yield a relatively small proportion at ordinary temperatures in this condition, but that it is from this source and sufficient for the purpose can be proved. Our experience of the method of setting the

mixed powders aside until they cohere is limited, but it points to the conclusion that the granule thus produced dries slowly, and is thus on the whole less effervescent than when made at the temperature of process above stated.

The available water of crystallisation in the citric acid (18) contained in the effervescent sodium citro-tartrate is 1·54 parts, but about twice as much is derived from the chemical reaction in the granule mass, and is necessary for granulation. Much more water may be produced if the mass be not pressed through the sieve at the proper moment. This accounts for the fact that granules prepared on a small enough scale to be kept well in hand generally retain a greater proportion of the CO_2 than those made on a larger one. It also establishes our contention that the B.P. formulæ are derived from large manufacturing sources.

Granulation by alcohol (95 per cent.), a method much in vogue in America, has not presented any advantages except in special cases. Citric acid is necessary, even by this method, if a satisfactory product is to be obtained. To some extent this supports the contention that the reaction occurs mainly between the bicarbonate and the citric acid. Fair granules can be prepared with tartaric acid alone, but with greater loss of CO_2. In some cases where a very light powder, such as compound powder of rhubarb, has to be manipulated, it certainly helps the granulation and improves the colour and taste. Whether some of the alcohol is retained we have not determined, but such a granule diffuses more readily in water, and can be more easily taken. With regard to the proportion of CO_2 retained by the granule by the alcohol process, we find on the whole that it is less with citric acid, and much less than with tartaric acid alone. But we do not believe that our experience justifies us in saying this without qualifying it by stating that the results may be due to want of practice with this process. It is, however, an expensive mode of granulating.

There is a patented process by which the bicarbonate and acids are granulated separately, and after drying they are mixed.

It will have been noted that we have followed a process differing from the P.B., with the view of retaining as much as possible of the carbonic anhydride. The official formulæ are apparently inspired from large wholesale manufacturing sources. We believe that the effervescence of the products is increased by following our process. To recapitulate, we recommend the use of a temperature not exceeding 70° C. for granulating, and the sifting of the plastic mass when in proper condition, without waiting for it to assume the granular form, and then separating into various sized granules as required by the B.P. This ensures a much shorter application of strong heat, and consequently less loss of CO_2. The formation of a definite sized granule at this point gives a uniform granule instead of the B.P. plan of heating till various sized granules are produced and separating by means of sieves. This will be dealt with under relation of volume to weight. It will, however, be readily believed that one uniform granule would be a desideratum in preference to many of different sizes mixed together. We are not prepared to say how much CO_2 the granules should be required to yield. At the B.P. temperature the following reaction might occur:—$2NaHCO_3 = Na_2CO_3 + H_2O + CO_2$.

As to the size of granules, we have found it difficult to put some masses through a No. 12 sieve, but unless too much heated before sifting this can always be accomplished with a No. 9. It will be argued that the smaller the size of the granule the larger the amount of powder, but on the whole a No. 9 granule is preferable to a No. 6, because it can be dried more quickly and uniformly, and will generally retain more CO_2 and always dissolve more quickly. This is an important consideration when the granule is of the type of effervescent magnesium sulphate or sodium phosphate and sulphate. Of course, if the mass is strongly heated the No. 6 will be necessary, but our contention is that it is better to "bake" the mass at as low a temperature as possible, so as to avoid discoloration and loss of CO_2, and large lumpy, heavy insoluble granules. It is at the same time admitted that although this is possible on a small scale, it may be difficult to obtain a satisfactory product on a larger one following our process.

In regard to the relation of weight to volume, it has been found on an average that the three sizes of granules, Nos. 6, 9, and 12, free from powder and small granules, bear the relative proportions respectively of about—

No. 6.	Weight	1	Volume	2·63	S.G. 1·45.
No. 9.	,,	1	,,	2·41	,, 1·21.
No. 12.	,,	1	,,	2·19	,, 1·14.

If the samples contain variable quantities of very small granules and powder, it is impossible to make a comparison. Although the B.P. clearly defines the dose to be by weight, it is unfortunate that granules are nearly always prescribed by volume, and we suggest that dispensers should supply with these granules a measure which would hold the dose. This points, however, in the direction of a uniform granule where the dose would occupy a uniform volume. To further illustrate it we have made the following determinations, which, however, although the means of many weighings, cannot be said to be invariable:—

Granule.	Weight of a fluid drachm measureful.	Weight of an ordinary teaspoonful.	Weight of a heaped teaspoonful.
No. 6	23·25 grs.	38 grs.	64 grs.
,, 9	26·0 ,,	42 ,,	74 ,,
,, 12.....	32·5 ,,	47 ,,	82 ,,

The intention in the prescriber's mind in ordering a teaspoonful is that the patient will get 60 grains, containing, as he believes, a certain quantity of medicament. We do not see how uniformity is to be obtained without the official direction requiring the plastic mass to be pressed through a definite size of sieve. No. 9 fulfils most conditions, and is besides suitable for the lower temperature suggested. It is sufficiently large to give a granule of such size that drying will not render it pulverulent. Undoubtedly the most definite method would be to weigh the dose, but how is this to be practically attained? The first step would be to get prescribers to order by weight only, and then send a measure that would hold the quantity ordered.

NOTES ON THE B P. (1898) GALENICALS.

BY R. GLODE GUYER.

(*Continued from page 122*).

Extractum Ipecacuanhæ Liquidum should be a most useful preparation. It is another example of the fact that the compilers have not neglected to make use of the researches of men who have worked upon this drug for so many years. It is, however, a question whether a chloroformic menstruum ought not to have been adopted instead of an alcoholic one, as chloroform is probably the better solvent of the active constituents of belladonna. The chloroform could easily have been distilled off and the residual extract diluted with the necessary alcohol to attain the required strength.

Extractum Nucis Vomicæ Liquidum.—This is a preparation of considerable merit, but the minutely detailed directions are somewhat cumbersome and embarrassing, especially when, towards the end of the operation, directions are given to evaporate the residue left after distillation to one fluid ounce, and then to dilute this with 90 per cent. alcohol to three fluid ounces, and after determination to continue the dilution with 70 per cent. alcohol. The latter is one of those pharmaceutical niceties which occasionally occur in the pages of the new B.P., where at times

trivial exactness is allowed at times to over-rule common-sense. It is a matter of regret that when introducing this formula the compilers did not adopt the repercolation process, as in the case of extractum belladonnæ liquidum.

Extractum Opii.—The adjustment of this extract to its required strength with milk sugar is a useful innovation, for it is now possible to use opiums of various strengths, which was not feasible before if the product was to have anything like uniformity in its consistency, as so many opiums of commerce are stronger in alkaloid than the B.P. requires.

Extractum Physostigmatis.—The amount of energy involved in revising this obsolete preparation was unnecessary, for its omission would not have been lamented

Extractum Sarsæ Liquidum.—This is not a formula which calls for admiration, but rather the reverse. Sarsaparilla, in such a fine state of comminution, cannot be repercolated satisfactorily with such a weak alcoholic menstruum as that prescribed. Even when a coarse powder is used the rise in the specific gravity of the first percolate is such as to make percolation through the second portion of the drug almost an impossibility, and the operation is quite out of the question with the third one, when dealing with anything like an appreciable quantity of the drug. This is a case where re percolation is of a very doubtful advantage.

Extractum Strophanthi.—Accuracy is the predominating feature of this extract. The removal of the oil by ether, previous to percolation, is essential if the final product is to be worthy of our craft. The instructions to prepare a 10 per cent. tincture evaporate it to a soft extract, and then dilute to a given weight, makes this preparation one of the best from a pharmaceutical standpoint.

Glycerinum Acidi Borici.—The preparation of this galenica requires a considerable amount of manipulative skill. To bring about the desired reaction between the glycerin and boric acid it is essential that the prescribed temperature should not only be reached, but maintained as far as possible. That temperature can only be attained in the ordinary way by the direct application of fire-heat, such as that obtainable with a Bunsen burner. The glycerin must be kept constantly stirred throughout the whole process, or the product will inevitably be coloured. Filtration greatly improves the appearance of this preparation, and can easily be accomplished by means of a hot-water funnel.

Linimentum Belladonnæ.—This preparation is excellent but the colour is liable to vary.

Linimentum Hydrargyri.—The introduction of an equivalent of strong solution of ammonia in place of the diluted article, and the reduction in the amount of camphor liniment directed to be used, makes this preparation much more satisfactory than formerly.

Linimentum Saponis.—The introduction of soft soap in place of hard soap is a great advantage, for this preparation can now be readily prepared. The change will tend considerably to keep its appearance unaltered, as the liniment should show little or no tendency to become cloudy on the reduction of temperature below the normal, as was formerly the case.

Linimentum Terebinthinæ.—The alterations which have been effected in this formula, although trivial, make all the difference between a good and bad preparation. When made according to the new formula, the liniment is apt to separate unless properly emulsified, but to prevent that is purely a matter of skill; there is no fault to find with the formula.

Liquores.—This group is likely to cause considerable agitation amongst pharmacists who hold pronounced views about the utility and the relative efficacy of so-called "concentrated infusions." The nine new preparations of that kind are more closely allied to the tinctures than the liquors if the term is used in its more restricted sense. The chemical liquors have not been subjected to many alterations; the prominent feature is the change of strength of the centesimal solutions.

Liquor Ammonii Acetatis et Citratis.—The retention of the dilute forms and the deletion of the concentrated ones require justification, for I think no one can produce any rational argument for these radical changes. If the reverse had happened no one would have been astonished. The strong solutions were most convenient and universally employed, and I doubt very much if their being expunged from the B.P. will make any difference to their use, especially as the present formulæ have precisely the same strength as the old diluted formulæ had. In the case of liquor ammonii citratis the introduction of the carbonate in place of the liquid ammonia is an improvement. The test appended for neutrality might have been modernised with advantage, on the lines indicated by Proctor.

Liquor Bismuthi.—This preparation now possesses a most elaborate and complicated formula which on investigation becomes a very simple one. It consists merely in preparing the citrate of bismuth and dissolving it in an ammoniacal menstruum. The finished preparation seems practically identical with that of 1885, judging from the quantitative test appended, that it shall contain three grains of oxide of bismuth in each fluid drachm.

Liquor Calumbæ Concentratus.—The formula and process introduced for the preparation of this galenical have the appearance of having been constructed upon data obtained purely upon an experimental scale, without due consideration of the difficulties that will occur when making it on a larger scale. No one can be expected to macerate 10 ozs. of calumba root in 10 ozs. of water, and then to express any appreciable amount of liquid. Such directions as this must be taken with much latitude and modified according to the operator's experience or judgment, especially when working upon ten or fifty times the prescribed quantities, as the absorption of only 4½ parts of the menstruum by 16 parts of the marc is not possible. The instruction to heat the percolate to 180° F. is not sufficient to ensure complete coagulation of the albuminoid matter which is easily abstracted from the root. It should be heated to 212° F.; this would not affect the virtue of the preparation, since it contains no volatile or aromatic matter, nor have we any reliable evidence that it has any definite active principle which is deteriorated by the action of heat, certainly not by the increase from 180° F. to 212° F.

Liquor Chiratæ Concentratus.—The instructions given in describing this process seem unnecessarily detailed, but the formula works well enough. Liquores Cuspariæ, Krameriæ, Rhei, Quassiæ, Senegæ, and Serpentariæ are all to be submitted to the same process, and even the instructions are worded the same.

Liquor Ethyl Nitritis.—This formula has long been wanted, but a more lucid and detailed description of the method of preparation would be advantageous, since an entirely new process is involved. One often finds full instructions given for a very simple formula, which can obviously be prepared only in one way; here is a case in which they would be most acceptable but are absent. The U.S.P. has a very useful and workable process, the details of which should be referred to by those who may require to make the preparation.

Liquor Pancreaticus et Liquor Thyroidei.—These are two new preparations which represent a new class of galenicals, made from fresh animal matter. This is another indication of the

advance of pharmacy at the instance of medicine. Pharmaceutically these are not particularly good preparations, and they certainly lack elegance, especially liquor thyroidei, which will doubtless be in great vogue. It does not keep for any length of time, owing to the somewhat low antiseptic value of its menstruum

Liquor Sarsæ Compositus Concentratus.—The infusion of the sarsaparilla alone at 160° F. is a marked improvement, but the unlimited boiling of the remainder of the ingredients is somewhat objectionable, since the aroma of the sassafras and the flavour of the liquorice root may be to a very large extent dissipated and deteriorated. A much finer preparation could have been produced if extract of liquorice and oil of sassafras had been used, and the other ingredients infused with the sarsaparilla; the infusion being evaporated to the required bulk, the extract dissolved in it whilst hot. and the oil previously dissolved in the spirit added last.

Liquor Sennæ Concentratus.—This formula does not exhibit the same stereotyped construction as those of other similar preparations. Repercolation is the main pivot of the whole scheme, and the amount of menstruum requisite is wisely left to the operator's discretion. The question whether or not senna loses any of its therapeutic value by the action of heat is still an unsolved problem, and until it is solved, I think it should suffice to heat the percolate to boiling point instead of to 180° F. only, as the latter temperature is not always sufficient to clarify the preparation, since much depends upon the nature of the leaves used. If insufficiently heated further precipitation will probably occur after standing, and so spoil the appearance of the finished article.

Spiritus.—With three or four exceptions this group has but little of interest to offer the practical man, for they are merely solutions of essential oils in alcohol and of an absolutely arbitrary strength. The introduction of the new strength of alcohol and its subsequent dilutions tends slightly to change the specific gravity of several preparations which remain unaltered except for the introduction of 90 per cent. alcohol in the place of rectified spirit of 56° F.

Spiritus Ætheris Compositus.—This formula has undergone careful revision, and has already attracted attention. The researches of Clark and Dott have received due recognition, and the deletion of the instructions to expose the distillate to the air for a given time is fully justified. The directions to heat to 341° F. leave no room for doubt as to the nature of the distillate. There is, however, an omission of a serious nature. Formerly the operator was instructed to take a given quantity of the distillate for dilution, but now he is directed to dilute the whole of the product. The amount of that will necessarily vary with the skill of the operator, and also with the amount of material he is working upon. The difficulty is not easily remedied because there is no mention made as to the probable amount of the distillate. As a result no one can keep a stock of it by him ready for use unless he has prepared it himself, which few druggists will care about, as the process involves considerable care and special appliances.

Spiritus Ætheris Nitrosi.—After the enormous amount of energy which has been expended since 1885 in discussing this most familiar preparation, it is surprising to find it is still to be produced by the same process as of yore, with the single exception that some alcohol is now to be placed into the receiver. The reason for this conservatism is doubtless to be found in the introduction of the liquor ethyl nitritis. Undoubtedly the spirit has a therapeutic action apart from the ethyl nitrite, and it will be a long time before the liquor will supersede it, especially as a domestic medicine.

Syrups.—Regarded as a whole, perhaps the most noticeable change which has occurred in this group is the omission, in nearly every case, of the specific gravities, which are undoubtedly the most useful of all data in determining the strength of a syrup. The directions to bring the product to a given weight is no guarantee that the specific gravity will be correct. The omissions might have been more numerous, and certainly there is plenty of room for the introduction of new syrups.

Syrupi Aurantii Aromaticus, Cascaræ Aromaticus, Glucosi, Chloral, et Codeinæ.—The preparation of these syrups is so simple that no comment is needed. Syrupus aurantii presents an ethical difficulty. Hitherto we have been accustomed to see this preparation clear and bright. Owing to the increased proportion of peel used in making the tincture, the additional quantity of oil present partially separates when mixed with the syrup, and makes it a dull-looking preparation. Some pharmacists may think it should be bright as formerly, and consequently filter it, but that is scarcely allowable, because by so doing, both the aroma and flavour are inevitably affected, owing to the abstraction of the oil which, of course, causes the turbidity.

Syrupus Aurantii Floris.—The instructions to prepare this preparation from the "water" as imported, without dilution, is an undoubted improvement, as the flavour is greatly enhanced. It is always a matter of surprise that medical men do not use this syrup more frequently as a flavouring agent when prescribing, since it is an excellent preparation for masking the unpleasant flavour of several drugs.

Syrupus Calcii Lactophosphatis.—This is a desirable addition. The preparation is one which leaves no room for improvement. The process employed for the production of the lactophosphate is very simple.

Syrupus Ferri Iodidi.—This formula is hardly worthy our present-day ideas of what a first-class preparation should be. The directions to first prepare a syrup of such a strength, and then to proceed to make the liquor, is not the most efficient method of proceeding, for the chances are that by the time the solution is ready to be added to the syrup the latter will be a semi-solid mass of crystalline sugar. The directions should have been reversed. Then one is inclined to question the utility of boiling the syrup after the solution is added. This is not necessary if the syrup is prepared after the solution. Doubtless the idea was to avoid any undue exposure of the solution when prepared, but the degree of oxidation that would be likely to take place by allowing the solution to stand a short time while the syrup is being made is inappreciable. Why the compilers did not adopt the more simple plan of making a solution and adding it to simple syrup is an enigma, for the extra amount of sugar is not necessary.

Syrupus Ferri Phosphatis.—The preparation of this syrup by the solution of the iron wire in phosphoric acid is a marked improvement upon the previous clumsy process of precipitation, which was both wasteful and uncertain.

Syrupus Ferri Phosphatis cum Quinina et Strychnina.—This is based upon the same lines as the previous syrup, but as the quinine and strychnine are dissolved in the acid solution of the iron phosphate, the syrup tends to become dark in colour when kept for any length of time, and should, therefore, be made as frequently as possible.

Syrupus Scillæ.—The reduction of the quantity of sugar used in preparing this syrup will now prevent trouble with regard to the proneness to crystallisation.

(*To be continued.*)

THE ATOMIC WEIGHTS OF THE ELEMENTS.

The question as to the atomic weights to be accepted for practical analytical calculations has for some time past been engaging the attention of the German Chemical Society, and the report of the commission—consisting of Professors Landolt, Ostwald, and Seubert—appointed to deal with the subject, appears in the *Berichte* for November 28 last. The members have unanimously arrived at the following conclusions :—

I. As the basis for calculating atomic weights, the atomic weight of oxygen shall be taken as 16, and the atomic weights of the other elements shall be calculated on the basis of the direct or indirect combining power with oxygen.

II. As atomic weights of the elements for practical use the following, which are at present the most probable values, are proposed :—

Aluminium	Al	27·1	Neodymium (?)	Nd	144
Antimony	Sb	120	Nickel	Ni	58·7
Argon (?)	A	40	Niobium	Nb	94
Arsenic	As	75	Nitrogen	N	14·04
Barium	Ba	137·4	Osmium	Os	191
Beryllium	Be	9·1	Oxygen	O	16·00
Bismuth	Bi	208·5	Palladium	Pd	106
Boron	B	11	Phosphorus	P	31·0
Bromine	Br	79·96	Platinum	Pt	194·8
Cadmium	Cd	112	Potassium	K	39·15
Cæsium	Cs	133	Praseodymium (?)	Pr	140
Calcium	Ca	40	Rhodium	Rh	103·0
Carbon	C	12	Rubidium	Rb	85·4
Cerium	Ce	140	Ruthenium	Ru	101·7
Chlorine	Cl	35·45	Samarium (?)	Sa	150
Chromium	Cr	52·1	Scandium	Sc	44·1
Cobalt	Co	59	Selenium	Se	79·1
Copper	Cu	63·6	Silicon	Si	28·4
Erbium (?)	Er	166	Silver	Ag	107·93
Fluorine	F	19	Sodium	Na	23·05
Gallium	Ga	70	Strontium	Sr	87·6
Germanium	Ge	72	Sulphur	S	32·05
Gold	Au	197·2	Tantalum	Ta	83
Helium (?)	He	4	Tellurium	Te	127
Hydrogen	H	1·01	Thallium	Tl	204·1
Indium	In	114	Thorium	Th	232
Iodine	I	126·85	Tin	Tn	118·5
Iridium	Ir	193·0	Titanium	Ti	48·1
Iron	Fe	56·0	Uranium	U	239·5
Lanthanium	La	138	Vanadium	V	51·2
Lead	Pb	206·9	Wolfram	W	184
Lithium	Li	7·03	Ytterbium	Yb	173
Magnesium	Mg	24·36	Yttrium	Y	89
Manganese	Mn	55·0	Zinc	Zn	65·4
Mercury	Hg	200·3	Zirconium	Zr	90·6
Molybdenum	Mo	96·0			

With regard to the table the following points should be noted : The decimals may be taken as quite correct to the number of places given ; in accordance with this the atomic weights ascertained by Stas are given to two places, the better established of the others to one place, and the rest without decimals. Nickel, bismuth, and tin are the only ones that depart from this rule ; in the case of nickel this is in order to bring out the undoubted difference between its atomic weight and that of cobalt, which is 59. The atomic weight of nickel is certainly less than that of cobalt, and therefore the round number (59) cannot be used in this case without introducing the error of assigning to both the same atomic weight. With regard to bismuth and tin, the same thing is to be remarked. The true atomic weights lie probably nearer to those assigned (208·5 and 118·5) than to the next following whole numbers, while they are not certain to 0·1. The figure 1·008 is more accurate for hydrogen that that given in the table (1·01), but for the requirements of practice it is admissible to consider it as 1·01, the error introduced being only 1/5th of one per cent. The elements, the names of which are marked with a note of interrogation, are subject to uncertainty, either in respect of their homogeneity, or in reference to the value of their atomic weights.

At the discussion that took place on the subject of fixing the basis for the calculation of atomic weights many important points were brought forward. It was pointed out as interesting historically, that either oxygen or hydrogen had always been used as a standard. Dalton chose hydrogen because it possessed the smallest of the known atomic weights, while Berzelius, from purely practical considerations, preferred oxygen, which forms combinations with almost all the other elements, so that their combining proportion with it can be determined directly ; hydrogen has not this property, and therefore calculations have to be made indirectly. In this way errors are admitted which do not necessarily belong to the subject, but are the result of choosing an unsuitable standard. Berzelius proposed that the atomic weight of oxygen should be taken as some arbitrary number ; he rejected the numbers 1 and 10, which Wollaston had proposed, on account of their inconvenient smallness, and suggested 100. This drew attention to the fact that it is not necessary that the standard number should be 1. Afterwards the development of the idea of the molecule made the doubling of several atomic weights necessary, and the need for ready distinction led for a time to the return to hydrogen as unity. The work of Dumas on the synthesis of water and its confirmation by Erdmann and Marchand drew attention to the relationship O : H = 16 : 1, and this was soon generally accepted. Marignac and Stas, who were both working, though separately, on the subject, recommended that as a basis for calculation not H = 1 but O = 16 should be taken. In accepting this, important advantages would be gained ; all former determinations of atomic weight had been actually reckoned on the basis O = 16, and therefore the proposed figure caused no alteration in the existing numbers. The proposal did not, however, meet with universal acceptance. The researches of Dumas, Erdmann, and Marchand on the synthesis of water, together with those of Regnault on the weight of gases, pointed to the figure 15·96 for oxygen. The atomic weights of the elements based on that number became widely known through the tables of Lothar, Meyer and Seubert, and are to be found in many text-books at the present time.

At present when the incorrectness of the relationship O : H = 15·96:1 has been proved by the concordant results of the work of different investigators, the right moment seems to have come to remove all difficulties by adopting a more simple and satisfactory standard. Recent investigations point to the figures 15·879:1 for the relationship between oxygen and hydrogen, but there are technical difficulties inherent in the methods of ascertaining that relationship which stand in the way of accepting this as absolutely correct. It may be confidently stated that nothing essential will be jeopardised by accepting O = 16 as a basis. For all practical purposes the atomic weights of the elements taken on this basis are quite satisfactory, and by adopting it the widespread desire for a simple number as a standard will be met. The rest of the atomic weights should also be simplified as far as possible. For instance, H = 1·008 may be taken as H = 1·01 without introducing any error worth mentioning. The practical grounds for adopting O = 16 as a basis are that the atomic weights of most of the elements can be determined directly from their combinations with oxygen, and that, in the absence of complete certainty as to the exact relationship between oxygen and hydrogen, more correct results will be obtained than are possible on the basis H = 1.

An international understanding on this matter is greatly to be desired, and it is hoped that the time is not far distant when it may be reached.

Hetol (Sodium Cinnamate).—A. Sanderer has applied the name hetol to sodium cinnamate, which is found to exercise a beneficial effect in the treatment of phthisis.—*Pharm. Post*, 31, 549.

PHARMACEUTICAL SOCIETY.

EVENING MEETING IN LONDON.

An ordinary evening meeting of the Society was held at 17, Bloomsbury Square, W.C., on Tuesday last, February 14, the President, Mr. WALTER HILLS, in the chair.

Mr. HILLS explained that the lecture on "Adverse Conditions, and their Remedies, in the Life of Plants," which had been announced for this meeting, was unavoidably postponed owing to the indisposition of Professor J. Reynolds Green. All present, he was sure, would regret with him that Professor Green was ill, and they all hoped he would soon recover. Under these circumstances Professor J. NORMAN COLLIE, Ph.D., F.R.S., had kindly consented to repeat the lecture delivered the previous evening before the Royal Geographical Society. Their deepest thanks were due to him for thus coming forward at the last moment. It would be a most interesting lecture, and although it did not cover anything botanical, pharmaceutical, or chemical, still it was in the interests of science that Professor Collie had been in regions not previously visited by Europeans, and had mapped out a considerable tract of country.

Professor COLLIE then proceeded to deliver his lecture on

Exploration in the Canadian Rockies.

It will doubtless be remembered that a year ago Professor Collie delivered a lecture on the same subject before the School of Pharmacy Students' Association (see *P.J.* [4], **6**, 155), when he gave a graphic account of his first expedition to the Rocky Mountains of Canada in August, 1897. That expedition, he said, was undertaken for pleasure, but from what he saw whilst there he determined to make his next visit for scientific exploration; as the President had stated not in the interest of botany, pharmacy, or chemistry, but of geographical science. He then exhibited by means of the lantern a series of beautiful views of Rocky Mountain country lying within five miles of the Canadian and Pacific Railway, which will in all probability become the health resort of America, just as Switzerland is to Europe. With the aid of realistic descriptions and vivid pictures Professor Collie conducted his audience through that part of the Canadian Rockies that lies between the Kicking Horse Pass on the south and the source of the Athabasca river on the north. The most interesting problem connected with the first journey which presented itself to Professor Collie and his party was whether a lofty mountain, probably 14,000 feet to 15,000 feet—seen from the slopes of Mount Freshfield, from which it lay distant about thirty miles in a north-westerly direction, might be Mount Brown or Mount Hooker, which were supposed to be 16,000 feet and 15,000 feet high respectively. Professor Coleman, in 1893, starting from Morley, had arrived at the true Athabasca Pass, found the historic Committee's Punch-bowl, and his brother had climbed the highest peak on the north, 'presumably Mount Brown. This peak he found to be only 9000 feet. The question presented itself—Could he have been mistaken or was it possible that there existed two Athabasca Passes? Professor Collie and his companions returned to their camp on the Saskatchewan Pass without having solved the question of either Mounts Brown or Hooker, or the Committee's Punch-bowl. It was finally settled on the return to England by reference to the journal of David Douglas, the naturalist, dealing with his journey over the Athabasca Pass. From the authentic account of the two mountains there given it was seen that the credit of having settled with accuracy the real height of the peaks belonged to Professor Coleman. For nearly seventy years they had been masquerading in every map as the highest peaks in the Rocky Mountains. No doubt now remained as to where Brown and Hooker and the Punch-bowl were. That Douglas climbed a peak 17,000 feet high in an afternoon (as narrated in his account) was impossible; the Mount Brown of Professor Coleman, 9000 feet high, was much more likely. There was only one Athabasca Pass, and on each side of its summit might be found a peak—Mount Brown, 9000 feet high, on the north (the higher of the two), and Mount Hooker on the south. Between them lay a small tarn, 20 yards in diameter—the Committee's Punch-bowl. The peaks to the south, amongst which Professor Collie and his party wandered last August, were therefore new, and they probably constituted the highest points of the Canadian Rocky Mountain system. These peaks had now been mapped out and named covering an extent of country about 150 miles long. This map would be published by the Geographical Society. The party made an unsuccessful attempt to climb one of the highest peaks, Mount Forbes, which was certainly not less than 14,000 feet. Professor Collie in describing one very characteristic feature of the peaks traversed by the party, said they were chiefly of limestone, and the formation was such that they could only be described as resembling sea-waves driven along before the wind becoming suddenly petrified. In the second expedition, which was made during the summer vacation last year, the lecturer said he was extremely fortunate in securing as one of his companions an old student of the Pharmaceutical Society and, he believed, a Pereira medallist, Mr. Hermann Woolley, a well-known member of the Alpine Club and an expert mountaineer. One great difficulty the party experienced was in getting their horses through the tangled mass of fallen tree-trunks which have been congregating for possibly a hundred years or more, so much so that in passing through one valley it took them five days to go ten miles. One peak, which was crossed on the return home, the lecturer described as unique, it being probably the only peak in the world that supplies water to feed three oceans—the Atlantic, Arctic, and the Pacific. Geologically the party also made an interesting discovery, viz., that in one district the masses of rock seemed to be composed of fossil pine trees, which must have had a pre-historic origin; but the rock contained trilobites, consequently the fossils could not have been pine trees, but in all probability were enormous fossil seaweeds.

Mr. HILLS said the frequency of the applause had sufficiently indicated the appreciation with which the lecture had been listened to. Professor Collie had been good enough to lend him a map of the exploration, and he found there was a Peak Woolley, 11,700 feet, and a Peak Stutfield, 11,400 feet (after another of the party), but he was unable to find Peak Collie. He was glad to know, however, that there was to be a Peak Collie. It had been a very interesting lecture, and their thanks were due to Professor Collie for coming forward at a moment's notice. He hoped that at the evening meeting to be held next month they would have Professor Green's paper, but if not then on some other occasion.—The thanks of the meeting were then accorded by acclamation, and

Professor COLLIE said he felt very gratified at the appreciation with which his remarks had been received, it certainly had been very pleasant to him to fight his battles over again. The actual experience was not quite so pleasant at times. The map which the President had been studying was not quite completed. A party of Americans while exploring a range near the railway discovered a peak which they tried to ascend but were baffled; that peak would, on the Americans' recommendation, be marked on the map as Peak Collie.

EVENING MEETING IN EDINBURGH.

The fourth Evening Meeting of the session was held in the Society's House, 36, York Place, Edinburgh, on Wednesday, February 15, Mr. W. L. Currie (Glasgow) in the chair.

The minutes of last meeting were read and approved. Apologies for absence were intimated from Messrs. J. Laidlaw Ewing and W. B. Cowie.

The first communication was by Messrs. Alexander Davidson and George Lunan, on

The Official Granular Effervescent Preparations,

and is printed in full at page 141. In the subsequent discussion,

Mr. Dott said he had listened with great interest to this paper, which contained a great deal of very useful work. He might not agree with all that had been said. It was possible that conditions which applied on the small scale would not apply when working with larger quantities. He did not agree with the authors as to measuring the dose. The Pharmacopœia gave a dose by weight, and he thought it should always be weighed. It was to be remembered, too, that the doses of granular preparations did not require to be very precise. The practice of ordering potent drugs in granular form was a bad custom, and had been severely condemned by at least one medical authority. It sometimes happened that volatile substances were incorporated with the effervescent basis without account being taken of the probability that the product would not contain the full amount.

Mr. Coull said his experience was that the official formulæ contained too much citric acid. Working at 220° F. and making 100 ounces he found it was necessary to reduce the citric acid and increase the tartaric acid. Small lots would contain more carbon dioxide. Making at the pharmacopœial temperature there would be a greater loss of carbon dioxide. Effervescent sodium sulphate is an exception, inasmuch as he found it necessary to increase the citric acid and reduce the tartaric acid.

Mr. Boa said he had tried the process of making granules by allowing the mixed substances to stand, and the results were very unsatisfactory; he would have expected that large makers with usually more efficient apparatus would have been able to save more carbon dioxide. He thought the official temperature was too high.

Mr. Merson said he could endorse the opinion of the authors that it was of prime importance to have the granulating dish at the proper temperature before introducing the mixed powders. The official temperature he also thought too high in the case of sodium sulphate. The mass became too pasty if the drying was conducted at a higher temperature than 50° C. The granules were apt to cohere, necessitating passing through another sieve, which was apt to break them up. The official directions gave granules of various sizes, and he agreed that a uniform size would be better. The low percentage of carbon dioxide in commercial samples might be due to imperfect drying and consequent caking.

Mr. McDiarmid said he remembered when the Addendum to the Pharmacopœia was being prepared, it was suggested that three formulæ from these preparations should be included, and he had the honour of trying the processes. He found it impossible to get a yield of one hundred parts, and subsequent experience had convinced him that it was impracticable; a large quantity of carbon dioxide would require to be driven off to reduce the yield to one hundred. This was a good paper and the suggestions made were practical and worth following. He approved of a uniform granule, but he found there was a fashion in granules. In one district he found they used a No. 5 sieve, giving very large granules. He had found considerable difficulty with sodium sulphate, which would not granulate unless heated rapidly to 100° C., and then it granulated very quickly. It was very apt to become pulverulent; an advantage would be to add a little citric acid, or the acid might be increased. His experience was that it was necessary to alter the proportion of the acid in nearly every case with this class of preparations. In the cases of citrate of iron and quinine and piperazine, for instance, it was necessary to reduce the citric acid. He would like the authors to prepare half a hundredweight of each of these preparations and then publish a note of their results.

Mr. Rutherford Hill said the authors thought the Pharmacopœia should fix a minimum yield of carbon dioxide, but they did not say what that should be. It would have completed their suggestions had they done so. There was a good deal to be said in favour of a granule of uniform size. He agreed with what Mr. Dott said, but they had to face the fact that doctors constantly ordered teaspoonful doses, under the mistaken impression that that meant sixty grains, and such preparations containing potent drugs were in frequent use, and pushed under the notice of prescribers by many wholesale makers. It would, therefore, be a gain if a uniform granule enabled them to send out with each preparation a measure which would hold sixty grains. Many pharmacists were needlessly deterred from making these preparations by an idea that they could not do so. The apparatus Mr. Lunan had been good enough to show would let them see how easily it could be done. They could make these things better and cheaper than they could buy them, and the practice would be good for their apprentices. If those preparations could not be efficiently made in half-hundredweight quantities then he would say they ought only to be made on the small scale.

Mr. Currie said he had been induced to get a machine made for making these granules, and his experience was that it paid in every way. By a return pipe between the boiler and the granulating table he was able to maintain a constant temperature with very little heating. The official directions were rather vague and unsatisfactory, and the high temperature prescribed gave an article which was only fit for putting down the sink.

Mr. Lunan, in reply, said he deprecated prescribing potent drugs in this form, but it was quite common to be requested to put up a preparation containing 1/40th of a grain of arsenic or strychnine in sixty grains, and they were compelled to meet the difficulty and try to get some plan by which they could secure accurate dosage. He agreed that it was an advantage to increase the citric acid in the case of sodium sulphate. He thought these preparations could be better made on the small scale than on the large scale.

The next papers read were by Mr. George F. Merson, on

Concentrated Decoctions and Infusions, and Unguentum Zinci Oleatis.

They are printed in full on page 140. In the subsequent discussion,

Mr. Henry said he found in making concentrated infusions that a good plan was to take the quantities for one pint, infuse in six ounces of water, filter, and set aside. Then infuse in the remainder of the water, filter, and evaporate this latter portion only, mix with the first infusion and finish, so that one part with seven parts of water gives the official infusion. That preserved the natural aroma of the drugs and was much nearer a fresh infusion than the repercolation infusions usually supplied by wholesalers. He did not think the concentrated liquors of the Pharmacopœia could have been intended as substitutes for the ordinary concentrated infusions. One was inclined to ask why these and similar papers had not been read before the publication of the Pharmacopœia. There should be more retail

pharmacists on the Pharmacopœia Committee, and the whole subject should be discussed openly, there was no need for such secrecy. If that were done they would not have the Pharmacopœia set up as a kind of pharmaceutical Aunt Sally for chemists to take shots at.

Mr. A. Currie said it was discreditable that adulterations so easily detected as boric acid and salicylic acid should be used in the way stated, and not be detected by chemists. It was not, perhaps, altogether the wholesalers' fault, but was attributable to the incessant demand for cheap products. Mr. Currie said he agreed that there was quite needless secrecy about the publication of the Pharmacopœia, and when suggestions had been made they had practically been told that they were not wanted.

Mr. Merson having replied, owing to the lateness of the hour it was agreed to postpone Mr. A. Currie's paper on "Urine Analysis" till the next meeting.

The Assistant-Secretary then directed attention to recent additions to the Library.—On the motion of the Chairman, votes of thanks were awarded to the authors of papers and donors of books.—On the motion of Mr. Boa, a hearty vote of thanks was also awarded to the Chairman, and the meeting closed.

SELECTED PRACTICAL FORMULÆ.

Tooth Powders and Mouth Washes.

Tooth Powders:—(1) Precipitated chalk, 120 Gm.; cinchona bark, 60 Gm.; powdered cuttlefish, 60 Gm; powdered myrrh, 35 Gm.; oil of peppermint, 15 drops. (2) Strontium carbonate, 15 Gm.; flowers of sulphur, 15 Gm.; oil of rose, 6 drops. This is a very smooth and agreeable powder. *Tooth Paste*:—Strontium carbonate, 6 Gm; flowers of sulphur, 3 Gm.; medicinal soap, 13 Gm.; oil of rose, 6 drops; gum arabic and glycerin, *q.s.* As colouring matter use a very little of "phenol-safranine B. extra." The following mouth water is antiseptic, astringent, aromatic, and of good colour:—Salol, 2 Gm.; spirit of lavender, 15 Gm.; spirit of melissa, 15 Gm; eau de Cologne, 90 Gm.; tannin, 2 Gm.; safranine hydrochloride, 3 centigrammes; saccharin, 25 centigrammes; oil of peppermint, 12 drops; a few drops of an alcoholic solution of safranine 1:1200 give a pink tint; safranine preparations do not stain either the brush or linen. Another mouth water is prepared as follows:—Thymol, 25 centigrammes; benzoic acid, 4 Gm.; tincture of eucalyptus, 15 Gm.; alcohol, 100 Gm.; oil of wintergreen, 25 drops. Dilute a teaspoonful in half a tumblerful of water. *Powder to Prevent Tartar on the Teeth*:—Potassium chlorate, 14 Gm.; powdered borax, magnesia, and chalk, of each 28 Gm.; oil of peppermint, 10 drops. Avoid rubbing in a mortar.—*Zahn. Ref. Woch.*, **17**, 304, after *La Revue Odontologique.*

Permanent Ink for Glass and Metal Ware.

The following inks are suitable for labelling and otherwise marking glass or metal ware. The marks are not washed off by water: *Black.*—Fluid Indian ink, 11 parts; sodium silicate, 1 to 2 parts. *White.*—Chinese white or barium sulphate, 1 part; sodium silicate, 3 to 4 parts. This ink must be kept in stoppered bottles and well shaken up before use. The writing is done with a steel pen. When dry the ink is affected by very few reagents, but can easily be scraped off with a penknife. The strength of the sodium silicate is not given, but probably the ordinary commercial 33 per cent. solution is referred to. The colours are to be well dried and finely powdered before being used.—*Pharm. Zeit.*, **43**, 860, after *Deutsch. Mech. Zeit.*

ANALYTICAL NOTES.

Congealing Point of Paraffin.—R. Kissling recommends the following procedure for noting the congealing point of paraffins, the apparatus consisting of a glass cylinder 12 Cm. high, like a lamp glass, and 8 Cm. wide. It is covered with a disc of wood or cardboard, which has a round hole in the middle. Into this aperture a beaker 5 Cm. high, and 8 Cm. in diameter is suspended: 50 grammes of filtered paraffin is put into the beaker and heated for some time on the water bath to 10° C. above congealing point; it is then suspended in the aperture of the diso. The paraffin is now stirred with a thermometer with a small bulb until a slight trace of congealed paraffin is apparent on the centre of the bottom of the glass. This point is noted as the congealing point. If correctly carried out, the bottom of the beaker is immediately afterwards wholly covered with a thin film of paraffin, and a moment later the surface also, while the fluid appears to be flaky, although quite clear a moment before. The right point is best observed by looking through the sides of both glasses. The author shows that errors with this method do not exceed an average of 1/10th of a degree. The test can be repeated several times with the same material, and the time taken is only 10 to 12 minutes. It is equally suitable for all varieties of paraffin mixtures, stearin, ceresin, etc., and may be used as a substitute for Finkener's method for determining the congealing point of solid fats.—*Pharm. Centralh.*, **39**, 354.

A New Pepper Adulterant.—T. F. Hanausek reports from Prague (*Zeitschr. f. Unters. Nahr-und Genussmit.*) on a sample of pepper which was found to be adulterated with powdered exhausted coriander fruits. Exhausted fennel and anise fruits have been previously reported as pepper adulterants, but the employment of coriander for this purpose seems to be a new departure.—*Pharm. Cent.*, **39**, 747.

Detection of Citric Acid.—G. Denigès, in a communication to the Société des Sciences Physiques de Bordeaux, has described the following test for the presence of citric acid, which has the advantage of being delicate and not being affected by the presence of other organic acids: To a 5 C.c. solution containing citrates is added 1 C.c. of a solution of mercuric sulphate, prepared from mercuric oxide, 5 grames, concentrated sulphuric acid, 20 C.c., water, 100 C.c. The mixture is boiled, and while warm five or six drops of permanganate solution are added. The solution rapidly becomes decolorised, and a typical white precipitate is slowly formed. In very dilute solutions one drop of permanganate will be found to be sufficient. The test, modified to meet the requirements of the case, serves to indicate the presence of citric acid in wine and milk.

Volumetric Determination of Cerium.—A. Job finds that cerium may be titrated directly in a mixture of any of its accompanying metals by means of the reaction of hydrogen peroxide on ceric salts. The solution containing cerium salts i treated in the cold with a large excess of nitric acid and lead dioxide, well shaken, and filtered; the cerium in the filtrate is then titrated with dilute hydrogen peroxide solution, the decoloration of the solution marking the end of the reaction. The hydrogen peroxide solution is standardised with pure ceric ammonio-nitrate. One molecule of peroxide is equivalent to two molecules of ceric salt.—*Comptes rend.*, **128**, 101.

NOTICES OF BOOKS.

The 'Physicians' Book for Private Formulæ' (Bristol: John Wright and Co. Price 2*s.*) is a useful little book to fit the waistcoat pocket, intended to serve as a relief to the highly-taxed memory of the general practitioner. It consists for the greater part of blank pages, with alphabetical side-index, for jotting down formulæ, notes of new drugs and their doses, or particulars of new applications which it is desired to try. There is also a posological table, a list of official external applications, a table of proportionate doses, lists of weights and measures, and some practical notes upon the treatment of poisoning. The book is serviceably bound n a li mp roan cover, or for sixpence extra it can be obtained in polished leather.

'The Tutorial Dynamics,' by William Biggs, M.A., and G. H. Bryan, Sc.D., F.R.S. (London: W. B. Clive. Pp. 312. Price 3*s.* 6*d.*), is an enlarged edition of the 'Text-Book of Dynamics,' by the same authors, and is intended to meet the requirements in dynamics of the Intermediate Science Examination of London University. The first ten chapters deal exclusively with motion in a straight line, and the parallelogram law is introduced in a later chapter, the design being to prevent students mistaking their knowledge of higher analytic methods as applied in dynamics for a knowledge of dynamics itself. The subject is clearly, yet concisely treated, and at the end of each chapter there is a useful summary of results, whilst numerous examples are also given. As a text-book the work is worthy of much praise.

The 'Matriculation Directory' for January, 1899 (London: University Correspondence College. Price, 1*s.* net.) includes articles on the special subjects for the London University Matriculation Examinations, to be held in June, 1899, and January, 1900, in addition to the usual mass of useful information regarding text-books, etc. No student preparing for matriculation at the Metropolitan University can well afford to be without a copy of this directory.

'Banks and Their Customers' (London: Effingham Wilson. Pp. 77. Price 1*s.*) is a practical guide for the use of those fortunate individuals who can afford to keep banking accounts. The author explains how to obtain advances from banks and how to check bankers' charges, describes the methods of precedure followed in dealing with cheques, bills, coupons and foreign drafts; and shows, amongst other matters, how credit account customers differ from deposit customers. The book should have a wide circulation amongst business men.

A 'Dictionary of Medical Terms' (English-French), by H. De Méric (London: Baillière, Tindall and Cox. Pp. 394. Price 5*s.* net), is an excellent work and very complete, including terms used in materia medica, as well as in medicine, surgery, etc. As an instance of the care that has been taken to ensure accuracy, it may be stated that French phrases have been employed to express single English words whenever the sense seemed to require it. The endeavour to render scientific and technical terms employed in one language with equal brevity in another language is frequently attended with unsatisfactory results, but technical dictionaries as frequently fail to translate terms properly. The genders of French substantives when used alone are indicated in the work under notice in addition to the feminine forms of those adjectives which differ from the masculine. The book is clearly printed in double columns, and when the companion volume—French-English—appears, the dictionary should be the most useful one of it kind on the market.

PHARMACEUTICAL MEASURES.

Board of Trade Memorandum.

The Medical Act, 1858 (Section 54), provides that the General Council of Medical Education and Registration of the United Kingdom shall cause to be published under their direction a book to be called "The British Pharmacopœia," containing a list of medicines and compounds and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed. A subsequent Act, the 25th and 26th Victoria, cap. 91, 1862, enacted that the British Pharmacopœia should be substituted for all previous Pharmacopœias.

Under the authority of these Acts the General Council issued last year the fourth British Pharmacopœia, in which edition no alteration has been made in the Imperial weights and measures as given in the edition of 1864, but the use of metric weights and measures has been extended so that "the metric system alone is employed in all paragraphs relating to analysis, whether gravimetric or volumetric." (Pharmacopœia, 1898, pags xi.)

In the preparation of medicines, quantities are now expressed throughout the new Pharmacopœia both in Imperial and metric weights and measures.

For the purpose of measures of capacity the new Pharmacopœia continues to use Imperial measuring vessels graduated at the legal temperature of 62° Fahrenheit (16°·7 Centigrade). The official names of the metric capacity-units are defined at 39°·2 Fahrenheit; or 4° Centigrade as generally adopted on the Continent. The Pharmacopœia also follows the practice adopted abroad and employs metric measures of capacity and volumetric vessels graduated at 15°·5 Centigrade or 60° Fahrenheit. Specific gravity bottles are also to be adjusted at 60° Fahrenheit (15°·5 Centigrade), the figures indicating specific gravities being quotients obtained by dividing, in each instance, the weight of the solid or liquid by the weight of an equal bulk of water, both taken at 60° Fahrenheit (15°·5 Centigrade).

Apparently there are in use, therefore, two metric capacity-units, one containing a litre at 4° Centigrade (39°·2 Fahrenheit), and the other a litre at 15°·5 Centigrade (60° Fahrenheit). Actually, however, there is only the one metric capacity-unit, that at 4° Centigrade as defined in the Order in Council, dated May 19, 1898, and from which the litre at 15°·5 Centigrade is ascertained.

The metric standards, from 20 litres to a millilitre, used by local inspectors of weights and measures, are verified in relation to the litre at 4° Centigrade; such measures are made of brass, and each measure holds its true capacity when filled to the brim. In the case, however, of *graduated glass* standards used by the inspectors in testing pharmaceutical measures, these are engraved in accordance with the Pharmacopœia to contain their capacities at 15°·5 Centigrade or in ordinary air.

Metric glass measures verified by inspectors for pharmaceutical use or for the use of chemists and druggists should have the temperature 15°·5 Centigrade, or 60° Fahrenheit, marked on them, *i.e.*, the litre should hold at 15°·5 one kilogram weight of water at that temperature. Where this temperature is not so marked, then it is always to be assumed that the measuring vessel has its temperature at 4° Centigrade.

The Pharmacopœia Imperial measures of capacity include:—

1 Minim	Min.		
1 Fluid Drachm	Fl. drm.	=	60 Minims.
1 Fluid Ounce	Fl. oz.	=	8 Fluid Drachms.
1 Pint	O.	=	20 Fluid Ounces.
1 Gallon	G.	=	8 pints.

Board of Trade,
Standards Office,
January 6, 1899.

H. J. Chaney.

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PHARMACY FOR THE PHARMACIST.

In cases where the State has considered restriction of certain callings desirable in the public interest, it has usually been felt that the restrictions imposed should be strictly enforced in the interests of those whose means of livelihood were involved. The more general method has been to prohibit the practice of those callings except to individuals holding licences from the public authorities for that purpose, and in such instances, *e.g*, the sale of alcoholic beverages, jewellery, nostrums, etc., the prohibition of unlicensed practice is generally absolute. With the exception that the licences are not annual ones, similar restrictions have been imposed on the practice of medicine, dentistry, and pharmacy, but with considerable modification as regards the measure of protection extended by the State. Individuals desiring to practise in this country, in a legitimate manner, any of the professions mentioned, are expected to prove their fitness to do so, and must acquire licences in the form of degrees, diplomas, or certificates, but they are not otherwise protected from competition by unqualified persons. Lawyers are probably as fully protected in the exercise of their profession as it is possible for them to be; but the practice of medicine, dentistry, or pharmacy is free to anyone. In regard to pharmacy, in particular, it is notorious that State protection is virtually non-existent, despite the fact that the Legislature has thought it to be expedient for the safety of the public, to enact that none but duly registered persons should carry on the business of chemists and druggists, and has for nearly a third of a century imposed statutory restrictions upon the conduct of that business in Great Britain. The liberty of the individual, in regard to the exercise of the business of a chemist and druggist, has been interfered with in a marked degree by the State; but practically no corresponding advantage has been secured to him, and the bargain struck between chemists and druggists and the State in 1868 has proved to be a very one-sided one.

It is, however, beyond question that it was not only thought desirable, but also intended, at the time of the passing of the Pharmacy Act, 1868, that the practice of pharmacy should be regulated and restricted. The General Medical Council, which had previously represented to the Government the urgent necessity of regulating the practice of pharmacy by chemists and druggists, had taken steps to ensure that such should be the case when the Pharmaceutical Society took up the matter and, on behalf of chemists and druggists, submitted a Bill to Parliament in 1864, which distinctly provided for the limitation of the practice of pharmacy by proposing that it should be unlawful for any but duly registered persons to use the style or carry on the business of a chemist and druggist in the keeping of open shop for the compounding of the prescriptions of medical practitioners. The simultaneous proposal of the United Society of Chemists and Druggists—that the retailing of drugs should be limited to duly registered persons—was not supported by the Pharmaceutical Society or by the Medical Council which strongly disapproved of such a restriction. In the result, the Legislature decided neither to regulate the practice of pharmacy nor to restrict the sale of drugs, but only to limit the sale, dispensing and compounding of poisons, and the keeping open shop for those purposes. In 1869, we find the medical officer of the Privy Council repeating in his official capacity that "it had long been a desideratum in Great Britain as regards the practice of pharmacy, that this skilled commerce, where unskilfulness means very serious danger to the public health, should only be open to persons whose qualifications for safely practising it has been tested by proper examination," and then expressing his opinion that there was ground for satisfaction in the prospect that the system which the Pharmacy Act of 1868 had brought into operation would provide "adequate security to that very important effect." That this anticipation has not been realised, is now matter of common knowledge, but it may be usefully quoted as indicating that the Act was expected in official circles to be much more far-reaching in its effects than we now know to be the case.

The problem now before chemists and druggists is how to secure realisation of the idea that was prominent in the minds of leading pharmacists and medical authorities more than thirty years ago, that is to say the restriction of the practice of pharmacy to duly qualified persons, as intended by the Legislature in 1868 — witness the preamble to the Pharmacy Act of that date, the attitude of the General Medical Council at the time, and the remarks of the Medical Officer to the Privy Council, quoted above. That intention has not been carried into effect. It never will be carried into effect unless registered chemists disabuse their minds of the misconceptions referred to last week as influencing so many of the craft and even inducing some of them to suggest opposition to what is proposed purely and simply in their interest. Why a spirit of antagonism should excite opposition to suggestions for improvement is past comprehension. A much more rational frame of mind would be indicated if everyone legitimately interested in the matter would strive to agree as to the provisions of a Pharmacy Bill which there may be a reasonable prospect of passing into law, rather than endanger the chance of any measure that may be drafted by seeking to include in it provisions, but which are not equally easy of attainment. It is useless to ignore the fact that a Bill embodying all that could be desired by registered chemists must of necessity be overloaded and foredoomed to failure. Such a Bill would fail to secure adequate support, even on the part of those for whose benefit it was drafted, because the hopelessness of attempting to proceed with it would be recognised from the outset. Let us be reasonable, therefore, and do the utmost we can for our craft, but remain neutral if we cannot conscientiously struggle for part only of what we desire.

ANNOTATIONS.

The Poison Regulations now in force have been referred to with approval by a number of Metropolitan and provincial newspapers during the last few days, and one or two have actually recognised that the regulations have the force of law, though they have not been considered by the Legislature. The comments offered in certain instances are somewhat odd, and others are hardly justified by the facts. For example, the *Globe* thinks the regulations will do much to prevent accidents, but why or how is not explained. The same paper also suggests that it is no use putting the chemist under restrictions "when the would-be assassin can get poison enough to kill a regiment from the photographer's next door (*sic*)." If the writer of those words can produce evidence in support of his statement, he ought to communicate with the Registrar of the Pharmaceutical Society, and steps will soon be taken to stop the illegal trade assumed to exist between would-be assassins and photographers. The *Daily Mail* has been sufficiently enterprising to reprint in full the Order in Council referring to the regulations, remarking that "the new regulations for the sale of poisons are excellent, and should do much to prevent cases of accidental poisoning." Again we ask: Why? It will be time to talk like this when any registered chemist has been shown to be responsible for a case of accidental poisoning. Such cases, the *Daily Mail* is of opinion, "cannot be altogether eliminated while stupid people exist, but legislation has now done its very best." That is to say, what protection against accidental poisoning can be afforded by legislation is worth nothing, for legislation has done nothing at all. The London correspondent of the *Western Morning News* is still more at sea, for he says the Pharmaceutical Society has just passed a law which "Parliament would probably not have touched for a generation or two." The same sapient individual makes the marvellous statement that chemists and the law have hitherto "carefully arranged that there should be as little difference as possible in the dark or in a dimly-lighted room between a bottle containing medicine and one filled with deadly poison. It was to this simple arrangement that we owed the death of Professor Tyndall." To say that this statement is inaccurate is to put the matter very mildly. No registered chemist had anything to do with the accident that caused Professor Tyndall's death, and there has been no such arrangement as that foolishly or maliciously suggested. As to the future, the business arrangements of chemists are not likely to offer greater security to the public than they have done for many years past.

Pharmaceutical Measures are the subject of a Board of Trade Memorandum issued on February 14, a copy of which has been furnished to us by the courtesy of Mr. H. J. Chaney, of the Standards Office. The object of the Memorandum is apparently the enlightment of those who might possibly be confused in regard to the use by the Pharmacopœia authorities of a metric capacity-unit differing from that recognised by the Standards Office. The metric capacity-unit defined in the Order in Council, dated May 19, 1898, is that containing a litre (the volume of a kilogram of water) at 4° Centigrade, and from that—the only true metric capacity-unit — the Pharmacopœia litre at 15°·5 Centigrade is ascertained. Metric standard measures used by local inspectors are verified in relation to the litre at 4° Centigrade, but the capacities of graduated glass standards used by inspectors in testing pharmaceutical measures are adjusted "at 15°·5 Centigrade or in ordinary air." A litre measure for pharmaceutical use, therefore, should hold at 15°·5 Centigrade one kilogram weight of water at that temperature, but unless metric glass measures have that temperature or its equivalent (60° Fahrenheit) marked on them, it is always to be assumed that they have been graduated at 4° Centigrade. Readers should be careful, therefore, not to purchase, for use in their business, metric glass measures which have not the proper temperature of adjustment marked on them.

The Practice of Pharmacy by Companies was referred to in the House of Commons on Monday night, when Dr. Tanner asked the Chief Secretary for Ireland whether he was aware that persons convicted of offences under the Pharmacy Acts could place themselves outside these Acts through their incorporation under the Companies Acts; whether companies could be registered to do acts for which qualification by education and examination was required by law; and whether the Government would take into account and remedy those grievances complained of by the Pharmaceutical Society of Ireland? Mr. Gerald Balfour replied that the matter complained of had formed the subject, last year, of a correspondence between the Pharmaceutical Society of Ireland and the Select Committee of the House of Lords on the Companies Acts Amendment Bill. The subject appeared to be one calling for consideration when any amendment of the law was proposed affecting Great Britain and Ireland as a whole. Dr. Tanner then asked when he might expect attention to be given to the matter, but Mr. Gerald Balfour could not say.

A Question on Patents was put on Tuesday by Mr. Cawley, who asked the President of the Board of Trade whether a patent expiring in either France, Germany, or the United States must simultaneously expire in the other two countries, while in the United Kingdom the same patent might afterwards run on to the end of its term, notwithstanding that it had ceased to exist in the aforesaid countries. Mr. Ritchie replied that he thought the hon. member's question was founded upon some misapprehension of the existing position of this subject. In the United Kingdom the duration of a patent is not affected by the expiry of a patent for the same invention in any other State. There appears, however, to be no difference in this respect between the law in this country and the laws which have been in force in Germany for many years past, and in the United States since January 1, 1898. According to the old French law, the duration of a patent in France could not exceed that of a patent for the same invention obtained abroad, but by the protocol of the International Convention signed at Brussels in December, 1897, the several States of the Union, including France, agreed that patents in those States should be independent of the patents for the same invention obtained in other States.

The Imperial Institute was also the subject of a question in the House of Commons on Tuesday, when Mr. Chamberlain stated that he believed a conference of representatives of the Government, the Imperial Institute, and the London University would shortly take place to consider whether a part of the Institute buildings can, with due regard to all existing interests, be made available for the accommodation of the London University, as reconstituted by the Act of last Session. Until the result of the deliberations of the conference is known, it would, he suggested, be premature to consider what, if any, further steps should be taken in the matter.

The Proposed University for Birmingham is being substantially supported in a most practical fashion by the local manufacturers, the latest subscribers to its funds being the shareholders of

the Patent Nut and Bolt Company (Limited). At the annual meeting of the Company it was unanimously decided to contribute five thousand pounds to the fund which is being raised for the establishment of the University. The Chairman said that, as he understood the matter, it was the intention of the proposed University to place itself in a position to educate and train the minds of those who sought its benefits, so that there should be no question as to our future manufacturers, merchants, and traders being educated gentlemen, and as capable in their various positions to compete with those who were trained in other countries by universities of a similar character to the one it was now proposed to establish in Birmingham. The directors expect, first, an independent chair for teaching mechanical engineering in the highest sense of the term; second, an independent chair for instruction in all classes of mining; third, an independent chair for instruction in the science of metallurgy; and, fourth, an independent chair for commercial instruction, including accountancy and modern languages.

The Lord Chief Justice has been saying a word upon the question of honest trading in its relation to company promoting, and the taking of illicit commissions. He hopes that the Legislature will frame laws to deal with these two subjects, and he trusts that honest men will not be frightened to join boards of directors by reason of the stringency of an Act of Parliament. He does not believe that an honest man need fear the stringency of an Act of Parliament, and he should like to see brought into the law of company promoting the principle already recognised in other matters — such as marine insurance— that every man who is responsible for putting before the public, by prospectus or otherwise, an inducement for the public to subscribe capital should be bound to set out in the document every fact known to him that would affect his judgment as a reasonable man in taking or not taking the shares he is inviting others to subscribe for. Upon the subject of illicit commissions Lord Russell himself is going to bring a Bill into Parliament this session. He has been forced to do this, he says, by his knowledge, partly professional and partly judicial, of the canker of the system of secret commissions, to which many men who hold their heads high are parties—a canker of commissions illicity received and given, to the prejudice of the honest and upright trader. Nothing was said by his Lordship about one-man companies or companies formed to evade Acts of Parliament regulating professional practice, but possibly he is no less sound on these points than on those he did refer to. It is interesting, by the way, to note that no less than twenty-five out of the forty-four ministers of the Crown hold among them forty-one directorships in public companies. How that will affect matters remains to be seen, but it is ominous, to say the least.

Home-made Poison was employed in a fatal case of poisoning investigated by the Croydon Coroner a few days ago. The deceased had been a clerk in the Post Office, but was out of work at the time of the tragedy. On Saturday night last he went to bed at eleven o'clock, but did not get up on Sunday morning, and when his room was entered at midday he was found unconscious, and he died at midnight. The medical evidence showed that death was due to hemlock, and it was suggested that the deceased had gathered the plant and prepared the poisonous dose from it himself. The jury returned a verdict of suicide during temporary insanity, but that verdict does not seem justified by the business-like manner in which deceased went to work to relieve himself of the cares of this world. Other poisoning cases reported this week include one in which chloroform had apparently been added to the family soup and another in which a solution of atropine found its way by some means into a rice pudding. Fortunately there were no fatalities in those cases. Strychnine on toast was the most novel idea of the kind previously recorded, and it seems as though the art of poisoning was being cultivated in the kitchen more than elsewhere at present, and suggests the possible need for regulations as to domestic storage of poisons.

As an Object Lesson, not to be followed by chemists and druggists at the present time, Mr. Wilkinson, of Colne, when speaking at the dinner of the North-East Lancashire Chemists' Association, referred to the kind of united action exercised by parties concerned in the passing of the Pharmacy Act, 1868, and he thanked Mr. Rymer Young for the able and comprehensive manner in which he had elucidated the manifold defects of that Act in the paper recently read by him before the Manchester Pharmaceutical Association.

The Fresh Botanical Specimens exhibited in the Museum of the Society during the past week have been *Acacia dealbata*, *Citrus medica*, var. *β Limonum*, *Peumus boldus*, *Pilocarpus pennatifolius* in flower and fruit, and *Prunus amygdalus*, contributed by Mr. Thomas Hanbury, F.L.S., of Ventimiglia; and a specimen of the arum lily (*Richardia africana*)—in which the leaf has become almost entirely white like the spathe, illustrating the formation of the spathe from a leaf—contributed by Mr. Mellor, of Hemel Hempstead.

The Nature of Vinegar was under discussion at Bristol Police Court last week, and for once common-sense triumphed. The inspector under the Sale of Food and Drugs Act had asked for vinegar, and been supplied with coloured dilute acetic acid. He argued that he ought to have received malt vinegar, and the solicitor for the prosecution did his best to confuse the magistrates by quoting from the 1885 Pharmacopœia, and suggesting that vinegar is not official in the new Pharmacopœia, because Dr. Attfield had found it inconvenient to retain the old monograph after the evidence he gave in the celebrated Birmingham case some time ago. Fortunately, the County Court Judge for the district was on the bench with other magistrates, and he was in an eminently logical frame of mind. The allegation, he pointed out, was that the defendant, to the prejudice of the purchaser, had sold an article of food which was not of the nature, substance, and quality of the article demanded by the purchaser. What was demanded was a pint of vinegar, and that which was supplied was a pint of something known as wood vinegar, and commercially known as vinegar. In the opinion of the magistrates, he said, the long discussion which had taken place in regard to the differences between fermented vinegar and wood vinegar was very little to the point. If a thing which was sold to that particular purchaser was something which could possibly be called vinegar, and if it was something which had been commercially known by the name of vinegar, it seemed to them that no offence had been committed against the Statute. The varieties of vinegar were several; there was vinegar made from malt, vinegar made from alcohol, cider vinegar, date vinegar, and wine vinegar, the last named being the original preparation known by the name of vinegar. A purchaser who sought to protect himself should ask for that particular species of vinegar which he desired, and if he asked for vinegar pure and simple, it was not an offence against the Act if he was served with something commercially known as vinegar, even though cider or date vinegar, or distilled wood vinegar. In the opinion of the bench, that consideration of the matter disposed of the case, and the magistrates were of opinion

that there had been no offence under the section of the Act under which the prosecution was brought. The summons was therefore dismissed.

The New Electric Lamp, invented by Professor Nernst, of Göttingen (see *ante*, p. 17), was described by Mr. James Swinburne at a meeting of the Society of Arts last week. A small rod of refractory material, mainly thoria, is supported between two platinum electrodes, and when heated becomes a conductor of electricity. The rod is first gently heated with an ordinary match, until it begins to conduct; the current then passes and further heats the rod until it becomes intensely incandescent and gives out a beautiful white light. An automatic lamp has also been devised, which is lighted by simply turning a switch, the required heating of the rod being effected by means of a platinum resistance arranged close to it, which is automatically cut out as soon as the rod becomes hot enough to conduct. The consumption of energy in this lamp is stated to be about 1½ watts per candle, including a small series resistance, which is required to correct some instability in running on supply circuits caused by the resistance of the rods decreasing with rise of temperature. The life of the lamps was at present about 500 hours in good examples. Those supplied with the automatic lighting arrangement are more expensive than the ordinary carbon-filament lamps, but while the latter became perfectly useless as soon as the filament has gone, in the Nernst lamp it is an easy matter to replace the broken rod with a new one. The Nernst lamp too can be adapted to higher electrical pressures, 500 volts being quite practicable. Moreover, it seems possible that it may be made to stand much greater variations of pressure, and if that proves to be the case it will mean an enormous difference in the designing of distribution mains. The lamp works equally well on alternating and direct circuits and does not need to be enclosed in a vacuous space.

The Recent Linen Test Case is a cause of much soreness to London drapers, their grievance being that one of their number was fined for selling as linen a towel containing cotton. At a meeting held a few days ago, to discuss the matter, the usual amusing reasons advanced by those who desire to trade unfairly were put forward, the Chairman remarking that he did not believe the Belfast Linen Merchants' Association, which had promoted the case, would benefit much by the prosecution. At any rate, he said, the conduct of the prosecution in engaging paid spies to go round the trade in an artful manner to try and trap unwary assistants could only be described as contemptible. He understood that the recent case was only the beginning of a general campaign. If traders were to be harassed in this way their only remedy was unity. They should have an association to protect their interests, come what might. Mr. Jones, the defendant in the case referred, was going to appeal against the recent decision, and he was glad that was the case, as it was very desirable to have an authoritative judgment upon the question at issue at a very early date. Subsequently, a resolution was passed to the effect that the time had arrived when retail drapers should associate for the promotion and defence of common interests, and that for such purpose a drapers' chamber of trade should be founded. A resolution of sympathy was also passed to the firm of which Mr. Jones is the head at the invidious position in which they had been placed by the recent prosecution. But why should so much fuss be made because a fraud on the public has been disclosed and justice done? Cotton is not linen and no court of law can make it so.

PARLIAMENTARY NOTES.

The Shops Early Closing Bills, with which the names of Sir John Lubbock and Sir Charles Dilke respectively are associated have been reintroduced without alteration this Session. The first, it will be remembered, permits registered chemists to supply medicines, drugs, and medical appliances after the hour proposed for the closing of shops, but the pharmacies must not be kept open after that hour. The Dilke-Burns-Davitt Bill, however, would allow a wider exemption, as it is not intended to apply to shops kept open solely for the sale of medicines, or medical or surgical appliances.

Another Bill, backed by Messrs. Dilke, Burns, Davitt and Co., embodies an ingenious attempt to deprive several Government supporters of their seats in Parliament. It proposed to establish a single franchise at all elections, and thereby to abolish University representation; a secondary object being the removal of "the disabilities of women." Not the physical disabilities, of course, but only such as prevent women becoming members of either House of Parliament, or of a borough or county council, or from exercising any public functions whatever.

The Public Health Acts Amendment Bill, brought in by Sir Alfred Hickman and Sir Walter Foster, is chiefly remarkable for the many interferences with the liberty of the subject proposed in the interests of the public health. Dairymen are to furnish lists of customers in certain cases and of sources of their supply of milk, to notify infectious disease existing among their servants, etc., and cases of tuberculosis. Persons engaged in washing or mangling clothes are also to furnish lists of owners of clothes in certain cases, infected persons must not carry on business, precautions are to be taken against infection of books in public libraries, and in innumerable other ways life is to be made a burden to the great unwashed and those who suffer by contact with them.

The Companies Bill, re-introduced by the Earl of Dudley, has already been read a second time in the House of Lords and referred to a Select Committee. Mr. Faithfull Begg's Bill dealing with the same subject is down for second reading on June 7. Mr. Flynn (Cork, N.) has asked the Attorney-General whether he is aware that, owing to the fact that under the Companies Act of 1862 (Section 49) it was provided that a meeting of shareholders should be held at least once a year, but that no penalty was mentioned for non compliance with this provision. He also stated that in the case of several companies meetings were not held once a year, and the shareholders were at the mercy of the directors; and, asked whether Sir Richard Webster would recommend such an amendment of the Act as would provide a penalty for non-compliance with the Section referred to. The Attorney-General acknowledged that it is true there is no penalty for non-compliance with the provisions of Section 49, but, he argued, penalties can be enforced because, by Section 26, annual returns have to be made subject to a penalty, and it has been decided that the fact that no meetings have been held affords no answer to proceedings for penalties. Suggestions for amending the law in this respect have already been considered by the Committees which have been investigating the provisions of the Companies Acts, and Sir Richard had no doubt the hon. member would have an opportunity during the present Session of proposing some amendments of the law. Another question dealing with companies is referred to at page 152.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The fact that the Junior Pharmacy Ball was held the preceding evening, probably influenced the attendance at 73, Newman Street, W., on Thursday, February 9, there being but a small number present. Nevertheless, a lively discussion was elicited by the paper read by Mr. F. A. Upsher Smith, Demonstrator of Pharmacy in the Pharmaceutical Society's School, on

The Alleged Decline of Pharmacy and Pharmaceutical Research,

Mr. Smith, after a few remarks upon prophets in general, and those in the world of pharmacy more particularly, said it was generally agreed that the conditions of the pharmacy of fifty years ago are gone for good; moreover, the days of ordinary 1899 pharmacy are numbered. Amongst the causes that have tended to bring about the present condition of pharmacy he placed first the natural law of universal change; next, the fierceness of modern competition. Whilst admitting that the opposition of limited companies is a real grievance, still it should be remembered that, without that opposition, the old-style pharmacy would not suffice for the twentieth-century public. Pharmacy, to be a permanent institution, must go with the times. It must widen its scope. The upgrowth and prosperity of large limited companies had proved that as a vendor of toilet articles and proprietary goods the pharmacist can be dispensed with. The suggestions for a new Pharmacy Bill lately drawn up would, it was true, if made law, restrict legitimate pharmacy to qualified men; it was an end worth working for, and he thought the Council of the Pharmaceutical Society deserved and had a right to expect the support of every registered man in trying to make it law. Nevertheless, there would remain doctors who dispense, as well as hospitals and infirmaries where the poor and often the well-to-do would receive medicines free of charge. These considerations alone should lead the pharmacist to cast about for other adjuncts, and in his opinion the pharmacist's suitableness for scientific work is forcing such work upon him. A practical knowledge of bacteriology and analysis would provide a capable country pharmacist with a fair amount of work in staining, mounting, and identifying bacteria, and in analysing urine, water, gas, manures, tea and coffee, and other foods. A knowledge of X ray photography, hygiene, and the elementary principles of first-aid to the injured, would also be of practical assistance, and for other hints on aids to business Mr. Smith referred his hearers to a paper by Dr. F. J. H. Coutts, which appeared in the *Pharmaceutical Journal* of January 14 last, page 46. The rage for cheapness was another cause for the present condition of things pharmaceutical; the ignorance of medical men as regards drugs was also a growing evil from which the pharmacists of to-day suffer. The modern medical man is, as a rule, woefully at fault in prescribing, his prescriptions being somewhat akin to the following:—

Tablet anything Co. (A. and B), XL.
Label according to the printed instructions.

The foregoing adverse influences came from without, but the pharmacist was also open to danger from within, such as a dingy, dirty-looking pharmacy, long hours which deprive him of his natural energy, laxity and carelessness in the matter of accounts and stocktaking, a scanty reference library, and a want of acquaintance with current scientific literature. Passing to the question of pharmaceutical research, Mr. Smith said there were not wanting men who talk of its decline. Secretaries of pharmaceutical associations complained, and with good reason, of difficulty in obtaining original papers on subjects connected with pharmacy. He thought that was largely accounted for by the fact that in the hurry of business, no note was made of experiments made possibly to clear up a point of difficulty, or the matter was not considered by the investigators to be of sufficient importance to place on record, or it might be thought that the same results had been published by another. Thus the world lost the value of the work expended. The "short paper" evenings of that and similar associations he thought were excellent for bringing out seemingly trivial points; another way in which to encourage pharmaceutical research, especially in connection with the galenicals of the B.P., would be to form a small research committee in connection with the Association, whose main duty should consist in bringing into notice unsatisfactory preparations, and subsequently in examining the experiments made to improve them. A fund might be set aside for out-of-pocket expenses, and at each ordinary meeting a short time could be devoted to the discussion of one of these galenicals. If this were done, he thought they could hardly fail to improve the formulæ in question, if capable of betterment, and by publishing the results of these practical investigations, much good would be done to British pharmacy and honour gained for the Association. In conclusion, he expressed the opinion that there is a future for pharmacy whose record bids fair to eclipse that of the past in usefulness and honour.

The President (Mr. F. W. Gamble) was not altogether in accord with Mr. Smith's views on pharmacy generally. With regard to the allied sciences—bacteriology, analyses, etc.—he thought it extremely difficult for the average pharmacist to study, and, if proficient, to employ his knowledge of such sciences to his pecuniary advantage. His ordinary business duties as a rule occupied too much of his time. Pharmacists in the West-end saw a great deal of the analysis of urine, water, sputum, etc, and, therefore, were sometimes inclined to look, as it were, through coloured spectacles on the ability of the average pharmacist. But he was afraid even where they had time and opportunity only a few pharmacists were capable of undertaking analytical work. He thought the time is coming when such work will be the sphere of the analyst proper, and that in the near future anyone who undertakes analyses must be a Fellow of the Institute of Chemistry. With regard to company pharmacy, it must bo remembered that there was keen competition within the ranks of pharmacy itself, and he was not sure that it had had altogether an evil influence. He could imagine that two or three decades ago, without competition, it was probable that the ordinary pharmacist would have been content with his position, and would not have had sufficient energy to improve himself. Competition had aroused him, and under its stimulus he had benefited and was more educated. He was quite in accord with Mr. Smith's remarks about the difficulty of getting papers on original work from members. As officers of the Association they could speak feelingly on the subject. Nothing better could be desired than that they should have some practical papers each week, but they could not get them. The idea of a research committee of the Association would be very good if it could be carried to a successful issue, and would be worth the effort, but the fact remained that there is undoubtedly a disinclination on the part of the pharmacist towards original work, possibly on account of his not being well placed and for want of time.

Mr. C. Morley was of opinion that if any chemist at the outset of his career was qualified to undertake the analysis of gases, etc., he would find very little work to do, and would probably, for want of practice, lose the knowledge he possessed.

Mr. Hymans thought that the pharmacist should stick to his pharmacy. The pharmacists capable of doing analytical work could, he thought, be counted upon one hand. The scope of analyses seemed to be tending towards specialisation. The examination of the Institute of Chemistry was vastly different now to what it was some years ago, being split up into various branches. What the present-day pharmacist needed more than a knowledge of bacteriology, analyses, etc., in his opinion, was a knowledge of the galenicals of the B.P., and that he should study more the professional side of pharmacy, and not depend so much on the wholesale house.

Mr. T. Morley Taylor, while agreeing with Mr. Hymans that analytical work should be in the hands of specialists, was of opinion that ordinary clinical analysis could very well become and be recognised as the special work of the pharmacist. Mr. Smith, he thought, had not sufficiently mentioned the influence of competition on the training of apprentices. It was largely the result of competition that apprentices are not now so well trained in the art and practice of pharmacy as formerly. With regard to cutting, he thought a pharmacist, in charging a respectable price for an article, should be able to show the public that he does so on the ground that he cannot guarantee it for less. As to Mr. Gamble's remark, that in the near future analyses would be in the hands of Fellows of the Institute of Chemistry, he did not agree with him at all. If there was any likelihood of such being the case, the matter would have to be fought. Seeing that pharmacists have the only legitimate right to the title "Chemist," he thought it would be unwise to allow any restrictions to be put upon them. They were the first properly educated chemists, and should be able to undertake analytical work.

Mr. George Roe was inclined to agree with Mr. Gamble that the competition of companies has tended to stimulate the pharmacist and to develop in him better business ability. Referring to

doctors prescribing, he was decidedly of opinion that there has been considerable deterioration in that respect. So long as there are so many ready-made concoctions he thought there was not much encouragement for pharmacists to pursue original research, still, the idea expressed by Mr. Smith with reference to the formation of a research committee, was worthy of consideration.

Mr. Smith, in reply to Mr. Gamble, did not for an instant suppose that every pharmacist would or could develop all the side-lines enumerated. It was for every man to decide for himself what extras it was worth while for him to undertake. There were many pharmacists, besides those in the West-end, who had so enlarged their scope, and found that in so doing not merely was it remunerative, but created or deepened a better feeling between themselves and medical men. Having replied to other points raised, the meeting adjourned.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

The annual dinner of the North-East Lancashire Chemists' Association was held at the White Bull Hotel, Blackburn, on Thursday, the 9th inst. Councillor Critchley, President, occupied the chair, and there was a large attendance, between seventy-five and eighty being present. Dr. Symes, of Liverpool, who had promised to attend, was unavoidably absent through illness.

Mr. Lomax (Darwen), in proposing the toast of

The North-East Lancashire Chemists' Association,

said that during the past year it had been very energetic. Not only had it increased the number of its own members, but it had taken a great share in the formation of local associations at Darwen, Accrington, Preston, and Burnley.

Mr. R. Lord Gifford, who responded, said the Association had during the past year been trying to look at the question of pharmacy legislation from a common-sense point of view, and he thought he was justified in claiming that the Association had diagnosed the situation somewhat accurately. The whole history of pharmaceutical legislation seemed to him to be a remarkable instance of how not to do it. The Council of the Pharmaceutical Society had told them that what was needed was for all chemists to become members of the Society, and then they could do as they liked. To this the Association replied that what was needed was for the Council to formulate a sensible policy, and increased membership would follow. The policy of the Association had been justified in the best way, that of success. As to their future policy he thought he might safely say it would be a continuance of the past. They had seen during the past week the draft of a suggested new Pharmacy Bill, which would be a surprise to many. The great value of the proposed Bill lay in its simplicity. It included a declaration of the personality of qualification; that was a point the Association had always insisted upon. If they could not get personality of qualification there was no qualification at all. Chemists, however, must be prepared if they secured this individuality to take its responsibilities and consequences. In the first place the Widows' Clause must go, for when a man died the law could not recognise his widow. The second clause of the Bill laid it down that medicines should be sold, dispensed, or compounded only by qualified chemists. The two things were so elementary that the man in the street simply wondered why there was any question about them. Their Association had taken its stand on these things, and he believed they would have the help of the medical profession in whatever they meant to do in that direction. It was a standpoint which no reasonable person could object to, and he thought that if they took a firm stand on those simple points they were much more likely to attain success than if they were to bother themselves with any side issues. They were simple matters, and one would naturally think that there would be no difficulty about the necessary legislation, and he indeed believed firmly there would be no difficulty provided one condition was fulfilled. That condition was unanimity amongst the chemists themselves. If the chemists of the country threw off their lethargy and pressed unanimously for these things they could not be refused, because their demand was simply for elementary justice. It would be well if, in these matters, they realised who were their friends and who were their enemies. There was one organ which said they ought to have free trade in pharmacy, and when referring to the agitation for the abolition of the Widows' Clause, asked why chemists should be called upon to submit to such a sacrifice as is suggested? It would be impossible to put more lying innuendo in a paragraph than was contained in the article referred to.

Councillor James Law proposed the toast of

Pharmacy.

He said he sympathised with pharmacists in their effort to make better conditions for themselves. He could not see why one man should be compelled to qualify himself and pass severe examinations when other men were allowed to sell exactly the same drugs without any qualification at all.

Mr. Edward Evans, jun., in responding, said he was only too pleased to do all he could in backing up what he thought was one of the most live chemists' associations throughout the country. Their Association, he considered, had done particular service in directing the attention of the trade to various matters by its activity. It was not always necessary to agree with what an association said or did, but in these days when they all suffered a great deal from apathy he thought that if by their activity they could get rid of that apathy they were deserving of the recognition of their fellow chemists throughout the country. They were not agitating simply to obtain higher prices and larger profits. They were face to face with the fact that they had to pass certain examinations if they would enter the profession, and they believed that they had the right to expect from the Legislature which had in the public interest placed upon them the necessity to pass those examinations the naturally corresponding advantage so that they might not have illegitmate competition from those who were not qualified. That, he believed, was the sole reason for the present agitation, and was the great desire of chemists throughout the country. He was optimistic enough to think there was still a future for the individual chemist, and he also thought that the man who had qualified by examination was bound to be better than the man who had not. All that phamacists wanted was just that little bit of recognition, which was laid down in the suggested draft Bill to which reference had been made.

Mr. Heaton, of Burnley, in proposing

The Pharmaceutical Society,

said they all recognised the Society to be the only body that could with any prospect of success promote legislation for chemists in England, therefore, it was their duty to support it in every possible way. He was glad to say that the feeling that the Society was not acting for the benefit of the country members was quickly disappearing. If every chemist were a member of the Society they could soon bring about reform in the pharmacy laws.

Mr. Wilkinson, of Colne, supported, and in speaking of the unfavourable conditions under which the Pharmacy Act was passed, said it should be remembered to the credit of the Pharmaceutical Society and the General Medical Council that if its provisions had been such as those bodies desired, the Act would have been of far more advantage to chemists and druggists and also more conducive to the safety of the public than it has been. He hoped the same blunder would not be repeated now, and disclaimed any sympathy with the carping criticisms of many members of the trade, and especially of a certain journal professing to be a trade organ. The action of the Council of the Society is no longer ruled by owners of West-end pharmacies, as it includes members who know the grievances of provincial chemists and will do their utmost to remove them. But, he added, the Council must have their united support, and be provided by them with the sinews of war. He rejoiced to know that 600 of the "craft" had already enrolled themselves this year, though the outsiders are still in a majority of two to one. As an old member of the Society he had come out of loyalty to urge upon all the trade to enrol themselves forthwith, to play the man and down with the guinea, for their own sakes and for the sake of their families, as well as for the benefit of their craft in generations to come and in order to press upon the Legislature the illegality of the "Seven unqualified men companies." Mr. Wilkinson contended that since the Legislature has imposed conditions upon the exercise of the chemist's business, qualified persons are entitled to the correlative advantage arising from those conditions, and should not have a large proportion of their business taken away by persons who have not complied with the demands made by the Legislature in the public interest. In conclusion, the speaker expressed his opinion that it is an everlasting disgrace to the trade that it did not wage war against the effects of the adverse decision in the House of Lords some twenty years ago; but he held that with

united effort lost ground may yet be retrieved. He referred to Blackburn as the centre where many a victory has been won, and all engaged in textile industry know what is meant by the Blackburn standard list of wages. He was confident they would carry the new Bill, and that they would prove that these seven-men companies were illegal. Sir Ughtred Kay Shuttleworth, M.P. for the Clitheroe Division of Lancashire, had written him saying he would give the Bill his best attention, and that he was gratified they took such an interest in affairs that pertained more particularly to themselves.

Mr. J. Rymer Young, in responding, said the suggested Pharmacy Bill was really an endeavour to correct the weakness of previous Pharmacy Acts. Those who were responsible for the Act of 1868 had no idea of store trading, and the suggested Bill was merely an endeavour to bring back to the original position the individual qualification of the pharmacist. He asked them to look at the question of the "Widows' Clause" in a logical way. Was it reasonable for chemists to say that it was improper for seven unqualified men formed into a company to usurp the position of a qualified chemist even though they had a qualified assistant, and yet to say it was proper for the widow of a chemist, if unqualified, to take charge of her late husband's business with a qualified assistant? He was not prepared to say that the suggested Bill was perfect, but he had no doubt that, if it were proceeded with as it stood, little difficulties which arose would be settled in its passage through Parliament, and a workable sliding scale arrived at. It must be understood that it was the opinion of the Council that no good could be obtained if they proceeded with any idea of securing a trade monopoly for themselves. The only line upon which they could proceed was that of the protection of the public, and he contended that the new Bill was simply a modification of Acts which had been passed solely for the purpose of protecting the public, and not with any ideas of personal benefit at all. If the Pharmaceutical Council had not been as go-ahead eighteen or twenty years ago as it might have been, yet within the past six or seven years it had not been asleep, but had done much valuable work for pharmacy.

Mr. W. Holt, in proposing the toast of

The Medical Profession.

referred to the friendly attitude of local doctors towards the Association. They had received much encouragement and advice from individual members of the profession. He advocated an appeal being made to the general medical body for their sympathy and assistance in getting the suggested Bill passed into law.

Dr. Pollard, responding, said he had observed that night, and for some time he had noted the unity and good-fellowship which existed between the medical men and chemists of Blackburn. It appeared from what had been said that there was a dark cloud hanging over chemists. At the same time there was a similar cloud hanging over the medical profession. but he hoped that if the unity between the two professions continued, by introducing Bills into Parliament they would have the dark clouds removed, and in a short time they would be living in a clear and bright atmosphere.

Dr. Rigby, who also responded, said the feeling which existed between the two professions had been in no way exaggerated by Dr. Pollard. He had the greatest sympathy with the remarks about the sale of poisonous drugs by men who were not qualified chemists, and he thought that any Act that might be passed by Parliament to prevent the sale of such drugs would have the support of the entire medical profession.

Councillor Ralph Shorrock proposed the

Federation of Local Associations.

He said chemists had a good claim upon the consideration of Parliament, and he urged them to bring high pressure to bear on their Parliamentary representatives to support the measure of the Council. Federation was the one great power which would work more than single societies.

Mr. Cowley, of Liverpool, Secretary of the Federation, responded, and said the North East Lancashire Chemists' Association was known throughout the country for its vigour, and had shown there was life in the pharmacist yet.

Mr. Smith, of Liverpool, said he would like to see the Council making more use of the Federation, which was capable of doing many things which were outside the business of the Council of the Pharmaceutical Society.

Mr. Joseph Hindle proposed the toast of "The Visitors," which was responded to by Councillor Green, J.P., and Councillor Laurie, while Mr. Haworth gave "The President."

LIVERPOOL CHEMISTS' ASSOCIATION.

The first general meeting of the fiftieth session of this body was held at the Royal Institution, Liverpool, on Thursday evening, the 9th inst., Mr. H. Wyatt, jun., in the chair. Mr. J. N. Evans was elected a member. A specimen of

Mulungu or Murungu Bark

was exhibited by Mr. T. H. Wardleworth, who stated that it was said to be derived from a leguminous tree, *Erythrina coralloden-dron*. Though not much used in England, nerve tonic and sedative properties have been claimed for it, and an active principle—erythrine—has been isolated.

In the absence of Professor Boyce, of University College, who was to have delivered a lecture on

Bacteriology in Relation to Pharmacy,

and who was unable to be present, owing to a severe attack of influenza, Professor Grünbaum, of Vienna, kindly undertook to lecture instead, taking the same subject. In the course of his lecture, Professor Grünbaum rapidly passed in review the theories held with regard to the varieties of bacteria and their influence in disease and in their power of producing during their life history various bodies which had the property of rendering animals immune to the diseases caused by these bacteria. Practical directions concerning the making of sera and bacterial cultures occupied the remainder of the evening, and at the close of the lecture a good discussion ensued, after which a vote of thanks was accorded Professor Grünbaum on the motion of the Chairman, seconded by Mr. Wardleworth.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association held on Thursday, February 9. Mr. W. L. Currie, President, in the chair, sympathetic reference was made by the Chairman and other speakers to the death of Mr. Kinninmont, and it was left to the President and Secretary to draw up a letter of condolence to be forwarded to Mr. Kinninmont's relations.

Mr. Alexander Laing then proceeded to read a paper on

Amateur Pharmacists and the Pharmacopœia.

He referred to the fact that the General Medical Council had invited the Pharmaceutical Society to co-operate in taking steps for examining into certain of the criticisms made in regard to the B.P. of 1898, and for accumulating information which might be of service for the publication of the next Pharmacopœia. That he regarded as a sign that the Medical Council was coming to a more sensible state of mind. According to the Act which authorised the publication of the Pharmacopœia there was nothing to hinder the Medical Council from giving pharmacists the fully accredited share in its preparation, and commensurate with the important part pharmacy occupied in its pages. The new Pharmacopœia had met with a wider and better reception than any former issue, and the great improvements were in no small measure due to the valuable assistance given by all the Committee of the Pharmaceutical Society. Moreover, there was every reason to believe that if pharmacists were given a more accredited position and a freer hand they could give even better assistance. Tincture of opium would not be prepared according to the minutiæ of the official process. The old was better than the new liniment of belladonna. The formula for pil. ferri was amazing. One could imagine a first year's apprentice in a doctor's dispensary left to his own devices reaching the same end. It looked for all the world as if the ingredients had been added on the instalment system until a workable mass had been turned out. The new concentrations were to be highly commended just because they were concentrations. The fuss that was made over the loss of aroma was what nobody besides the sticklers for smell could understand. In these days of differentiation and standardising it is only mete that proper representatives should be chosen to do the class of work they were best fitted for. It seems very absurd to have the heads of the medical profession straining at the gnat of pharmacy in the making of their guide-book and their many members swallowing the camel of advertised therapeutics of sundry druggists.

In the discussion which subsequently took place Messrs. Brodie, Macmillan, Walker, Sutherland, and Watson spoke, and there was general agreement with Mr. Laing's views as to the position of pharmacists with regard to the work of Pharmacopœia revision.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

At a meeting of this Association held on Friday, February 11, Mr. John Evans in the chair, Mr. K. J. Padwick read a paper on

The Baobab Tree and Its Uses.

He showed that this tree, called by the natives of South and Tropical Africa the "Cream of Tartar Tree," or the "Monkey Bread Tree," belonging to the N.O. Malvaceæ, was formerly supposed to be the largest tree growing, but that distinction has since been proved to belong to the mammoth tree of Australia. He exhibited specimens of the fruit, which were covered with the down which characterises the fruit of this order. They were about 6 inches long, somewhat resembling a large pear, polycarpellary, with 8 or 9 loculi, and containing a considerable number of reniform seeds embedded in a farinaceous pulp. This pulp has an acid taste, and is used by the Africans as a febrifuge and for dysentery. It is also used by the natives of Bechuanaland, whence these specimens were obtained, as a cooling drink when mixed with water.

Exhibition of Lantern Slides.

Mr. Padwick exhibited lantern slides, which were greatly admired, of bird's-eye views of a Bechuana village, showing the baobab tree growing.

Professor Greenish then showed lantern slides of the Kreuznach springs. The photographs were obtained by Professor Greenish from the spot, and graphically illustrated the charming and picturesque scenery of this part of Germany. He described the processes by which the water is obtained from the springs, and gave an amusing account of his tour through those provinces, strongly advising members of the Association, when they went for holidays, to cultivate the habit of close observation, and to bring back anything interesting they might see for the benefit of the other members.

Mr. Garsed next read a paper entitled

Some Criticisms on the Education and Examination of the Pharmacist,

in which he attributed the present state of pharmacy to the low standard of the Preliminary examination. He regretted, moreover, that two such important subjects as history and geography should have been omitted from the new syllabas. He advised all ambitious apprentices to study for the London matriculation during apprenticeship. Referring to the number of failures in the Minor examination he advocated a compulsory curriculum. He emphasised the desirability of chemists going on for the Major, as it was impossible, with only the knowledge required for the Minor, even to understand the organic chemistry of the Pharmacopœia. He contended that pharmacists ought to strive to obtain a greater amount of scientific work, such as bacteriological examination and urine analysis.

Good discussions followed the reading of these papers, in which the greater number of members who took part were Minor students. The meeting then adjourned.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

At a special meeting of this Association held on Monday the President (Mr. P. F. Rowsell) occupied the chair and there was a good attendance.

P.A.T.A. Business.

It was decided that the members of the Association should respectfully urge the proprietors of non protected proprietary articles to add their preparations to the P.A.T.A. list; also that the members of the Association should refuse to distribute or exhibit any advertising matter relating to non-protected articles, and give any assistance in their power to the local representative of the P.A.T.A. (Mr. Rowsell) with regard to the suppression of unfair cutting. It was resolved not to recommend that any action be taken with regard to the Defence Fund or the photographic section at present.

Suggestions for a Draft Pharmacy Bill.

A long discussion took place with regard to the suggestions of the Council of the Pharmaceutical Society for a draft Pharmacy Bill, and eventually

Mr. Milton proposed that the principles of the suggestions for a draft Pharmacy Bill be approved, with the exception of those embodied in Clause 5. This motion was carried by the casting vote of the Chairman.

Subsequently, the Association's programme for the ensuing year was further discussed, and the meeting closed with a vote of thanks to the Chairman for presiding.

CHEMICAL SOCIETY.

A meeting was held on Thursday, February 2, the President, Professor Dewar, F.R.S., in the chair. After the reading and confirming of the minutes of the previous meeting and other formal business, the President announced that no less than eighteen papers figured in the programme of the evening. Of course, it would be impossible to get through them all, and many would, therefore, be taken as read and published in due course. These included:—"An Isomeride of Amarine," by H. Lloyd Snape, D.Sc., Ph.D., and Arthur Brooke, Ph.D.; "Derivatives of Dibenzyl mesitylene," by W. H. Mills and T. H. Easterfield; and "The Action of Chlorosulphonic Acid on the Paraffins and other Hydrocarbons," by Sydney Young, D.Sc., F.R.S.

The first paper was read by Dr. H. T. Brown, F.R.S., on some work done on

Starch Hydrolysis

by himself and J. H. Millar, partly in the Davy-Faraday Research Laboratory, during the past two years. It was divided into three parts, viz. (i.) "Malto-dextrin; its Oxidation Products and Constitution"; (ii.) "On Attempts to Prepare Pure Starch Derivatives through their Nitrates"; (iii.) "Stable Dextrin; Its Relation to Malto-Dextrin." Malto-dextrin is a substance obtained in starch hydrolysis. It is a cupric-reducing agent, and has the formula $C_{12}H_{22}O_{11},(C_{12}H_{20}O_{10})_2$. On mild oxidation, by means of mercuric oxide and barium peroxide, definite carboxylic acids are obtainable, having well-defined salts. In its preparation it takes several months of careful fractionation to obtain it in the pure state, and then the yield from, say, 2000 to 3000 grammes of starch, is only about 50 grammes. Its rotatory power is $[\alpha]_D = 181–183$, and it has a reducing power of 42-43. Malto-dextrin contains no maltose as such, though diastase converts it into maltose, whilst acids convert it into glucose. The authors suggest a constitutional formula for malto-dextrin, which may be thus represented in an abbreviated form:—

$$O\lessdot^{C_{12}H_{21}O_{10}}_{C_{12}H_{20}O_9}O\lessdot_{C_{12}H_{21}O_{10}}$$

The attempted preparation of pure starch derivatives through their nitrates may be called the history of a failure. Amyl-dextrin, malto-dextrin, and stable dextrin when nitrated and regenerated are not then recovered as such, owing to oxidation having taken place. With regard to the relation of stable dextrin to malto-dextrin, it appears, from the authors' researches that, while the former is built up of (C_6) residues, the latter is built up of (C_{12}) residues. Hence it is more stable. The empirical formula of stable dextrin may be thus given:—$(C_6H_{10}O_5)_{39}$, $C_6H_{12}O_6$. It may be regarded as a condensation product of 40 glucose molecules, with elimination of 39 molecules of water. The paper, which concluded with speculations as to the probable molecular weight and constitution of starch, drew forth applause from the large audience such as is seldom heard at the Chemical Society's meetings, and evoked an interesting discussion.

Dr. Armstrong referred to a comment which he once made with reference to a previous communication on the subject by Dr. Brown, "that there was not enough chemistry about it." He was bound to confess that the authors had not again laid themselves open to a like objection, indeed, on the present occasion there was even more than he could swallow. For example, he was not prepared to accept the constitutional formulæ put forward as anything more than tentative and preliminary. Dr. Armstrong went on to speak of the extraordinary machinery whereby the simplest of plants are able to build up starch in a few minutes. He cited spirogyra as an instance; if one of these little plants, free from starch, be placed in sunlight, it will be found to contain a perceptible quantity of this body in about five minutes. He felt sure that the authors were working on the right lines, and that in time they might be able to throw light on this, one of the most marvellous, and at the

same time, to the chemist at present one of the most humiliating secrets of nature.

Mr. Cross then spoke of the difficulties that attend work on complex colloidal bodies, and was followed by Dr. Morris and Messrs. Fenton and Ling, all of whom spoke in high terms of the research.

The next paper, by G. T. Moody, D.Sc., dealt with

Propylbenzene-Sulphonic Acids.

The author showed that there were considerable differences in the reactions of these compounds, compared with those of homologous compounds, in which the propyl grouping is replaced by ethyl or other groupings.

In the short discussion, Dr. Armstrong drew attention to this difference and, whilst vouching for the accuracy of the investigation, was at a loss to account for the anomalous behaviour of propylbenzene-sulphonic acid.

The hour being somewhat late the customary exodus of most of the younger members now set in, while F. D. Chattaway, M.A., gave a long series of papers on

Nitrogen Iodide

by himself in conjunction with Kennedy J. P. Orton, M.A., and H. P. Stevens, B.A. These dealt with its preparation, reactions, composition, and properties, and the theory of its formation and reactions. The method of preparation recommended by the authors consisted in adding ammonia solution to potassium hypoiodite, formed by the addition of iodine monochloride to potassium hydroxide solution, according to the equation

$$ICl + 2KOH = KOI + KCl + H_2O.$$

The nitrogen iodide rapidly separates in the crystalline form on the addition of ammonia solution. It may be mentioned here that the evident alarm evinced by many of the audience at the preparation of nitrogen iodide by the lecturer was allayed when he explained that the pure dry compound is not dangerous, requiring sharp percussion or rapid heating to produce detonation. When impure, however, or when decomposing, it is very dangerous. It is extremely sensitive to light, giving crystals of iodine. Reducing agents. *e.g.*, sodium sulphite, decompose it with formation of hydriodic acid and ammonia. For every molecule of sodium sulphite used one of hydriodic acid is produced ; two molecules of ammonia are obtained for every three of hydriodic acid. From such considerations the composition of this compound may be represented by the formula $N_2H_3I_3$. When acted on by light the following change takes place :—

$$N_2H_3I_3 = N_2 + 3HI;$$

whilst by hydrolysis, whether alkaline or acid,

$$N_2H_3I_3 + 3H_2O = 2NH_3 + 3HOI.$$

The action of light was not understood by the authors in 1896 ; owing to this fact the former experiments were made in the light, and the formula of nitrogen iodide was erroneously given as either NHI_2 or NH_3I_2. As to the nature of the reactions by which the compound is produced, the authors ventured a theory, which is sufficiently expressed by the following equations:—

$$I_2 + 2NH_4OH = NH_4I + NH_4OI + H_2O.$$
$$3NH_4OI = N_2H_3I_3 + NH_4OH + 2H_2O.$$

There followed a lively and deeply interesting discussion, which was opened by Dr. Armstrong, who expressed respect for Dr. Chattaway's courage. The investigation, he thought, brought out in a striking manner the urgent necessity for considering the action of light in promoting chemical decompositions.

Mr. W. R. Dunstan asked whether the authors had any opinions to offer as to the constitution of nitrogen iodide. Did they regard it as a compound of ammonia and true iodide of nitrogen, with the formula $\begin{matrix} I \\ I \\ I \end{matrix}\!\!>\!N = N\!<\!\begin{matrix} H \\ H \\ H \end{matrix}$? Dr. Chattaway wished, however, to reserve for the present any ideas he might have on the subject. In regard to a question asked as to whether the authors had tried the effect of various musical notes, obtained by means of pianoforte wire, on nitrogen iodide, Dr. Chattaway replied in the negative. The meeting was then adjourned.

ROYAL INSTITUTION.

On Thursday, February 9, the first of a course of lectures was delivered by Allan Macfadyen, M.D., B.Sc., Director of the Jenner Institute of Preventive Medicine, on

Toxins and Antitoxins.

After adverting to the landmarks in the development of modern bacteriology, and briefly commenting on the work of the chemists and botanists who, like Pasteur and Buchner, have done much for this new science, the lecturer proceeded to a general description of the main types of bacteria and their products. The soil may be regarded as the great reservoir of bacteria, inasmuch as a quantity of soil, enough to cover a threepenny piece, may contain many millions of them. By far the smaller number of bacteria produce disease. The range of temperature most suited to their growth, reproduction and activity is between 0° and 60° C. Their power of reproduction is so rapid that one anthrax bacillus, if introduced into the blood will, in a few hours, become a host, equal in number to the population of London. Referring to the methods at present employed, Dr. Macfadyen remarked that one of the most important steps in the elaboration of bacteriological technique was Koch's introduction of the growth of specific organisms in specially prepared solid nutrient media. Broth was early employed, but the solid media rendered investigations more manageable. Thus gelatin is employed when a medium is required that is solid at ordinary temperatures, while the vegetable jelly, agar-agar, remains solid at blood heat. Passing to the relation of bacteria to infectious diseases, it was shown that they elaborate toxic bodies, now known as toxins, which invade the system or certain parts of it, and produce the general symptoms of the disease in question. Toxins all produce antitoxins, specific substances which neutralise the toxic action. The incubation period of the toxic substance or toxin may be a question of hours or days. The effect of low vegetable organisms is not always dependent on their remaining active and living, since, for example, Bucher has obtained from yeast cells, by a heavy pressure equal to four hundred atmospheres, an extract that has the power of setting up alcoholic fermentation in saccharine solutions. In this way function has been separated from structure. The word toxin has been a source of confusion, because it has been applied to three different classes of bodies, (1) to ptomaines, basic nitrogenous bodies, forming salts with acids ; (2) to albuminous substances known as tox-albumoses ; and (3) to non-albuminous bodies, produced by bacteria, and best termed bacterial toxins. The lecturer concluded by showing on the screen pictures of the principal bacteria that produce infectious diseases. Many interesting points were brought forward, thus, the vitality of the spores which give to the bacilli of tetanus, or lockjaw, a drumstick appearance, are able to retain their vitality for years. The examination of the sputum of suspected tuberculous patients enables the practitioner to make an accurate diagnosis, even in the earliest stages of the disease.

A paper was read on Friday, February 10, on

The Motion of a Perfect Liquid,

by Professor H. S. Hele-Shaw, LL.D., M.Inst.C.E.

Many ingenious experiments were shown by means of a lantern, illustrating the motion of a thin film of liquid, passing, under pressure, along a channel of varying width. The channel was made out of two pieces of glass firmly placed together, and having a hollowed out portion, where the inner surfaces were about one-hundredth of an inch apart. Glycerin was the liquid employed, on account of its viscosity exceeding that of water, by virtue of which the flow is more regular, and the stream lines are more perfect curves or straight lines, as the case may be. Glycerin alone, however, does not show up the stream lines ; it is therefore coloured. Blue solutions are more transparent than red ones, and were employed for purposes of demonstration. Air bubbles also must be present, to show up the motion of the stream lines. The experiments prove that as the channel widens the pressure becomes greater and the velocity decreases, and *vice versâ*. By watching light bodies floating on rivers the same law may be deduced, though the various movements of the water are too complicated to be at present well understood. Thus, some small floating bodies are whirled round by an eddying motion of the water, some sink and others rise. The velocity and pressure vary in different parts of the same cross-section of the river ; for

example, the velocity is greater in the middle than near either bank, and less at the bottom than at the surface. From these and other considerations the width of the banks may be regarded as an indication of pressure, and their narrowness of velocity. It must not be concluded, however, that experimental illustrations are on exactly the same parallel lines as what actually takes place, because it must be remembered that the ultimate molecules of which the liquid is composed are of inconceivable smallness. Lord Kelvin's illustration represented that if a single drop of water were magnified to the size of the earth its molecules would appear in size to be between a marble and a cricket ball. The lecturer illustrated this in another way. If half-a-pint of water be securely bottled and covered, and a hole made in the lid large enough to let out, on inverting the vessel, a number of molecules equal to one thousand times the population of the world in a single second, it would take about forty-seven million years to empty the jar. Viscosity next received attention; it is a property of liquids whereby their particles interfere with each other's movements. This property of viscosity, by giving to a liquid an eddying motion, makes the problem of the motion of a liquid one of extreme perplexity. A perfect liquid would theoretically have no viscosity, would be incompressible, and possess molecules of infinite smallness. This conception of a perfect liquid will not, fortunately for the inhabitants of this globe, ever be realised. Were water a perfect liquid it would have no whirling or eddying motion; in the absence of viscosity winds would raise no waves, there would be no tides, and owing to the complete absence of rainfall water would ultimately disappear from the earth's surface. It is remarkable that the stream lines obtained by the lecturer exactly agree with lines plotted years ago by mathematicians, in the case of streams of varying width, and in the presence of round and rod-shaped obstacles, the latter placed at different angles. This shows the accuracy and the marvellous power of higher mathematics not only to predict many of the phenomena of nature, but also to verify the experimental proof of their mode of action. The study of stream-line motion has lent much support to Faraday's theory that magnetic and electrical action are due to a fluid. The lecturer concluded by quoting Faraday's dictum and applying it to the study in question: "If assumptions must be made, let us assume as little as possible."

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

A meeting of this Association was held on Wednesday last at the Westbourne Restaurant, Mr. F. Harrington, President, in the chair, to consider

Suggestions for a Draft Pharmacy Bill.

Mr. R. H. Parker, who opened the discussion, said it could not be denied that the suggestions of the Pharmaceutical Council, if carried into law, would bring about a revolution in pharmacy. Clause 1 was a direct blow at company pharmacy. Clause 2 would prevent grocers and other small shopkeepers from selling seidlitz powders and other drugs of a similar character. Clause 3 made the "seller" the person on whose behalf the sale is made. Clause 4 gave *carte blanche* to medical men to keep open shop, and to wholesale houses to supply poisons to others than qualified chemists. With regard to Clause 5 it was rather difficult to forecast its effect, but there appeared to be a very prevalent opinion amongst chemists that the widow of a chemist would act wisely in disposing of the business as soon as possible after the death of her husband, rather than carry it on under her own management. Clause 6 simply makes singular and plural and masculine and feminine interchangeable. Clause 7 would do away with the business of making "patent" medicines except by qualified men. He thought the Council deserved to be congratulated on having excited the Lord Chancellor to take so deep an interest in pharmaceutical affairs. With respect to Clause 4, he was of opinion that the exemption in favour of medical practitioners should be limited to compounding and dispensing of medicines for their own patients, otherwise they should not be exempted. The exemption to wholesale houses should he thought be restricted to dealing with qualified chemists. He believed that the outcome of the suggestions would not bear a very striking resemblance to the original. He was of opinion that the most effective method of dealing with the present condition of pharmacy would be to register each chemist's shop, and to insist that each shop should be under the management of a qualified chemist, preferably but not necessarily the owner.

Mr. Hyslop said—with regard to the position taken up by the trade press as apart from the pharmaceutical press, as to the "vested interests" of companies—he thought it was a cant phrase which should be knocked overboard, for companies have no legitimate vested interests. It would be wisdom on the part of the craft to give up the sale of "patent" medicines, except those containing poison, to the stores, and then a great disgrace to pharmacy would be removed. The dispensing of medicines was the right of chemists, and it would, he believed, be recognised as such in Parliament. As to the "Widows' Clause," as business men they knew that it was not to the profit of a widow to carry on the business. It was far better that she should dispose of it as soon as possible, and the limit of twelve months was ample.

Mr. Worsley thought that too much was made of the supposed vested interests of companies. He quite agreed with Mr. Hyslop as to the "Widows' Clause"; it was much better for the business to be sold outright as soon as possible.

Mr. Cracknell thought Mr. Parker had made rather an unnecessary suggestion with respect to wholesale houses. The fact that unqualified dealers were prevented from selling poison covered that. He concurred with Mr. Hyslop's opinion of the "Widows' Clause." The question of jury service which had been raised in the press was entirely irrelevant, and it would be very foolish to introduce the subject in the proposed Bill. It was a matter of common justice that dispensing should be restricted to chemists.

Other members said they had for many years held the opinion that the "Widows' Clause" should have been done away with long ago.

The President thought that the opinions expressed that night would tend to strengthen the hands of the Pharmaceutical Council, but he did not think it would be advisable to deal further with the matter until the question took a more definite shape. They could then have a good discussion upon the question.

The matter was, therefore, dropped for the present, and it was suggested that the subject for discussion at the next meeting should be that of "Dispensing in Doctors' Surgeries."

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION.

On Wednesday last, a special meeting of the trade was held at the Albert Hotel, Derby Road, in connection with this Association, Mr. E. Gascoyne (Vice-President) in the chair.

Dispensing in Surgeries.

On the motion of Mr. Gill, seconded by Mr. Sergeant, the following resolution was passed unanimously:—

> In view of the lamentable accident which occurred at Heaton Norris, this meeting of the Nottingham and Notts. Chemists' Association respectfully calls the attention of the Privy Council to the danger which exists to the public by reason of unqualified persons being employed in the dispensing of poisons in doctors' surgeries and other medical institutions.

Mr. Sergeant, in seconding the motion, remarked that he had recently seen an advertisement in the following terms:—"Wanted a dispenser; no knowledge of dispensing required."

The Suggested Draft Pharmacy Bill.

The Chairman next introduced the suggestions for a draft Pharmacy Bill to the meeting, remarking that they were not there to applaud everything the Pharmaceutical Society did, but to point out any weak points in the proposed Bill and the dangers which might arise. The Bill would have to run the gauntlet of the House of Commons if it ever got there, and they must be careful what they presented to Parliament.

On the motion of Mr. Middleton, seconded by Mr. Rayson, the first clause was agreed to unanimously and without discussion. Clause 2 gave rise to a lengthy discussion, which was introduced by Mr. R. Widdowson, who pointed out that the word medicines was not defined. Chemists should have the dispensing of prescriptions given to them as qualified men. That, however, was a different thing to the dispensing of medicines. If the words "medical prescriptions" were used instead of "medicines" the Clause in his opinion would have a better chance of passing. As the Clause stood it would create a monopoly that they could not expect. He proposed the alteration.

The Chairman remarked that it was a grievous mistake that they should bring forward a clause that would restrict absolutely the sale of medicines to chemists. It was not reasonable to ex-

pect that the House of Commons would accept the Clause as it stood.

Mr. Eberlin moved that the meeting should give its general support to the Clause. They were not discussing a Pharmacy Bill, but suggestions for a draft Bill. Those suggestions, he took it, had already been submitted to the Lord Chancellor, and no doubt had been partly his suggestions; they had met with his tacit approval, at any rate. The whole point hinged on the word "medicines." He thought the "medicines" in the Clause was intended to imply simply a schedule of purely medicinal substances. If the Lord Chancellor framed an Act it was for him to draw up a schedule. He would move that the Clause be adopted as it stood.

Mr. Bolton seconded. The main question was, were they just in the demands they made? If so, then they need not fear the result. The Government demanded that chemists should go through a certain training to qualify themselves for certain work. Was it therefore right that unqualified individuals should be able to do the same thing?

Mr. Widdowson urged that the House of Commons would not pass anything in the shape of a monopoly, but there was a positive danger to the public in any unqualified man dispensing a prescription. He would therefore propose that the Clause be amended to read, "to dispense, or compound, or keep open shop for dispensing or compounding medical prescriptions," leaving out all reference to selling, and alter "medicines" to "medical prescriptions."

Mr. Brown seconded this, but after further discussion it was decided to agree to the Clause, subject to the proviso that a schedule of purely medicinal substances be drawn up and included in the Bill. Clause 3 was agreed to as it stood, and Clause 4 was also accepted without discussion.

With regard to Clause 5, Mr. Eberlin remarked that unless chemists agreed to something of the kind proposed they would get nothing. It was illogical for them to think that the business of a deceased chemist could be carried on indefinitely by the widow with proper protection for the public. Either they should drop the whole thing or pass some considerable modification of the "Widow's Clause." Twelve months allowed ample time for the winding up of a business to the best advantage.

The Chairman moved that the Clause should not be accepted, and after further discussion his view of the matter was supported by the votes of the majority of those present.

SUNDERLAND CHEMISTS' ASSOCIATION.

The members of this Association met together on Thursday, February 9, in the Grand Hotel, Bridge Street, to meet Mr. Gilderdale, of Newcastle, who kindly came over to read a paper on

Hyoscyamus.

Mr. Gilderdale, during an interesting paper, exhibited extracts and tinctures of the first and second biennial plants, which showed very little difference in colour. The difference of the amount of hyoscyamine was also very small; in fact, seeing the difference was so small, it is difficult to understand the great difference in the price of the two henbanes. Mr. Gilderdale, who was keenly followed in all his remarks, stated he was at present cultivating the plants at his own home for further examination.

The President moved a very hearty vote of thanks to Mr. Gilderdale for his kindness in coming over and giving the Sunderland chemists the benefit of his work, which must have been long and arduous, and he could assure Mr. Gilderdale that the members present were very pleased to have heard the lecture.

Mr. Ranken seconded and Mr. Mitchinson supported the vote, which was carried with applause.

The Secretary then introduced a communication received from the Secretary of the Federation of Local Associations suggesting that the Association send resolutions to the Privy Council and Pharmaceutical Society *re* "the dispensing of poisons by unqualified persons in doctors' surgeries and public institutions." It was decided to send the following to the Privy Council.

> The members of the above Association beg to draw your attention to the fact of the dispensing of poisons, etc., in doctors' surgeries and public institutions by unqualified persons, and hereby wish to suggest that a Bill be brought before Parliament to compel such persons to have some qualification for the safety of the public.

The following was directed to be sent to the Pharmaceutical Society:—

> This Association is of the opinion that the Pharmaceutical Society should draw the attention of the Privy Council to the fact that the public are not properly protected against poisons, since the dispensing of such is left in the hands of unqualified persons in many doctors' surgeries and public institutions.

LETTERS TO THE EDITOR.

Bottles for Metric Prescriptions.

Sir,—"Doubtful" makes the statement in this week's Journal "that I did not see that a fluid ounce is only 28·4 C.c., not 31¼ C.c." as I said. In giving the sizes of bottles used, I put the ounce at 30·0 round numbers, and made the remark afterwards, that its real measure was 31¼, which is quite correct, when speaking of French ounces, as was the case when I gave the sizes of bottles as used in this country. 500 0 divided by 16 equals 31¼. The authors of the Codex in 1837, who were the first to give the equivalents of the old French lb. in the metric system, put the ounce in round numbers easily divided at 32·0; now, however, most authors of *formulaires*, Dorvault for example, give it in round numbers as 30 0. Trusting this explanation will make all clear to "Doubtful,"

Geneva, February 13, 1899. Alfred Roe.

The Cabinet Advertising Co.

Sir,—This Company has its cabinets fixed in various parts of London, and lets the spaces—4 or 5 inches in depth, with a glass door in front—to display goods. I should advise "A. H." to write to a few of the advertisers, especially if he sees a compartment in bad condition through rain getting in, or the glass broken. He will most likely hear that the agreement which has been signed is drawn with the rent made payable at Sheffield, which means they can sue for rent there, and the expense of going to defend the case is as much as paying the rent. Also on the bills and elsewhere they say advertisers to give immediate notice of broken glass or damage to case, but the agreement does not say they are to repair it, so there is the case in a nutshell: "Do it yourself."

February 14, 1899. S. R.

The Suggestion for a Draft Pharmacy Bill.

Sir,—In common with (I should imagine) the rest of the profession I was delighted to see the suggestions for a draft Pharmacy Bill. I consider that the proposed clauses attack at least the main evils which beset our craft, and I am extremely sorry to see that there is a suspicion of opposition in our own ranks. I think, with the majority of our rank and file, that it will not be a perfect measure, but we are so far from perfection now that it would be far too much to expect that all at once. We must progress slowly, but in heaven's name do not let us stop all progress by petty bickerings, and, like children, refuse part because we cannot have the whole. Far better to sink our differences and, in the words of Mr. Reid, "search for ground upon which we can all stand united and strong, with our front to the enemy." I am inclined to agree with Mr. Gill that Clause 2 is impossible as it stands. The word "medicines" is too vague; there should at least be some kind of definition, which ought to exclude the less active drugs and domestic remedies, otherwise I fear too great opposition. With regard to Mr. Yewdall's objection *re* the training of students, I fail to see the objection, as of course unqualified assistants would still be allowed to carry on their studies as usual, under the personal supervision of a qualified man, and the fact that the principal would be legally responsible for any accidents or breaches of the law would tend rather to greater care being taken that their work should be accurate. I should, of course, like to see every chemist made a member of the Society, but I think we are hardly advanced enough for that yet; it would excite opposition in our own body. Let us get the present suggestions made law, and I venture to prophesy that the other things will follow. In regard to the Widows' Clause, I think the widows of chemists with poor businesses will have to thank a law which will compel them to give up a business which they do not understand, and which would be seriously impoverished by the payment of a qualified man's salary, while the good business will always sell, there being generally more than one or two looking out for a good thing. Twelve months will be ample time to find a purchaser. In conclusion, let me congratulate the Council on its suggestions, and wish the proposed Bill the heartiest success.

Walton on-Thames, February 11, 1899. Frederick Cherry.

Sir,—It is with great disappointment that I read Mr. Ellis' letter in this week's Journal concerning the Widows' Clause. Surely every widow is entitled to just and reasonable treatment and not be compelled to sell a business which will in many cases

be taken over by the eldest son. For example, I am managing for a widow whose eldest son will be qualified to take the business over in two years' time. Is it just that she should be compelled to dispose of a good business when her son will be competent in so short a time after Mr. Ellis' limit? I say, distinctly, no, to those who would interfere with the widow's rights. But whoever would suggest some scheme in order that no qualified man can take service under a company, then the support of many more would be obtained than by continuing against this clause.

February 13, 1899. J. S., M.P.S. (171/3).

Sir,—On reading the correspondence in Saturday's Journal, I was astonished at the remarks of some of the writers. Well may you say in your editorial that their objections are based on misconception. As, perhaps, a few observations may do no harm, the following may not be out of place at the present juncture. Mr. Gill thinks companies could under the proposed suggestions still conduct a drug department under a qualified manager's name. This I think would not be very safe business for the company. Possibly, if attempted, it would make work for the lawyers, but the probability is that in such an event the companies would come off second best. His ideas on Clause 2 are quite the reverse of mine and others. The opposition from the quarters he quotes should prove the necessity of this Clause, and helpful to us. Nor do I think it would take long in a court of law to discriminate between a food and a drug. Mr. Gill's remarks on Clause 3 are good for comparison with those of Mr. Yewdall, who has surely been trying to read into the suggestions something that is not there. If not, supposing these suggestions become law, would it not be interesting to see the Society proceeding against its own pupils in their School? It is to be regretted that one of our number should be the first to speak of opposition, and would have shown better taste had he promised to take steps to have an amendment introduced at the proper time for remedying this imaginary evil, and better still if he had stated his views in a private letter to our worthy President. At this point let me commend this plan to those of our craft who still have suggestions or objections to make. I am sure they will receive due consideration, and, if practicable, will not be lightly overlooked. The Widows' Clause seems to trouble not a few. Is it not a fact that this Clause in the old Act is one of the most abused, and the main loop-hole for others than qualified men carrying on our calling? Within half a mile of me one deceased chemist's business is carried on by a painter, another by a shoemaker's widow; both too keen to be caught, and still using the deceased chemist's title. Clause 5 (as suggested) is, I think, the best possible way out of the present difficulty. If we go on much longer as at present few, indeed, will there be who leave a business worth bequeathing. To those who wish their widows to continue their business let me suggest that they at once set about to qualify their wives. I quite sympathise with the first two suggestions of Mr. Coleman and the concluding sentence of Mr. Gill. We cannot forget that the greengrocer, provision and hardware dealer, herbalist, draper, confectioner, the clockmaker, and not a few quacks are in many instances supplied with their stock of physic by registered men (and it is from these I should have looked for opposition) who are willing for the small profit they get to give every detail for evading the law. But surely we can realise that it is not possible to get all we want at once. For this reason let us not from within begin to talk of additions or opposition at the eleventh hour. Every clause of the suggestions when carefully considered in conjunction with the provisions of the previous Acts will prove well worth having, and our best thanks are due to the Council and President for taking such steps at so opportune a time. Surely we shall not hear after this that the Society exists only for the glorification of its Council and a select few. Let every man on the Register impress upon his parliamentary representative the necessity in the public interest of the measure becoming law and by showing up the danger to the public under the present lax *régime*, our success will be well nigh assured

February 13, 1899. Yorker (170/43).

Sir,—A step in the right direction would be to abolish both the Minor and Major examinations, and in place of them to have one intermediate, in botany and materia medica and a final in chemistry, pharmacy, and physics, conferring the title "pharmaceutical chemist—the title "chemist and druggist" being protected. In lieu of the higher examination, I suggest that candidates who get from 75 to 85 per cent. of marks pass, from 85 to 95 the Pharmaceutical Society medal in silver be given, and from 95 the Pereira medal in gold, but for both of these the candidates must pass first-class examination. The Minor men would remain as they are now, unless they cared to pass a Major examination as was in existence when they passed the Minor. I need only say that the Jury Act would not require altering if the above or similar suggestion were carried out. The latter part of Clause 4 is a very serious matter. "Registration under the Pharmacy Acts shall not entitle any person so registered to practise medicine or surgery or any branch of medicine or surgery." If that would place all persons on the Register in such a position that they could be prosecuted for recommending some simple medicine it is really the worst thing that could be done.

Datchet, February 14, 1899. A. S. Willcocks.

Strychnine Hydrochloride.

Sir,—Dr. Martindale's paper on "Strychnine Hydrochloride" is interesting, and confirms the main contention in my brief note, that the salt as commercially prepared does not contain two molecules of water, but a less proportion. I must, however, demur to the view attributed to me, that the salt originally crystallises with two molecules and then effloresces to a composition something like $4(BHCl)\cdot 7H_2O$. My words were: "It would therefore appear that the hydrochloride does not crystallise with two molecules, or that it effloresces with extreme readiness to a composition," etc. The latter was only suggested as a possibility—not given as my opinion of what actually occurs. Pretty confident assertions have been made that the salt does crystallise with two molecules, and these statements must be taken into account. Moreover, Dr. Martindale's experiments are not conclusive of the fact that the hydrochloride does not under any conditions crystallise with the two molecules. It may be necessary to allow a saturated cold solution to evaporate spontaneously or to crystallise under 0° C. in order to obtain the highest hydrate. It is usual for a dehydrated salt to absorb water from moist air until the hydrate is formed which is stable for the particular conditions of temperature and moisture. It by no means follows that the hydrate so formed is the highest which can exist. The behaviour of sodium carbonate and many other salts proves the contrary. Dr. Martindale insists on the importance of transferring the dried salt as quickly as possible to a faultless desiccator; but if the substance is dried, as it ought to be, so that it is allowed to cool, and is weighed in clasped watch-glasses with ground edges, the matter of the desiccator is of minor importance. I do not think there is any ground for assuming that the salt in question is a mixture of two hydrates. If two distinct crystalline forms were discernible in the commercial salt, or if hydrates $2(BHCl)4H_2O$ and $2(BHCl)\cdot 3H_2O$ had been separately prepared, and found to be of the same crystalline form, there would be a reasonableness in the assumption. At present there is not. One might as well say that quinine sulphate is a mixture of two hydrates, having seven or eight molecules of water respectively. The conception that hydrates normally crystallise with the water in simple relation to the salt is very much of a tradition unsupported by evidence. The question of sublimation and decomposition is in an unsatisfactory state, as no doubt the various statements regarding the same have been made in reference to experiments in air-baths. I remember Crum-Brown once saying, "I don't believe in air-baths," and any one who has tried to take a melting point in one of these time-honoured pieces of apparatus will be inclined to agree with the Professor. At the best a thermometer only gives a statistical account of the temperature. Individual molecules or particles impinging on the bulb may have a far higher temperature than that indicated by the mercury, and this applies with particular truth to an ordinary air-bath. One can easily understand that decomposition (even a minute amount of sublimation as mentioned by Mr. Hill) may occur in an air-bath of average construction, while the temperature indicated on the thermometer would be insufficient to account for the phenomena. I have not determined the exact point at which strychnine hydrochloride suffers decomposition by heat, but in a small air-bath there is distinct decomposition with the thermometer under 160° C., so that it is not safe to allow the temperature to rise about 150°. It would doubtless be better if we used drying ovens surrounded by oil or fusible metal, but that is a degree of virtue which very few of us have attained.

Edinburgh, February 13, 1899. D. B. Dott.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Determination of Phosphorus.

Lester Reed submits a process tentatively for the rapid determination of small quantities of free phosphorus in phosphorus pastes, etc. It depends upon the discharge of the colour of a solution of bromine in carbon disulphide when gradually added to one of phosphorus in the same liquid. This takes place at a point at which the phosphorus and bromine consumed appear to stand to each other in the proportion of $P:Br_3$. The reaction is equally definite if a little alcohol containing a trace of water is present, the ratio then being $P:Br_5$; the end of this reaction being when the alcoholic layer retains a decided yellow colour for a minute or two; the end reaction does not appear to be affected by the presence of wheat flour or glucose. In applying the method a solution of bromine containing 5 to 10 grms. in 50 C.c. carbon disulphide is standardised by a weighed quantity of yellow phosphorus in 20 C.c. carbon bisulphide. The operation is conducted in a stoppered bottle containing about 1 C.c. of paste made of flour, glucose, and water, and 5 C.c. of absolute alcohol, thus imitating the conditions of the actual determination. To this is added the phosphorus solution, then the bromine solution gradually from a burette, until a permanent yellow colour is obtained in the floating layer. A weighed quantity of the sample, is then placed in a similar bottle, 5 C.c. of absolute alcohol are added, then 20 C.c. carbon disulphide, and the titration conducted as before. In presence of phosphites, resulting from the slow oxidation of phosphorus, an allowance is made for the quantity of bromine solution that is decolorised by a filtered extract of the paste made with cold 50 per cent. alcohol.—*Analyst*, 24, 33.

Copper in Plants.

D. T. MacDougal brings forward reasons for concluding that copper may not exert a marked injurious action on plants. The wood of *Quercus macrocarpa*, recently examined by him, contained slightly less than 500 milligrammes of copper to each kilo. of dry matter. It was present in the form of finely-divided, reddish-brown particles in the tracheides, vessels, and medullary parenchyma, and was probably taken up as carbonate, being reduced to the metallic state in the tissues. Its occurrence throughout the annual rings indicates its free absorption during nearly a decade. There is no conclusive evidence that the presence of copper did not finally cause the death of the tree. —*Bot. Gazette*, 27, 68.

Bacteria and Fluorescence.

Attempts have been made by Edwin O. Jordan to discover the conditions under which fluorescence is produced, and especially the nature and amount of the chemical substances essential to the formation of the fluorescing body. Among the bacteria chosen for this purpose were *B. fluorescens*, *tenuis*, *mesentericus*, and *putridus*, which do not liquefy gelatin; also *B. viridans* and *B. fluorescens liquefaciens*, which do liquefy gelatin. He concludes that while phosphorus and sulphur are essential to the formation of the fluorescing pigment, the nature of the base with which these elements are associated is not important. The fluorescigenic function may depend on the molecular constitution of the compounds employed. Thus, other things being equal, the presence of the methyl or methylene group is coincident with superior nutritive value and fluorescigenic power. The presence of acid in the medium conceals the presence of the substance to which the colour is due, and interferes with those vital activities of the bacilli which, in an alkaline solution, lead to its production. Diffuse daylight is unfavourable to pigment production. Since the pigment is of no discoverable advantage to the organisms by which it is produced its production is probably incidental and not an essential vital act.—*Bot. Gazette*, 27, 19.

Sugar Inversion by Salts.

L. Kahlenberg, D. J. Davis, and R. E. Fowler publish a lengthy paper on the inversion of cane sugar by salts, and summarise the main results of their investigation on the subject. They find (1) that the freezing-point method may be successfully employed in determining the speed of inversion; (2) when the metals are arranged in a series according to the speed with which their salts of the same acid radical invert sugar, the order appears to be similar to that of the electrochemical series, though aluminium forms a notable exception, its salts inverting sugar more rapidly than those of any other metal thus far tested, in spite of its high position in the electrochemical series; (3) chlorides invert sugar more rapidly than sulphates, because the ionizing tendency of chlorine is greater than that of the sulphuric radical.—*Journ. Am. Chem. Soc.*, 21, 1.

Determination of Strychnine and Brucine.

H. M. Gordin and A. B. Prescott suggest a method for the separate determination of strychnine and brucine in nux vomica, which differs from the B.P. method (1) in the decomposition of strychnine ferrocyanide with zinc sulphate, and (2) in the subsequent determination of strychnine as periodide. The addition of zinc sulphate to strychnine ferrocyanide gives, after heating on a water-bath for fifteen minutes, a precipitate of zinc ferrocyanide, strychnine sulphate remaining in solution. The solution is filtered and mixed with decinormal iodine solution and diluted hydrochloric acid. The quantity of iodine consumed by the strychnine is determined by titrating the remaining iodine with standard sodium thiosulphate solution, and this figure, multiplied by the suitable factor, gives the amount of alkaloid present in the drug operated upon. In the table of results it appears that a solution containing 0·16 per cent. of strychnine and 0·22 per cent. of brucine (anhydrous) when assayed by this process gave 0·14 and 0·24 per cent. respectively. On repeating the operation the same figures were obtained.—*Amer. Journ. Pharm*, 71, 18.

Tests for Neroli Oil.

Charabot and Pillet state that the gravity of pure neroli oil lies between 0·872 and 0·876, whereas that of petit grain oil, which is used as an adulterant, ranges from 0·891 to 0·894. Neroli oil has a dextro-rotation from 1·42 to 4·06 at 15° C. Petit grain oil is lævogyre. On fractional distillation neroli yields a considerable quantity of a dextrogyre fraction at about 175° C.; but with petit grain oil no definite fraction can be collected, the temperature gradually rising throughout the distillation. The optical rotation forms a valuable indication of the purity of neroli oil, since by the addition of lemon, orange, or bergamot oil, it is abnormally increased, while with petit grain and linaloe oil, it is diminished. The amount of esters in neroli fluctuates between 10 and 20 per cent., whereas those of petit grain range between 50 and 70 per cent. Bergamot oil, containing 38 per cent. or more of esters, may also be detected by the abnormally high saponification figures when treated with an alcoholic solution of alkali.—*Chem. Zeit.*, 22, 310.

THE IMPROVEMENT OF LOCAL ORGANISATION.*

BY G. T. W. NEWSHOLME.
Vice-President of the Pharmaceutical Society.

About sixteen months ago I was privileged to address the members of an important association in an adjoining county on the subject of local organisation in pharmacy (see *Pharmaceutical Journal* [4], 5, 381). Since that time both local and general organisation have proceeded apace, but the march of events has only served to show more emphatically than ever what a crying need complete organisation in pharmacy is.

The Pharmacy Acts Amendment Act, 1898.

Within a very few weeks of the occasion on which I ventured to assert that, when a suitable opportunity presented itself, the Council of the Pharmaceutical Society would not hesitate to initiate legislation with a view to improving the position of pharmacy, a draft Pharmacy Bill was published, after adoption by that Council. The main object of the Bill, which has now happily secured a place on the Statute roll, was to realise one of the intentions of the founders of the Pharmaceutical Society, by placing it within the power of every person duly qualified to practise pharmacy in Great Britain to become a member of the Society, with the same rights and privileges as every other member. Of the varying fortunes of that Bill during its passage through Parliament it is needless for me to speak; my only reason for referring to the matter now is to point out that careful organisation proved to be a most potent factor at more than one critical period in the history of the measure.

The Poisonous Substances Bill.

The same was the case, in an even more marked degree, when the Poisonous Substances Bill was before Parliament last year. An assumed neglect on the part of the Pharmaceutical Society had led the Privy Council to draft and proceed with a measure which, had it been allowed to become law, would have inflicted upon pharmacy a considerable amount of damage. Pharmaceutical organisation triumphed again, however, and the Pharmaceutical Society has been left to adopt its own poison regulations, whilst the attempt to minimise the precautions to be observed in selling poisonous substances failed for the time being on account of the strenuous opposition offered by registered chemists. The subsequent voluntary adoption by the Society of regulations for the keeping, dispensing, and selling of poisons will, it is believed, have the effect of securing the sympathetic co-operation of the Privy Council in our efforts to provide for the safety of the public in regard to the dispensing and sale of poisons and medicaments generally. It has been urged in the past that the effect of adding such dangerous substances as phenol and mineral acids to the poison schedule would be to place difficulties in the way of obtaining them for disinfecting and industrial purposes. A more absurd reason for allowing accidental poisoning cases to increase in number was never formulated, and the public interest requires that it shall be allowed to prevail no longer, either in Government departments or elsewhere.

The Work of the Federation.

A third and not the least valuable illustration of the importance and utility of thorough organisation has been afforded during the past few months by the Federation of Local Pharmaceutical Associations. When the President of the Pharmaceutical Society (Mr. Walter Hills) referred to the subject of company trading in pharmacy in November last, and offered to take the lead in working for an amendment of the existing law if properly supported by the trade, he also appealed to the local associations to devote careful consideration to the subject of a new Pharmacy Bill, and to let the Council know what conclusions they arrived at. The Federation at once accepted that friendly challenge, which was virtually thrown out in response to its own suggestion, and urged the federated associations to take immediate action. The result is already a matter of history. Meetings have been held all over the country, and resolutions have been passed by most, if not all, of the leading associations, affirming the desirability of promoting another Pharmacy Acts Amendment Bill, and suggesting more or less definite lines on which the provisions of that Bill should be drawn. The Council of the Pharmaceutical Society has, therefore, in response to the President's appeal, been favoured with the views of the trade to a considerable extent, and, within the past few weeks, suggestions for a draft Bill, embodying the more important of those views, have been published. No such Bill, however comprehensive its provisions, can be expected to satisfy everyone in our ranks, and it is easy to conceive that many may be disappointed that the suggestions are not all inclusive. But, in such a case, compromise is essential, and each of us must be prepared to yield something, if by that means we can help to assure substantial progress. Principles, however, we cannot yield, and we ought to protest to the utmost against the demoralising prospect that it shall be permissible for any combination of persons to do what a single individual is prevented by the Pharmacy Acts from doing.

The Suggested Draft Pharmacy Bill.

That principle is embodied in the first clause of the suggested draft Pharmacy Bill, which has been agreed to by the Council of the Pharmaceutical Society and submitted to the Lord Chancellor in the hope of securing his co-operation in the matter. You have doubtless all read the suggestions for a draft Pharmacy Bill, published in the *Pharmaceutical Journal* for February 4 last, but it will not be amiss if I refer briefly to those suggestions on this occasion. Our chief object is to secure that it shall be illegal for any association of persons to do what a single individual is not permitted to do. That, we think, is both logical and reasonable, in so far as the practice of pharmacy is concerned. We do not think anything less is worth fighting for, and, if properly supported, we are prepared to fight the matter to the bitter end. In deference to the views expressed by members of the craft in all parts of the country, we have made our second object the regulation of the practice of pharmacy. Speaking broadly, we have no pharmacy law in Great Britain at the present time, only poison law, and we think it is high time that the practice of pharmacy was regulated to some extent. It is proposed, therefore, that the keeping of open shops for the compounding and dispensing of medicines shall be restricted to duly qualified persons. There is not the least doubt that such a restriction would tend to the public benefit, and it is equally certain that the chemists and druggists of the present day constitute the only class of individuals fit to perform the important duties of compounding and dispensing medicines in a satisfactory manner. We feel therefore that, as the risk to the public welfare caused by the existing state of affairs is manifest, and the trained individuals required to meet one of the most pressing needs of the day are forthcoming, the time appears ripe for attempting to do what our predecessors failed to accomplish thirty years ago.

Restriction of the "Widows' Clause."

The third object of the proposed Bill is the setting in order of our own house to some extent, by limiting the operation of the so-called "Widows' Clause" in Section 16 of the Pharmacy Act of 1868. Doubtless, objection to this limitation will be taken by

* Paper read before the Bradford and District Chemists' Association, on Tuesday, February 21.

members of our own body, but I think reason demands it. Whether the existence of that clause counted for much or little in the interpretation of the law that entitled certain associations of unqualified persons to escape the operation of the first fifteen sections of the 1868 Act, this one thing is certain —that the clause constitutes a decidedly weak point in the Act, in so far that it prevents us moving with a clear conscience in the direction of preventing any but duly qualified persons from owning and carrying on business in pharmacies. Besides, no hardship will be involved in limiting the period during which trustees may carry on the business of a deceased chemist. Everyone knows that the sooner a business is sold after the death of the proprietor the better it sells as a going concern, and I quite fail to see that it is any more justifiable, so far as the public is concerned, to allow widows or other persons without legal qualification acting as trustees to carry on the business of a chemist and druggist indefinitely, than it is to allow a joint-stock company or other corporate body to do so. The principle is the same in both cases, and it is distinctly opposed to the best interests of the public. To be honest, therefore, in our protest against the possibility of any combination of persons being permitted to do what no individual is not allowed by the Pharmacy Acts to do, we must restrict the operation of the "Widows' Clause."

The Necessity of Vigorous Action.

But it is useless to protest unless we back up our protests by vigorous action, and it is with regard to the manner in which action may best be taken that I wish to speak more particularly at present. The most important step that yet requires to be taken in order to complete our organisation is to arrange that one registered chemist in each Parliamentary constituency throughout Great Britain shall be appointed to communicate with the representative for that constituency on all matters affecting the welfare of pharmacy. If there should be more than one Parliamentary representative for a given district there should be the same number of pharmaceutical representatives to deal with them. The great point is that as far as possible each member of the Commons House of Parliament should be shadowed, as it were, by a registered chemist who is one of his own constituents. The total number of Parliamentary representatives for Great Britain is 567, of whom 72 represent Scotland and 30 represent Wales. In England we require 224 registered chemists to represent counties, 236 for boroughs and 5 for the Universities; in Wales 19 for counties and 11 for boroughs; whilst Scotland needs 39 for counties, 31 for boroughs, and 2 for its Universities. How are these representatives to be appointed? The Pharmaceutical Society's system of local secretaryships does not meet the requirements of our case, but it might be extended so as to do so. The districts for which local secretaries have hitherto been appointed number 266 in England, 45 in Scotland, 18 in Wales, and 1 each in Guernsey, Jersey, and the Isle of Man, or 332 altogether. There are also the divisional secretaries for London and Edinburgh, and a number of assistant local secretaries, making about 400 in all, or 167 short of what we require.

More Local Secretaries Required.

A rearrangement, therefore, on the lines I propose would involve the appointment of that number (167) of extra local secretaries or assistant local secretaries. It may be urged that the difficulty at present experienced in finding suitable persons to act as local secretaries in several districts precludes the idea of appointing so many more. But I think that difficulty would become non-existent if we appointed local secretaries to perform more responsiblo duties, and relieved them of the worry of collecting subscriptions and the performance of similar trivial tasks. The local secretary for a district would then understand that he was the person to communicate, on all matters of pharmaceutical importance that required it, with the member of Parliament for the district. He would also require to know every registered chemist in his district, and in all movements affecting the craft he would necessarily take a prominent part, organising and attending meetings, doing his best to explain the position of affairs at any given time, removing misconceptions and generally giving a clearer idea of things. Failing the appointment of extra local secretaries and the conversion of the post of local secretary into a semi-political office, though I see no great difficulty in doing that, the pharmaceutical associations in Great Britain might take the matter up, delegating a sufficient number of their members to perform the necessary work. On an average, each existing association would require to appoint ten or twelve such delegates, and if each association was also connected with the Federation, the organisation would be complete, every delegate being in direct communication with the Secretary of the Federation and through him, with the other 566 delegates. A circular letter from the Secretary would then have the effect of causing the same problem to be stated to every member of the House of Commons at the same time. Identical questions might then be asked from all parts of the House on the same night, grievances could be aired with equal facility, and great as their political power has been found to be in the past, registered chemists would find it infinitely more effective henceforth.

How Yorkshire would be Represented.

To take our own county as an example, Leeds and Sheffield would each require five delegates, Bradford and Hull three each, York and Halifax two each, Huddersfield, Dewsbury, Wakefield, Pontefract, Scarborough, and Middlesborough one each. In addition, each of the twenty-six county divisions would require a delegate, or fifty-two in all for the county of York. Is it not as clear as anything can be that if the whole of the members of Parliament for Yorkshire were thoroughly informed from the same point of view with regard to any matter affecting the interests of chemists and druggists, their influence would make itself strongly felt in our behalf when that matter came up for consideration in the House of Commons? I think there is not the least doubt about the matter; in fact, it appears so obvious that the only difficulty is to understand why the plan has not been carried into effect before. In the city of Sheffield, to take another example, a local secretary, assistant local secretary, or delegate of the Local Association would be appointed under this plan for each of the five divisions—Sheffield (Central), Attercliffe, Brightside, Ecclesall, and Hallam. Those five individuals should meet to compare notes at regular intervals, and a quarterly meeting of the representatives for the county or riding would be a desirable thing. In our own particular case, I think it would be wiser to let the quarterly meeting represent the Riding rather than the County, but there would be no need to subdivide smaller counties. In London an arrangement of this kind is already in force, the fifty divisional secretaries for the metropolis assembling in the Pharmaceutical Society's House from time to time to exchange views, and I fail to see that other parts of the country need be behind London in that respect. Once a year also a general conference might be held, on similar lines to the annual Federation meetings, at which representatives from any and every part of the country might be present. The place and time of meeting of the British Pharmaceutical Conference suggest themselves as peculiarly suitable for our purpose, and I see no reason why the conferences of local and divisional secretaries should not assemble at Plymouth this year, London next, and wherever the British Pharmaceutical Conference meeting may be held in any future year.

How to Commence Operations.

In order to prove the feasibility of the extended and comprehensive system of local organisation I suggest, it would appear desirable in the first place to test the practicability of the plan upon a somewhat limited scale. Thus, at the outset, we might with advantage proceed to attempt to create a model organisation for the West Riding of Yorkshire. The local secretaries for Leeds, Sheffield, Bradford, York, and Halifax should first call meetings of the trade in each town, to nominate as many assistants to the local secretaries for each place as may be required to equal the number of parliamentary representatives. Leeds and Sheffield would each require four assistants to the local secretaries, Bradford would require two, and York and Halifax one each. A meeting should then be called of all the local secretaries and assistants in the West Riding, at which other members of what would virtually be a pharmaceutical Watch Committee should be nominated to represent such of the county divisions in the Riding as were not already provided for. In all, there would require to be forty members of the pharmaceutical Watch Committee for the West Riding, and if any existing local secretary declined to take part in the proposed arrangements, it would be necessary to appoint a substitute for our purpose. For obvious reasons, however, it would be preferable to secure the co-operation of the Pharmaceutical Society's local secretaries whenever possible. Each member of the Committee should understand that his chief duties are, first, to be in close personal touch with every registered chemist—whether employer or assistant—in his division, and, second, to regard himself as the direct means of communication between the registered chemists whose interests are, in a measure, committed to his care, and the parliamentary representative for the division. There should be no question as to whether any individual registered chemist in the division is connected with the Pharmaceutical Sooiety or any other organisation, or not; the divisional secretary ought to know, and be in close personal touch with each one who is engaged in the legitimate practice of pharmacy. Neither should any distinction be drawn between employers and assistants, so long as both are equally qualified in the eye of the law. I am strongly of opinion, however, that any registered chemist who has thrown in his lot with a joint-stock company constituted of unqualified persons and carrying on the business of a chemist and druggist, should be strictly debarred from any share in our arrangements and deliberations.

Divisional Secretaries and Associations.

What the further duties of the forty secretaries should be might well be left for consideration at the first quarterly meeting. That and subsequent meetings, by-the-way, ought to be attended by such members of Council of the Pharmaceutical Society as can make it convenient to be present, just as they attend meetings of divisional secretaries held in London. I feel very strongly, however, that each individual who may be inclined to take part in this proposed attempt to establish an ideal system of local organisation should be prepared to devote a considerable amount of energy to the work. When it is considered desirable to hold meetings of the trade to consider any subject of pressing importance, it must needs fall to the share of the forty Yorkshiremen to communicate with every registered chemist in the West Riding, summoning each one to the centre that may be found most convenient for the particular district. If, through any mischance, he should be unable to perform this duty or to attend the meeting, he must be prepared at short notice to find a deputy who can properly represent him. The wishes of those who attend the meeting, if unanimity should not prevail, might be embodied in concise majority and minority reports which the divisional secretary ought to communicate to the proper quarter. The question of ways and means I need not touch upon here; the expenses, however, need not be great, and could doubtless be met by the different local associations which would necessarily constitute important factors in our scheme of extended organisation, and have their possibilities of useful work vastly increased by the operation of the scheme. Each registered chemist, for example, who became accustomed to attend trade meetings at Bradford, held under the auspices of the local Pharmaceutical Association, would naturally tend, sooner or later, to become a member of that Association. Similarly, in districts where associations do not at present exist, they would soon spring into being when all the registered chemists in those districts had acquired the habit of assembling at appointed places for the discussion of trade matters.

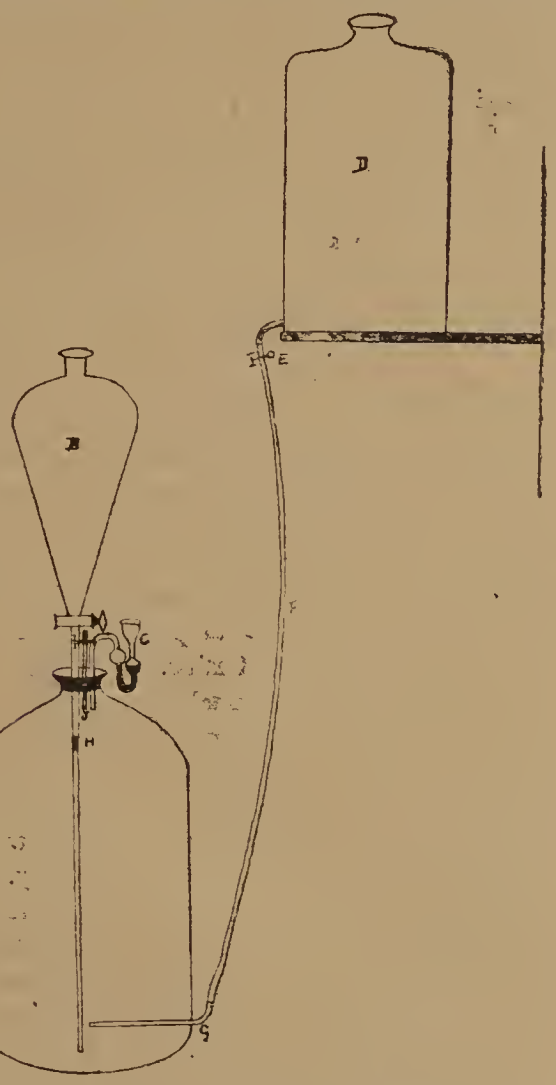
The End and the Means.

To conclude, I am firmly of opinion that an exceedingly fair prospect presents itself to the view of the registered chemists of Great Britain at this time, and that they have it within their power to reap a rich harvest if they will but act together, knowing their own minds and looking only for results that may appear reasonable as well as just. In strict justice we are entitled, by our training and qualifications, to much more than we are ever likely to receive in free-trade Britain. Motives of expediency must control our ambitions, and we must be content, as men of the world, to regard as reasonable what, as registered chemists, we might be disposed to consider insufficient. But it is not unreasonable, from whatever point of view we regard the matter, to seek to have the practice of pharmacy more restricted than heretofore, and to have the use of our titles absolutely prohibited, except to duly qualified individuals. It is not unreasonable that the public should be protected in regard to the dispensing of medicines, the sale of poisons, and the distribution of dangerous medicaments. Registered chemists, as a class, acknowledge that as their duty and seek, in every possible way, to protect the public against any mischance that is liable to happen in dealing with medicinal substances. The question of profit to them is a secondary one. Possibly they ignore considerations of self-interest too much at times; but they are certainly not behind the members of any profession in their public-spirited treatment of problems that might conceivably appeal to their commercial instincts only. It is time, however, for us to be more self-assertive than we have been in the past, and personal considerations, no less than regard for the public interest, demand that we should appear more prominently on the world's stage. The essential thing to that end is to organise thoroughly and well; let us not only utilise all our existing organisations but add to and improve upon them. The difficulties and problems of modern life and business require modern methods of treatment; for our purpose that involves complete national organisation, and federation of all our existing agencies for improvement. Let us set the necessary example in the West Riding of Yorkshire by organising the whole of the registered chemists in that populous and important district on the lines I have suggested, or on any others that may commend themselves generally as suitable for the purpose. If, possibly, we should fail at the outset to secure the adherence of all those whose sympathies and support we solicit, but by trying and trying again we ought to be able in time to break down all barriers of reserve and, by showing definite results as the outcome of our labours, convince even the most conservative and conscientious objector to modern methods that those methods, and those alone, are the only suitable weapons with which to fight the battles of modern progress.

A SIMPLE APPARATUS FOR MAKING ETHYL NITRITE.

BY H. J. HENDERSON, PH.C.

The piece of apparatus here described is the outcome of my experience in the manufacture of liquor ethyl nitritis. I do not propose to enter into any explanation of the method by which ethyl nitrite is prepared ; that matter has already been sufficiently dealt with in a paper contributed from the Research Laboratory of the Pharmaceutical Society by Messrs. Dunstan and Dymond, to which the reader should refer (*Pharmaceutical Journal* [3], xviii., 861). My object is to explain what I find to be the most suitable apparatus for carrying out their process, which, if carefully followed, yields very satisfactory results. The narrow cylindrical vessel, described by them, answers fairly well for small quantities, but it is unsuitable for making 1000 or 1500 grammes. The illustration nearly explains itself. A is a stout glass bottle, of about



A. Bottle containing sodium nitrite solution. B. Separator. C. Safety tubes containing mercury. D. Bottle containing cold water. E. Clip. F. Rubber tube. G. Glass tube. H. Rubber joint. I. Clip. J. Outlet tube for allowing air to escape.

twelve litres capacity, with an outlet at G. A sound cork, through the centre of which is inserted a glass tube, is tightly fitted into G. The neck of A should be about two inches in diameter, and is fitted with a close-grained bung, through which three holes have been neatly bored. A piece of glass tubing, J, about four inches in length, is fitted into one hole, a piece of rubber tubing is slipped over the end, which is exterior, and closed with a clip. Push the tube of the separator B through the second hole, and connect to it, by the rubber joint H, a glass tube reaching nearly to the bottom of A. The third hole is for the safety bulbs C, which contain mercury, the thistle funnel is loosely plugged with glass wool to avoid loss of mercury by spurting. The use of this arrangement I will explain presently. Press the bung deeply into A and render the whole air-tight by pouring melted paraffin wax around. D is a vessel similar in form and capacity to A, containing a good supply of chilled water. It is connected with A at G by means of the rubber tube F. E is a clip for regulating the flow. The apparatus is used as follows :—Withdraw the cork and glass tube at G, and close the hole tightly with a cork, the inconvenience of having the rubber tube in the freezing mixture is then done away with. Dissolve 1400 grammes of sodium nitrite in distilled water and adjust the volume to 4800 C.c., pour this solution into A, through the separator B, opening the clip on the tube J, and immerse A in a freezing mixture of ice and salt. 540 C.c. of strong sulphuric acid are added to 1500 C.c. of distilled water and the mixture cooled. 1280 C.c. of alcohol, 90 per cent., are mixed with an equal volume of distilled water and cooled. Mix the diluted acid with the diluted alcohol, adjust the volume to 4800 C.c. with water, and place the bottle containing the mixture in a freezing mixture of ice and salt as before, and cool below 0° C. Interpret this last injunction liberally. Mr. Dymond stated, in the discussion which followed the reading of the paper, that in one experiment they cooled to – 15° C. The lower the temperature the better the yield, at least that is my experience.

Both bottles being immersed in the same freezing mixture, I assume the temperature of the one to be equal to the temperature of the other, so for convenience I take the temperature of the mixture of alcohol and acid. When the temperature has fallen sufficiently, pour the acid mixture into the separator in portions, and allow it to flow rapidly into the sodium nitrite solution. If there be any evolution of nitrous vapours, shut off the tap of the separator and replace the clip on the tube J. Fit a cork into the neck of the separator, through which passes a glass tube bent at right angles to prevent the liquid spurting back into the mouth, and blow enough of the acid mixture into A so as to obtain a slight pressure in the apparatus, as indicated by the mercury in the safety bulbs. When the action has moderated and the temperature is again reduced, proceed to add the remainder of the mixture. Towards the end of the reaction the bottle can be gently rotated, to thoroughly mix the contents and to liberate any ethyl nitrite which may be mechanically held down by the sodium sulphate. I do not find it necessary to stir ; the reaction, in its first stages at least, takes place quite readily without it.

The ethyl nitrite is now floating on the surface of the solution of sodium sulphate. Withdraw the bung in A, and replace it by a similar one, through which one hole has been bored, disconnect the long glass tube from the separator, and rinse the latter with cold water. Push the tube of the separator into the hole in the second bung, so that the end of the tube is flush with the other side. Insert the bung in A as before and render air-tight with paraffin wax. Place the apparatus in the position shown in the figure, and connect A with D, by the rubber tube F, open the tap of the separator and allow water to flow from D into A until all the ethyl nitrite has collected in the separator. Having disconnected the separator, wash the ethyl nitrite with a weak solution of potassium carbonate and afterwards with cold distilled water, finally freeing from traces of moisture with anhydrous potassium carbonate, as described in the paper. The separato and its contents should be weighed before adding the potassium carbonate. The weight obtained, minus the weight of the separator, will give the weight of ethyl nitrite obtained, neglecting the traces of moisture, or it can be dried and the contents of the separator filtered through glass wool into a tared bottle containing a known weight of absolute alcohol and glycerin, ninety-five parts of the former to five of the latter, by volume, as required by the Pharmacopœia. The necessary calculations can now be made, and the mixture diluted with more of the menstruum until it conforms

to the strength required by the B.P. for recently prepared liquor ethyl nitritis. The advantages claimed for this piece of apparatus are, it can be easily fitted up and manipulated by one person, loss by evaporation is reduced to a minimum, and the operation of syphoning with its various objectionable features is entirely avoided.

ANTITOXINS: THEIR PREPARATION, PROPERTIES, AND ADMINISTRATION.*

BY RICHARD T. HEWLETT, M.D., M.R.C.P., D.P.H.

Bacteriologist to the Jenner Institute of Preventive Medicine.

One of the greatest departures and, I think we may add, one of the most marked advances in therapeutics in recent years is the introduction of the animal extracts and of the therapeutic sera or antitoxins. Of the animal extracts the thyroid at least is extremely valuable, and in certain diseased conditions is the only agent which produces any distinct curative effect, but whereas the animal extracts are obtained from certain glands or other structures of normal and untreated animals, the therapeutic sera are derived from animals which have undergone a prolonged course of particular treatment whereby their blood and blood serum acquire new and remarkable properties; they are in a sense artificial products. There is a large class of diseases familiarly known as infectious or contagious diseases, which spread through the air or by direct contact more or less close, the former being known colloquially as infectious, the latter as contagious. The distinction between the two is, however, somewhat arbitrary and not a fast one, and both are classed by the scientific physician and bacteriologist as "infective."

Of the infective diseases I may mention small-pox, scarlet fever, typhoid fever, diphtheria, and tuberculosis. The latter, tuberculosis, would not perhaps be usually classed as an infectious or contagious disorder, but there is no doubt that in rare cases infection or contagion does occur, while its infective nature is proved by the possibility of reproducing this disease with ease and certainty by inoculation. Inoculability, accidental or experimental, is one of the most important criteria of an infective disease.

The infective diseases are now generally looked upon as due to the existence and multiplication of minute living organisms within the person or animal. The phenomena of infection are inexplicable except on the assumption that the *materies morbi* is capable of indefinite multiplication, a property confined, I believe, to living organisms alone. It is true that the enzymes, the unorganised and non-living ferments, are capable of producing changes in a relatively enormous mass of other material, but one could not go on taking a trace of material from one tube of an enzyme mixture to another and continue to set up the characteristic changes; the enzyme itself does not grow or multiply.

Confining ourselves to those diseases about which we know most, we find that in the majority of instances—in diphtheria, lock-jaw, typhoid fever, wool-sorters' disease, and blood poisoning, for example—the minute living organisms, which are the causes of the diseased conditions, are regarded as belonging to the vegetable kingdom. They are minute and lowly plants, commonly spoken of as bacteria or germs. A few diseases, such as malaria, seem to depend on minute animal parasites. Our knowledge of these is still extremely imperfect, while there are a number of diseases the infective agent of which is at present unknown; such are small-pox, measles, chicken-pox, etc. The bacteria are unicellular and consist of a tiny mass of bioplasm or living stuff which, to ordinary examination, is practically structureless, surrounded by a more or less definite cell-wall. The whole cell may not measure 1/1000th of an inch in diameter, and the largest seldom exceeds 1/250th inch. They multiply by simple division, a cell becoming constricted and then dividing into two. Some are motile, others non-motile; some are of the greatest service to man, others are harmful and produce disease. What the bacteria lack in size they make up in numbers, for the rate of multiplication is extremely rapid. Under favourable conditions a cell divides every half-hour or hour.

Many theories have been held in the past as to the manner in which bacteria produce disease, but it is now generally held that the disordered states are due to chemical substances elaborated by the germs during their life, and which, when separated, are capable of setting up many of the phenomena of the disease. The toxins of the diphtheria bacillus, for example, produce degeneration of nerve and muscle similar to that which occurs in diphtheria.

We find that the chemical changes produced by bacteria are very varied—pigment formation; fermentations, lactic, acetic, butyric, etc.—formation of various gaseous, liquid and solid bodies from the most complex to the simplest; production of enzymes such as those which peptonise or liquefy gelatin, curdle milk, etc., and, lastly, specific toxic substances. The latter, which mostly concern us, were at one time regarded as alkaloidal in nature, but although ptomaines, as these bodies are termed, do occur in putrefaction, tainted food, and the like, and are often virulent poisons, they do not appear to be the specific toxic bodies produced by the disease germs.

The specific toxic bodies seem to have some connection with the proteids, and have been termed tox-albumins, while Duclaux regards them as enzymes. It suffices for us to term them toxins, this expresses what we mean, while it does not commit us to any theory. We have arrived at this, then—the infective diseases are due to minute living parasites, which produce their effect through the agency of toxic substances or toxins.

A striking feature in connection with many infective diseases is the occurrence of insusceptibility, or immunity, as it is termed. Human beings do not suffer from rinderpest, quarter evil, and many other diseases of the lower animals, while the latter do not contract such diseases as typhoid fever and yellow fever. These are instances of what is known as natural immunity. Somes races are much less susceptible than others; the black man is much less susceptible to yellow fever and malaria than the white man, the fowl is immune to tetanus, the white mouse to anthrax.

Still more striking is the fact that immunity may be acquired after an attack of infective disease. In some instances this acquired immunity or insusceptibility may be very complete, as in small-pox and typhoid fever, second attacks of which are rare, or it may be partial and transient, as in diphtheria and influenza.

It has also been found possible to produce immunity experimentally in various ways; for example, by treating an animal with an "attenuated virus," as in the Pasteur system of vaccinating for anthrax. The anthrax bacillus is grown so that its pathogenic action is weakened and a vaccinating liquid obtained.

By an "attenuated virus" a mild attack of the disease is set up which subsequently protects from other attacks. This mode of producing immunity was largely practised in the case of small-pox during the eighteenth century before the introduction of vaccination.

Another method of producing immunity artificially is to make use of the chemical products or toxins elaborated by the specific micro-organism. Although the toxins are virulent poisons it is possible, by commencing with sufficiently small doses and gradually increasing the amount administered, to acclimatise an animal

* Summary of lecture delivered before the Chemists' Assistants' Association, on Thursday February 16.

so that ultimately a dose many thousand times greater than the original minimal fatal one may be given without harm.

It is found also that the blood and blood-serum of an animal treated in this way when injected into a second animal confers for a time a like immunity on this second animal. This forms the basis of the so-called antitoxic treatment. The blood or blood-serum of an animal immunised by an attack of the disease or of a naturally immune animal confers little or no immunity when injected into a second animal, so that the two forms of immunity are distinct. The mechanism of immunity after an attack of disease or of a naturally immune animal is not understood, but that of an animal rendered insusceptible by the injection of toxins is regarded as being due to the production of substances—anti-bodies or anti-toxins—which in some way neutralise the effects of the toxins. Two views are held as to the nature of these anti-bodies, one is that they are secreted as it were by the cells of the body under the stimulus of the toxins, the other is that the toxins themselves are metamorphosed by the cells and become transformed into the anti-bodies. The method by which a second animal becomes insusceptible on inoculation with the blood of the first or treated animal is also a debated point. One theory is that the anti-bodies act on the cells and tissues and in some way render them insusceptible to the toxins, another is that a chemical neutralisation takes place between the toxins and anti-toxins, the former being thereby rendered inert.

I have now briefly indicated the mode of production of the anti-bodies or antitoxins, and we will now consider their preparation more in detail by reference to diphtheria, tetanus, and streptococcus antitoxins. In the first place let us consider diphtheria antitoxin.

The first essential in the preparation of an antitoxin is to possess a highly virulent micro-organism, that is, one which produces a maximum amount of toxin. This is not so easily obtained as you might imagine, and I believe that the whole of the diphtheria antitoxin of the world is produced from three or four strains of diphtheria bacilli. The most virulent bacilli usually obtained from cases of diphtheria rarely produce a toxin of which less than 1/10th C.c. will kill an average-sized guinea-pig in forty-eight hours, but the diphtheria bacilli employed for antitoxin work produce a toxin of which 1/50th C.c., 1/100th C.c., or even 1/150th C.c. will kill a guinea-pig.

This virulent diphtheria bacillus is grown in a carefully prepared and sterilised slightly alkaline peptone beef-broth in flasks at a temperature of 37° C. for a week or ten days.

The culture is then filtered through a Berkefeld or Pasteur-Chamberland filter to remove the micro-organisms; and the filtrate, which is highly toxic, may have a small addition of carbolic acid to preserve it, and is then used to inoculate the animals—for brevity it is termed the toxin. The horse is usually selected, it is large and yields a plentiful supply of serum, which separates well from the clot, and bleeding is a simple matter owing to the situation of the jugular vein. The horse selected is kept under observation for a fortnight, and is tested with tuberculin and mallein (to detect tuberculosis or glanders) to ensure a healthy animal being chosen. Minute doses of the toxin are then injected subcutaneously two or three times a week. At first the injection may cause some swelling and fever, but later on no appreciable effect is produced. For the earlier injections, for greater safety and to enable the dose to be increased more rapidly, various means may be taken to weaken the toxic effect of the toxin by heating or admixture with various chemicals. The dose of toxin is gradually increased until a dose of 150 C.c. to 200 C.c. is administered. During the progress of treatment the blood is tested from time to time by ascertaining what amount of it is required to neutralise a given quantity of toxin when injected into a guinea-pig. Many precautions are necessary in doing this which we need not enter into, it suffices to say that the strength of the antitoxin is estimated in units, one unit being the amount of serum which will just neutralise ten fatal doses of toxin when injected into a medium-sized guinea-pig. The blood serum of the animal may be regarded as a solution of the antitoxin of varying strength, and the dose of the antitoxic serum is estimated not directly by volume but by the number of units a given volume contains. It is convenient to use a serum which contains not less than 1000 units in 10 C.c., and preferably a serum of still greater potency. That now supplied by the Jenner Institute contains 2000 units in 2 C.c.-5 C.c.

Approximately the amount of antitoxin in the serum depends on the strength of the toxin employed, a strong toxin producing a more active serum than a weak one, hence the necessity for using a highly virulent diphtheria bacillus and one capable of producing a virulent toxin. The improvements which have taken place in diphtheria antitoxin since its introduction are largely due to improved methods of producing virulent toxin, and the selection of highly virulent diphtheria bacilli.

After a treatment lasting for three to six months and the blood serum having been found to possess the requisite antitoxic power the horse is bled into sterilised bottles, the blood allowed to clot, the clear serum is separated, mixed with a small amount of an antiseptic, standardised, and bottled for use, all operations being carried out under the strictest antiseptic and a septic precautions, and a single dose being placed in each bottle.

With regard to the amount of diphtheria antitoxin required for a dose opinions differ, probably not less than 1000 units, and Dr. Washbourn has recently recommended 2000 to 4000 units, repeated every twelve or twenty-four hours for three to four days, according to the severity of the disease.

Tetanus antitoxin for totanus or lock-jaw is prepared much in the same way as diphtheria antitoxin. The tetanus bacillus is, however, strictly anaërobic and is grown in broth in an atmosphere of hydrogen or in broth containing formate of soda. The horse is inoculated with the tetanus toxin, but even more care is required than with diphtheria toxin, as it is quite an ordinary event for 1/100th C.c. of a tetanus toxin to be a fatal dose for a guinea-pig, and the horse is also extremely susceptible to tetanus. The general course of treatment is the same as for diphtheria antitoxin, and after 4-6 months the animal is ready to be bled. Tetanus antitoxin can be raised to a much higher potency than diphtheria antitoxin.

For streptococcus antitoxin, which is used in certain cases of blood poisoning, a somewhat different procedure has to be adopted.

The streptococcus does not produce a toxin, the filtered fluid from a culture possesses no, or only the merest, trace of toxicity, so that the cultures themselves, *i.e.*, the culture fluid *plus* the organisms, are injected. The streptococcus employed has to be of the highest virulence possible: as ordinarily obtained from an absces or a case of erysipelas, 1 C.c. or more of a culture may be required to kill a rabbit, and the virulenco is artificially heightened by passage through a succession of rabbits until a culture attains such a potency that as little as 1/1,000,000th C.c may be fatal to a rabbit. The cultivation of the streptococcus so that it maintains its virulence is also fraught with considerable difficulty. The ordinary peptone beef-broth is useless unless mixed with one-third serum, either asses' serum, or, preferably, human serum. The virulent streptococcus is grown in this serum broth for about a week, and then the whole culture is inoculated

into the animal, commencing with small doses and gradually increasing the amount injected. For the earlier injections, the cultures are killed by being heated to 65° C. for an hour. The streptococcus antitoxin cannot be standardised like the diphtheria and tetanus, and it is difficult to arrive at a just estimate of its value and immunising power.

Other antitoxins have been prepared for typhoid fever, cholera, tuberculosis, plague, and snake-poisoning, but all are at present unsatisfactory. The last named for snake poisoning, anti-venin as it has been termed, is prepared by the cautious inoculation of a horse with gradually increasing doses of snake venom.

We have now considered the preparation of antitoxins, and have incidentally noted some of their properties.

The antitoxic bodies are probably proteid in nature, form but a relatively small part of the total constituents of the serum, and are difficult or impossible to isolate in anything like purity. For therapeutic use no really practical method has been devised for concentrating the active principle, so the serum itself is employed, and hence to keep the dose within convenient limits as to bulk it is desirable to prepare an antitoxic serum as active as possible.

Minute doses of an active antitoxin completely neutralise the effect of a culture or toxin of like kind. By this I mean that antitoxin has a specific action. Diphtheria antitoxin protects only from diphtheria, tetanus antitoxin from tetanus. Diphtheria antitoxin is inert towards tetanus, and *vice versâ*. To give protection, however, the amount of antitoxin has to be proportionate to the amount of toxin. For example, the amount of diphtheria antitoxin which will just neutralise the effect of the minimal fatal dose of a given toxin would not neutralise ten fatal doses. Moreever, if the toxin be injected first and the antitoxin at varying periods afterwards, very much larger doses of the antitoxin are required to neutralise than if the toxin and antitoxin be injected simultaneously.

These two points are of importance in treatment: It must be assumed that a large dose of toxin has been formed and absorbed and a proportionate dose of antitoxin administered, and the treatment should be commenced at the earliest possible moment. For the same reasons the dose of antitoxin is proportioned to the gravity of the disease, and not to the age or size of the patient, for it is obvious that just as much or more toxin may be formed in an attack of diphtheria in a child as in an adult, and diphtheria being generally more severe in children than in adults larger doses are frequently administered to the former.

Early treatment is of the utmost importance. It has been urged as an objection to antitoxic treatment that if antitoxin be a specific, why does it not cure all, or nearly all, cases of the disease, and why is early treatment so important? A few considerations will meet these objections. It is somewhat startling, perhaps, but nevertheless true that, strictly speaking, there is no such thing as the cure of a disease or diseased condition. We do not by drugs or other treatment actually cure or mend; we stimulate, depress, or modify the energies of cell, nerve, and muscle; we modify secretion and excretion, we place damaged cells and tissues under the best conditions for repair, but repair and reparative action are brought about by the vital activities of the cells and tissues themselves. If, therefore, antitoxin be administered late, when the toxins have already damaged the tissues, such damage will be left unaltered and uncured by the antitoxin, for it can only be repaired by the cells and tissues. Antitoxin will, however, prevent further damage, and if administered sufficiently early will prevent damage altogether, hence the necessity for treatment from the very commencement of the attack.

Antitoxin has been most successful in diphtheria because a local lesion is generally present, and the disease may be diagnosed before any great absorption of toxin has taken place; the mortality from this disease in England has been reduced at least 10 to 15 per cent. by the use of antitoxin. In tetanus or lockjaw we are usually only able to diagnose the condition owing to manifestations due to absorption of toxin and consequent nerve damage, and antitoxin treatment has not proved so efficacious. Still, it is the most hopeful means we possess for combatting this terrible disease.

Antitoxin is always administered by subcutaneous injection by means of a large syringe. The syringe is carefully boiled for five minutes in water to sterilise it; it is then allowed to cool and the dose of antitoxin injected into the loose subcutaneous tissue of the back or abdomen after the skin has been thoroughly disinfected with carbolic acid or other trustworthy antiseptic. In diphtheria, 1500-4000 units are injected for a dose, and the dose is repeated every twelve to twenty-four hours for two to four days, according to the condition of the patient, at the discretion of the physician. Of tetanus and streptococcus antitoxins 10-20 C.c. of the most active obtainable are injected every six, twelve, or twenty-four hours.

The diphtheria and tetanus antitoxins retain their activity for several months if kept in a dark and cool place. Streptococcus antitoxin probably diminishes considerably in strength after some weeks. For hot climates dried antitoxins are preferable, the antitoxic sera are evaporated to dryness *in vacuo* over sulphuric acid, the dried product, if in scales or finely powdered, may then be dissolved in cold distilled water previously sterilised by boiling; 1 gramme of the solid corresponds to about 10 C.c. of the fluid serum

Antitoxins must never on any account be warmed or heated; frequently they become a little cloudy on keeping, but the sweet odour and a microscopical examination will serve to distinguish this from a bacterial infection. As before stated, each dose of the antitoxin is usually put up in a separate bottle, and if a bottle be opened and only part of its contents used it is wiser to discard the remainder.

There is no danger attending the use of antitoxin, but rashes and joint pains are common sequelæ, and are due to the injection of a "foreign" serum, and not to the anti-bodies contained in it Serum from an untreated horse produces similar effects.

Antitoxins are now frequently used for prophylactic or preventive purposes. If a member of a family or school has contracted diphtheria, those who have come in contact with him may have a preventive inoculation of 200-300 units of diphtheria antitoxin. The immunity so produced does not last longer than about three weeks.

DETERMINATION OF ALCOHOL IN TINCTURE OF LOBELIA.

BY EDWIN DOWZARD, F.C.S.

To make an accurate determination of the amount of alcohol present in the above preparation is no easy matter, owing to the difficulty of completely separating the ether. The following method depends upon the fact that alcohol forms a compound with calcium chloride, while ether is unaffected: Mix 50 C.c. of the tincture in the distilling flask with about 25 Gm. of anhydrous sodium sulphate, and then a large excess of powdered calcium chloride (anhydrous) is added, so that the contents of the flask have the appearance of a solid mass. After standing for about ten minutes the flask is immersed in water (at 40° C.), and a current of air blown through the flask until all odour of ether has disappeared. Water is then added, and the alcohol distilled off in the usual manner. A sample examined by this method gave 61-93 per cent. absolute alcohol by volume, the calculated amount (allowing a decrease of 1·71 per cent. for extraction) being 60-93 per cent.

HOW TO PREPARE FOR THE MINOR EXAMINATION.

BY RUBIDIUM.

"When I have passed the Minor"—how often this phrase is on the lips of budding pharmacists! The apprentice or student looks forward to passing the Minor as the goal of all his hopes, and thinks as he reads the examination schedule, that when he knows all that is specified there, there will be very little left to learn. This attitude of mind does not last long after he has begun serious study; he soon finds that to know all about even the simplest matter is beyond the power of any human being; that the smallest grain of sand contains in itself inscrutable mysteries, and the commonest weed presents problems not to be solved, and he comes to see that the most persistent study will never take him beyond the region of the learner, and need never deprive him of that humility in the presence of the unknown which marks the earnest student. "Knowledge comes, but wisdom lingers," said our late Laureate; knowledge—an accumulation of facts—alone may sometimes suffice for passing examinations, but without wisdom—a perception of underlying principles and relationships—the student is but poorly equipped for life, and surely not the mere passing of an examination, but the preparation for a useful career in life should be the aim of every one.

The Object of the Examinations.

In preparing for an examination, there is often much more chance of passing if to pass has not been one's sole aim. This sounds anomalous, but in reality it is not so, for it stands to reason that a student who is sufficiently interested in his subject to work at parts of it not included in the schedule, will have a much more intelligent appreciation of it than one who is anxious to exclude everything not required by the examiners. This fact is often lost sight of, but it should be remembered that the object of the examination is not only to ascertain whether the candidate possesses a knowledge of this or the other fact, but to test his fitness for the career he is entering, a career which demands many qualities besides a good memory. As to this matter of memory, there seems to be some uncertainty among students as to the requirements of the Minor examination, and serious discussions sometimes take place as to whether a knowledge of the proportion of each ingredient in such preparations as, for instance, compound tincture of cardamoms or confection of senna, is necessary. There surely need be no such uncertainty when the schedule states in perfectly clear terms that "a knowledge of the proportion of active ingredient or crude material" in certain official preparations (which are named) is what is required. These named preparations all contain dangerous constituents, and a knowledge of the proportion is no mere fanciful memory test, but a matter of the greatest practical importance, without which no person is fit to handle these substances; therefore it is only reasonable that an exact acquaintance with the subject should be insisted on. The student should beware lest he "strain out the gnat and swallow the camel," *i.e.*, lest he carefully commit to memory unimportant details and forget the weightier matters of processes and principles.

The First Examination.

The first thing to be done, when one has decided on a pharmaceutical career, is to past the "First" examination or its equivalent. It is desirable to do this before entering on apprenticeship, as the subjects required are fresher in the mind on first leaving school than later, and also one's spare time can afterwards be devoted to more strictly technical work. There are many reasons in favour of taking the Matriculation examination of the London University in place of the "First," the chief ones being that it demands a higher standard of education, thus rendering the candidate more fit for the scientific work to follow, and that it is a great advantage, in case of wanting to take a university degree, to have "got through" this examination at an early stage. It is tedious, not to say humiliating, to be obliged to turn again to school subjects after some years of other interests, and that is what has to be faced before a university degree can be obtained, unless the "matric." has been passed previously. Then, too, the knowledge of mathematics enforced by the Matriculation examination is of the greatest use when the study of physics is taken up, as in the absence of an acquaintance with that subject, physical problems can only be worked out in a clumsy and roundabout manner; also the precision and definiteness of mental grasp fostered by work at mathematics and allied subjects is of infinite value to the scientific student.

Attendance at a School.

Let us suppose then that one of the examinations recognised by the Pharmaceutical Society has been passed, and that the student is prepared to devote the whole, or at any rate the greater part of his time for some months to preparation for the Minor. He enters some school of pharmacy, perhaps having only very vague ideas about the work that has to be done, and the best way to set about doing it—even imagining perhaps that the knowledge is to be administered like a daily dose of medicine by his teachers, and that his part is to be that of a more or less passive recipient. Let him once and for all disabuse his mind of any such notion; professors and teachers can do little for him unless there is a determination on his part to devote his unswerving attention to his work, and to use his best efforts to assimilate the instruction provided. It is useless to attend lectures with a wandering attention and a mind ready to catch at every little distraction. There must be a distinct effort on the part of the learner, *attention* in its most literal sense. Again, none but the most serious cause can justify absence from any lecture of a course, for if the continuity is broken, much that follows will either not be understood at all or misunderstood, and in any case the break is a great disadvantage. Nothing should be allowed to interfere with the arrangements made by teachers for the student's work. At the same time physical exercise must not be neglected, or health is likely to suffer. To put all thought of work entirely away at times is a great aid to devoting the whole attention to it as a rule.

Lectures and Lecture Notes.

Instruction in the Minor subjects is usually given by means of lectures and laboratory work. To deal first with the lecture work: how can this be turned to the best account by the student? In the first place, careful notes of all lectures must be taken. A little difficulty is usually experienced at first in taking notes, as it is not found easy to write down one sentence while listening to the next, but with practice this difficulty is soon overcome. The method which the average student will find the most satisfactory is to take pencil notes, using such abbreviations in words as he finds convenient, and to write the notes out fully in another book as soon after the lecture as possible, while the whole is fresh in his mind. In this way the details not recorded in the rough note-book may be written out from memory, which plan serves the double purpose of impressing them on the mind and recording them for future reference. Important facts and all headings should be underlined; the special reason for this will be mentioned presently. It is a good plan to put in tabular form any set of facts or reactions that lends itself to such treatment, and a clear and concise style should be aimed at throughout. There is a good deal in knowing how to listen to a lecture the mind must be alert to seize the salient points of a

sentence, to know what must be noted and what may be left to the memory, to discriminate quickly between the essential and the unimportant, otherwise trivial details will be recorded and the real gist of the matter neglected.

Sketches of Apparatus.

When a lecture is illustrated by experiments the apparatus should be sketched. This may be most conveniently done after the lecture, when the apparatus can be examined closely and the details of construction and manipulation mastered. The sketches may be conveniently made on the left-hand pages of the note-book, which should be reserved for that purpose, and for entering any additional information on the subject of the lecture that may be acquired later. These sketches, however crudely done, are of great service as an aid to memory, and one can often call to mind some particular process or experiment by remembering the little drawing of it in one's old note-book! Lectures on chemistry of course afford the most scope for the drawing of apparatus, but those on pharmacy may be usefully illustrated with sketches of appliances, specially those not in every-day use, and so perhaps not previously seen by the student. For instance, while it would be waste of time to spend it in drawing an ordinary infusion pot, the many different forms of still should be sketched, and the distinguishing features of each carefully noted. Sometimes pieces of apparatus are rather complicated and difficult to reproduce on paper, but with care a sufficiently satisfactory sketch may be made to bring back to the mind the main outlines, and if the essential points of the whole are understood they can be indicated so as to suggest what is not put in.

Equations and Formulæ.

In taking notes of chemistry lectures, all equations should be recorded, and where a process is being dealt with, not the final result only but each step should be shown in the equations. There is a necessity, however, to guard against the error into which students are apt to fall of trying to remember equations. To be of any use equations must be written intelligently, and not from memory; the process, reaction, or fact must be remembered, and then it will be a matter of no difficulty to write the equation. An equation is a symbol or illustration, most useful indeed in its place, but after all only a method of expression, and unless this is clearly recognised the student is apt to make a sort of fetish of equations. It is therefore very mportant that their place and use should be understood.

Materia Medica and Botany.

When the subject of organic chemistry is reached graphic formulæ should be constantly written until the student is quite familiar with the subject. The formula C_2H_6, for instance, carries no conviction to the mind that the carbon atom is quadrivalent, but the graphic formula cannot be written without impressing that act on the mind. The differences between normal and iso-compounds, between saturated and unsaturated hydrocarbons, between ortho-, meta-, and para-derivatives are much more easily understood by the free use of graphic formulæ, and the little extra trouble involved is soon repaid by a more comprehensive grasp of the subject. Materia medica lectures afford a rich field for the artist, but even he who cannot claim that title should not neglect to devote time and pains to recording his observations by sketches. To draw a leaf you must see it, and when one attempts the drawing one realises how easy it is to look at it and not see it; to get only a vague general impression, and no exact knowledge of it at all. It has been truly said that "the eye sees only what it brings with it the power of seeing," and this power is added to and developed by the effort to record what has been observed; thus the task of making accurate sketches of specimens becomes easier as one goes on, and furnishes a valuable means of remembering the distinguishing characteristics of the numerous flowers, roots, leaves, etc., with which materia medica deals. It is a good plan to make several drawings, each from a different specimen, as all the distinguishing characteristics will seldom be found in a single specimen. It must not be forgotten that the cross-section of roots, rhizomes, barks, seeds, etc., is often diagnostic, and should always be drawn after having been examined with a lens. Botany and materia medica play into each other's hands a good deal; work done under the one subject is often introductory or supplementary to what comes under the heading of the other, and the above remarks on the value of making drawings have as much to do with the former as the latter. For botanical purposes it is particularly useful to make a series of sketches of the same plant or part of a plant in different stages of development. Typical flowers, fruits, seeds, etc., should receive careful attention, as it is only by classification (*i.e.*, the referring of the many to one primal or typical form), that the immense variety of forms can be dealt with. When it is remembered how much of what we call knowledge is power of comparison, the importance of this will be appreciated.

Botanical Terms and the Microscope.

"The language of flowers" is apt to be a stumbling block to the student at first. In other words, there are a great number of technical terms in botany that sometimes strike dismay to the heart of the novice. The only satisfactory way of getting over the difficulty is to look up every one in a good dictionary, and thus to get a clear and definite idea of its meaning. The derivation will often suggest a clue, but the student should not be satisfied until the precise meaning is clear to him. The method of constantly consulting a dictionary may be a little tedious at first, but it pays in the long run; and a growing admiration arises in the mind for the rich vocabulary of this science, which renders exceedingly accurate and definite descriptions possible. The microscopic botany at present required for the Minor comprises the recognition of "sections of stems of dicotyledonous, monocotyledonous, and cryptogamic plants; spiral, reticulated, and scalariform vessels; as well as the simpler structures, such as stomata, pollen grains, and hairs." It is far better in every way for the student to cut, stain and mount his own specimens than to learn what is required by simply examining slides prepared by someone else; a much more intimate knowledge of the subject is acquired and a deeper interest in it aroused and developed. After next August, a wider knowledge of this part of the subject will be demanded by the examiners, and the candidate will also be expected to have a practical knowledge of eight natural orders, viz., Ranunculaceæ, Cruciferæ, Rosaceæ, Leguminosæ, Umbelliferæ, Compositæ, Solanaceæ, and Liliaceæ. The chemistry of plant-life is a very important part of botany and the chemical changes which take place in the cells are o special interest when the study of chemistry is being carried on simultaneously by the learner. The investigation of the life of a plant, with its digestive and respiratory functions so closely resembling our own, opens the mind to the similarity of the methods employed by Nature all through her domains, and while the details of process are mastered a wider lesson may be learned.

The Study of Physics.

The study of physics is often a stumbling block to Minor students, and, as has been remarked above, a preliminary knowledge of mathematics is of very great service. The student should not grudge devoting some time to the consideration of simple and well-known apparatus, such as the barometer, thermometer, and balance, for it is quite easy to have these things in daily use, and

yet be ignorant of the principles of their construction. Careful notes of the lectures should, of course, be taken, and well illustrated by diagrams. In writing up all lecture notes text-books should be freely consulted and used to supplement the instruction given in the lecture, and it is always wisest to ask the advice of the lecturer as to the best works of reference on his own subject. Points that are not clear should never be left for future elucidation, but cleared up at once by consulting a book or a teacher. One of the advantages of "writing up" lecture notes is that anything not thoroughly understood at the time of taking the notes is forced into notice and receives the consideration it needs at the time of re-writing. Exceptionally clever students may find that they can make sufficiently clear and adequate notes at the time of the lecture, but for the majority the above plan is far more satisfactory.

(*To be continued.*)

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

The origin of the names of plants is a subject of much interest, but its investigation is attended with some difficulty. In the case of those derived from the classical names the meaning is often purely conjectural, as the same word may have been applied to plants of very different characters. Even with names of later date it is often difficult to trace the reasons which influenced the authors who are responsible for them.

It is hoped that the following compilation, besides being of some interest to pharmacists generally, may be of use to the pharmaceutical student in assisting to impress upon his memory names which may hitherto have been devoid of any meaning. On this account translations are given of even the commonest specific names, as an experience of ten years on the Board of Examiners has indicated that the classical knowledge of the average pharmaceutical candidate does not embrace a very intimate acquaintance with Latin adjectives.

My thanks are due to Mr. G. C. Druce, M.A., and Mr. E. M. Holmes, F.L.S., for their kind assistance in elucidating some points of difficulty.

RANUNCULACEÆ.

Hydrastis.—It has been suggested that the name is derived from the Greek ὕδωρ (hudor), water, and δράω (drao), to accomplish, owing to the reputed action of *H. canadensis*, the only species, on the mucous membranes. It is more probable that it refers simply to the fact that the plant grows in moist situations. *H. canadensis*, Linn. The plant is a native of Canada and other parts of North America. The names yellow root and golden seal indicate the characteristic colour of the rhizome and rootlets.

Helleborus.—The Greek ἑλλέβορος (helleboros) referred to species of this genus. The derivation is doubtful, but it has been suggested to be from the Greek ἑλεῖν (helein), the aorist infinitive of αἱρέω (haireo), to seize or kill, and βορά (bora) food; owing to the poisonous properties possessed by plants of this genus. *H. niger*, Linn. Latin, black, indicating the brownish-black colour of the rhizomes and rootlets. When cultivated in gardens it is usually known as the "Christmas rose," owing to its time of flowering.

Delphinium.—From the Greek δελφίν (delphin) a dolphin, to the mythical illustrations of which the unexpanded flowers bear some resemblance. *D. staphisagria*, Linn. The Greek name for the plant from σταφίς (staphis), the grape, ἄγριος (agrios), living in the fields. The English, stavesacre, is a corruption of the classical name.

Aconitum.—The Greek ἀκόνιτον (akoniton) referred to several species of this genus. It is supposed to be derived from Acone, a town of Bithynia, in the neighbourhood of which the aconite is abundant. Many other suggestions have, however, been made as to the origin of the word. *A. napellus*, Linn. Diminutive of Latin *napus*, a turnip, from the somewhat tapering shape of the roots. The English name, monkshood, is in allusion to the hooded calyx, the dark blue sepals of which form the most conspicuous part of the flower.—*A. ferox*, Wallich (Nepal or Indian aconite). Latin, *ferox*, fierce, probably indicating its dangerous poisonous properties. The synonym, *A. virosum*, Don., signifies poisonous. It is found in Nepal and the Northern States of India.—*A. fischeri*, Reich. (Japanese aconite). From Professor Fischer, a celebrated German botanist.—*A. heterophyllum*, Wallich. Greek, ἕτερος (heteros), different; φύλλον, a leaf. The leaves vary much in shape, the lower have long petioles and are reniform, while the upper are shortly stalked or sessile and narrowly ovate.

Cimicifuga.—Latin, *cimex*, a bug; *fugare*, to drive away. The name is derived from the properties possessed by certain species, especially *C. fœtida*, which on account of its powerful odour is used in Siberia for this purpose. *C. racemosa*, Elliott. The inflorescence of this species consists of a long erect raceme. Synonym, *Actæa racemosa*, from the Greek ἀκτέα (aktea), an elder tree, from a resemblance of the leaves to those of this plant. Its popular name, black snake root, would appear to indicate that it is efficacious as a remedy for snake poison, but such is not the case possibly it refers to the twisted shape of the rhizome.

Anemone.—Greek, ἄνεμος (anemos), the wind. It is supposed that the flowers require the assistance of the wind to expand. The plants often grow in exposed positions, and the petals are very liable to be scattered by the wind. Sir Wm. Jones poetically alludes to this characteristic:—

> "Youth, like a thin anemone, displays
> His silken leaf, and in a morn decays."

A. pulsatilla, Linn. Latin, *pulso*, to beat. This also refers to the susceptibility of the plant to the wind. Gerarde called it the Pasque or Easter flower, on account of its time of flowering.—*A. pratensis*, Linn. Latin, *pratum*, a meadow. The plant thrives in grass meadows.

MAGNOLIACEÆ.

Illicium.—Latin *illicio*, to allure, owing to its attractive perfume. *I. anisatum*, Linn. The odour of the fruit resembles that of anise (see *Pimpinella anisum*).—*I. verum*, Hooker. Latin, true. This is now believed to be the source of the official star anise.—*I. religiosum*, Siebold. Latin, *religiosus*, holy. This is the Japanese anise. In Japan it is held sacred, wreaths and branches are laid upon the tombs by friends of the deceased, and the priests burn the bark as an incense.

MENISPERMACEÆ.

Chondrodendron.—Greek, χόνδρος (chondros), a grain, and δένδρον (dendron), a tree. The tree receives its name from the rough or granular protuberances on the bark. This genus is often spelt Chondodendron, but from its derivation it would appear that the "r" was omitted by accident. *C. tomentosum*, Ruiz and Pavon. Latin, *tomentum*, down. The lower surface of the leaves is densely covered with downy hairs. The common name, *Pareira brava*, is derived from the Portuguese, *Parreira*, a vine that grows against a wall, and *brava*, wild. This indicates the climbing habits of the shrub.

Jateorhiza.—Greek, ἰατήρ (iater), a physician, and ῥίζα (rhiza), a root, owing to the valuable medicinal properties of the root of the chief species. *J. calumba*, Miers, is derived from *Kalumb*, the native African name for the root.

Anamirta.—Taken from an Indian term the meaning of which is uncertain. *A. paniculata*, Colebr. The inflorescence of the plant is panicled. The name of the fruit, *Cocculus*, is the diminutive of the Latin *coccum*, the berry of the scarlet oak. It is a native of India, as implied by the common name *Cocculus indicus*.

BERBERIDACEÆ.

Berberis.—From *Berberys*, the name for the plant in Arabia. The word also signifies a shell, and it is supposed by some writers to owe its name from its leaves being somewhat hollowed like a shell. *B. vulgaris*, Linn. Latin, common. The common Barberry.

Podophyllum.—Greek, *πούς* (pous), a foot, and *Φύλλον* (phyllon), a leaf. The divided leaf, supported by the firm erect petiole, is supposed to resemble the foot of a bird. *P. peltatum*, Linn. Latin, *pelta*, a shield. This refers to the peltate leaf, the petiole being attached to the blade at about the centre.

PAPAVERACEÆ.

Papaver.—This is the old Latin name; its etymology is uncertain. *P. somniferum*, Linn. Latin, *somnus*, sleep; *fero*, to bring, owing to its soporific properties.—*P. rhœas*, Linn. This is the classical name for the plant.

Sanguinaria.—Latin, *sanguis*, blood. The rhizome contains much juice of a blood-red colour.—*S. canadensis*, Linn.—The plant is a native of Canada and other parts of North America.

Chelidonium.—Greek, *χελιδών* (chelidon), a swallow. According to Gerarde, swallows were supposed to use it to restore sight. Other authorities say that the plant blossoms on the arrival of the swallow, and withers at its departure. *C. majus*, Linn. Latin, larger, distinguishing it from the lesser celandine, *Ranunculus ficaria*, Linn.

CRUCIFERÆ.

Cochlearia.—Latin, *cochlear*, a spoon, owing to the concave form of the radical leaves, especially those of *C. officinalis*. *C. armoracia*, Linn. A classical name, but doubtfully referred to this plant.

Brassica.—The Latin name for the cabbage derived from the Celtic, *Bresic*, having the same meaning. *B. nigra*, Koch. Latin, *nigra*, black, referring to the dark reddish-brown colour of the seeds. The English word, mustard, is derived from the Italian, *mostarda*, owing to its having a little must (Latin, *mustum*, unfermented grape juice) mixed with it in preparing the condiment.—*B. alba*, Koch. Latin, *alba*, white, from the light colour of the seeds.

CANELLACEÆ.

Canella.—Derived from the Spanish *cañela*, cinnamon, the *C. alba* being called wild cinnamon. *Canela* is a diminutive of Latin *canna*, a reed, from the quilled bark of the cinnamon. *C. alba*, Murray. Latin, white. The young branches have a silver-grey bark, the canella bark of commerce.

POLYGALACEÆ.

Polygala.—Greek, *πολύς* (polus), much, *γάλα* (gala), milk. Several species had the reputation of promoting the secretion of milk. Hence the English name milkwort. *P. senega*, Linn. From the Seneca tribe of North American Indians, who were accustomed to use the plant as a remedy for snake bites. Hence the common name rattlesnake root.

Krameria.—The genus receives its name from Dr. Kramer, a distinguished Austrian botanist. *K. triandra*, Ruiz and Pavon. Greek *τρεῖς* (treis), three, *ανήρ* (aner), a man, hence stamen. The flower is peculiar in having only three stamens.—*K. ixina*, Linn. From *Ixine*, the native name of the plant in Venezuela, where it was first discovered.—*K. argentea*, Mart. This probably refers to the silvery appearance of the leaves

GUTTIFERÆ.

Garcinia.—Named after Laurence Garcin, M.D., a French traveller and botanist. *G. hanburii*, Hook. Sir Joseph Hooker considers this as a distinct species from *G. morella*, Desrousseaux, and has named it after the late Daniel Hanbury, joint author of 'Pharmacographia.' The name of gamboge, the product of this tree, is derived from Camboja in Siam (formerly the capital of the kingdom of Cambodia) whence the drug is obtained.

TERNSTRŒMIACEÆ.

Camellia.—Named after George Joseph Kamel, a Moravian Jesuit and distinguished botanist who travelled in Asia and wrote a history of the plants of Luzon. *C. thea*, Link. The latinised form of the Chinese *Tèh*, tea.

MALVACEÆ.

Althæa.—Greek, *ἀλθομαι* (althomai), to heal. *A. officinalis*, Linn. Latin, *officina*, a workshop or manufactory, hence officinalis implies that which is of practical use for some purpose. It is called marshmallow, on account of growing in damp situations, mallow being derived from Greek *μαλακός* (malakos), soft, either on account of its emollient and demulcent properties, or more probably from the downy surface of the leaves.

Gossypium.—Derived from *goz*, an Arabic word meaning a soft substance; hence cotton. *G. barbadense*, Linn. This species is probably a native of the West Indies, and derives its name from the island of Barbados.

STERCULIACEÆ.

Theobroma.—Greek, *θεός* (theos), a god, and *βρῶμα* (broma), food. Cocoa is presumed to be fit for a god's repast. *T. cacao*, Linn. Mexican, *cacauall*, Cacao. The term cocoa belongs originally to the cocoanut palm (*Cocos nucifera*).

LINACEÆ.

Linum.—Latin, *linum*, flax, derived originally from the Celtic, *llin*, a thread. *L. usitatissimum*, Linn. Latin, most used, hence commonest. One of the most useful plants to man, affording flax, linseed meal and oil, etc.

Erythroxylum.—Greek *ἐρυθρός* (erythros), red, and *ξύλον* (xylon), wood. Some species of this genus possess a reddish coloured wood. *E. coca*, Lamarck. Cuca, the Peruvian name, signifies *the* tree, and indicates the importance which has long been attached to this plant. Coca is the Spanish name.

ZYGOPHYLLACEÆ.

Guaiacum.—Guayacan or Guaiac is the native South American name of the plant. *G. officinale*, Linn. Latin, officinal. One source of the resin.—*G. sanctum*, Linn. Latin, holy, indicating the estimation in which guaiacum has been held on account of its healing properties. *Lignum vitæ*, the wood of life, indicates the hardness and durability of the dark-coloured heart-wood.

RUTACEÆ.

Ruta.—This is the classical name. It is probably derived from Latin, *ruo*, to rush down, in consequence of the stimulant property of the following species:—*R. graveolens*, Linn. Latin, *graveolens*, strong-smelling. The whole plant has a heavy aromatic odour.

Barosma vel **Baryosma.**—Greek, *βαρύς* (*barus*), heavy, and *ὀσμή* (*osme*), an odour. The plants of this genus have a strong and characteristic aroma. *B. betulina*, Bartling. From Latin, *betula*, a birch, owing to the resemblance of the leaves in shape to those of the birch.—*B. crenulata*, Hook. The leaf has a finely serrate or crenate-serrate margin.—*B. serratifolia*, Willd. The margin of the leaf is closely serrate. *Diosma*, the genus to which, according to some authorities, the above species belong, indicates that the odour is divine. The term Buchu or Buku is the native name for the shrub in South Africa.

(*To be continued.*)

VISUAL OPTICS IN THEORY AND PRACTICE.—III.

BY LIONEL LAURANCE.

Instructor of Visual Optics at the Official Classes of the Worshipful Company of Spectacle Makers.

A distance of 6 metres is that which is most convenient for testing the sight, because it is the nearest to the eyes from which light proceeds in parallel rays. From any nearer place, the pencils of light from luminous points have an appreciable divergence so that accommodation has to be exerted in order that they be brought to a focus at the retina of an emmetropic eye; whereas those from 6 metres have no appreciable divergence and the retina of the emmetropic eye is situated at the focus of the rays after refraction by the dioptric media. It visual optics a distance of 6 metres is regarded as the same as infinity.

The faculty which the eye possesses of receiving on the retina images of external objects and transmitting to the brain the impressions so received, is called visual acuity, and is represented by the letter V. The visual acuity is properly the faculty possessed of distinguishing or recognising objects under the most favourable conditions, and must not be confused with either the range of vision or with the refractive condition of the eye. Thus, there might be considerable refractive error and the range of vision might be considerably reduced and yet the eye might possess exceedingly good sight. Still, it is usual, in testing the sight, to record the visual acuity unaided by glasses, so that O.D.V. = 6/6 means that the right eye sees number 6 line at 6 metres without the aid of glasses.

A record of each case should always be kept by opticians who prescribe or dispense glasses. For the first, systematic recording is very necessary, as even while making a test of the sight it is not easy to remember exactly all the details, such as the extent of vision of each eye unaided, which has the better vision, what can be seen through the pin-hole, etc. It is advisable also to note what glasses, if any, have previously been used, and the best corrections found by tests made by different methods or at different times should be entered in the record immediately they are made. The various details pertaining to a case are needed so that a comprehensive and correct judgment be made as to what corrections or advice ought to be given.

While any book will serve for recording, yet it is much better to use one specially prepared, as the optician is then less liable to overlook entering various details needed. In cases that present any difficulty a final selection of lenses should not be made as the result of a single test. The correction found at the first test should be entered and the second one commenced with it. Between the first and the second, if necessary, temporary spherical lenses might be given; they are particularly useful in cases of high hypermetropia or hypermetropic astigmatism, as they serve to render latent hypermetropia manifest and make the accommodation more passive at the second test. The record serves also as a reference when a customer needs a pair of glasses similar to those already provided, or when he comes a year or two later to get fresh lenses.

It is always good to know what changes have taken place in the eye. For instance, how much of a total hypermetropia has become manifest in the period that has elapsed since the first glasses were supplied, or whether myopia has progressed, or whether an apparent myopia has decreased. It is also useful to know whether insufficiency of the motor muscles has become more or less marked, and whether in a case of presbyopia the increase in the power of the glasses needed for reading be only such as would naturally be expected.

The names of customers should be indexed so that a record can be looked up without undue waste of time, and customers who are satisfied with corrective lenses always feel pleased if they know that they can obtain another pair in case of loss or accident to them. And, indeed, a customer should always be told that it is merely necessary to send in his name and address in order to obtain another spectacle or *pince-nez* if it be needed. The mere entering of details has on customers a beneficially impressive effect.

The visual acuity of the right eye should be first taken, and then that of the left; then these details should be entered in the book, the one eye being occluded while the other is being tested. The optician finds out what is the smallest line of letters legible on the test card at a distance of 6 metres; these letters represent the visual acuity.

A complete set of test types consists of a series of letters graduated in size according to the greatest distance at which they are supposed to be able to be read. Each letter is called according to this distance, and the largest, number 60, is of that size which represents the smallest sized object which can be distinguished by the average normal eye at a distance of 60 metres. The smallest on the distance card is number 3, and this should be legible at 3 metres. Between number 60 and number 3 there are numbers 36, 24, 18, 12, 9, 6, and 4·5 visible respectively at 36, 24, 18, 12, 9, 6, and 4 5 metres. The average normal eye can distinguish between two luminous points when they subtend an angle of not less than 1′, and the arms or part of each letter subtends this angle, the whole of each letter subtending an angle of 5′.

Proper distance test types are always made "block," and each part is in diameter 1/5th of the whole letter. Under angles of less than 5′ and 1′ letters might be seen as black objects, but they would not be made distinguishable as certain letters; thus confusion might be between a B and an E or a G and an O. It is better that the largest letters on the test card should be above, so that the smaller ones be more nearly on the level with the customer's eyes, and if the card be used at a distance of 6 metres there should be letters that represent the normal visual acuity for a shorter distance, say, 4·5 metres, and if the card be used at 4·5 metres the type should be graduated down to number 3.

It being understood that each letter represents the smallest object that ought to be distinguishable at its respective distance, and the test of the visual acuity being made at 6 metres, then if an eye can only see, say, number 18, its vision equals 6/18; which means that at a distance of 6 metres the eye can only distinguish that sized object which it ought to be able to see at 18 metres. If number 36 is the smallest or number 9 or number 6, then vision equals 6/36, 6/9, or 6/6. When vision equals 6/6 it is normal; it is able to see at 6 metres that which the average normal eye ought to see. But vision equal to 6/6 is not, under all circumstances, normal vision, for most eyes, if there be no high degree of error can see, up to about fifty years of age, number 4·5 at 6 metres. Therefore, in such eyes normal vision is 6/4·5. On the other hand, when there is a high degree of refractive error it is rare that so good a sight is obtainable, and normal vision must be taken as 6/6 or even 6/9. Also after fifty years of age, 6/6 must be taken as normal, and later in life 6/9 or 6/12, because with age the visual acuity decreases.

When rays of light come to a focus at the retina there is a clear, sharp retinal image, and on the size of the retinal image depends whether an object be seen or not. Now the retinal image is to an object in size as the distance between the nodal point and the retina is to the distance between the nodal point and the object. Consequently, the shorter the distance of the object, or the greater the distance between the nodal point and the retina, the smaller is

the object that can be seen. When the latter is increased, as in the long myopic eye, the visual acuity is greater than it is in emmetropia or in hypermetropia, and other things being equal, the myope, with corrected refraction, can see small objects beyond their normal distance, and therefore, can see objects under smaller angles than 5′ and 1′. The hypermetrope of low degree can also see rather better than the normal, because, exerting accommodation for distance, he can make the focus at the retina very exact.

Those people who have, owing to uncorrected astigmatism and hypermetropia, never been accustomed to sharp retinal images cannot appreciate them, and they require larger retinal images in order to recognise objects, and so have lower visual acuity.

If some letters on a certain line be read, but not others, say on number 9 line, then the sight should be recorded as vision equals —6/9. If a line is particularly clearly seen, but the next is not legible, vision might be recorded as + 6/9, or whatever the line might be. If the test be made at 4 metres instead of 6 the visual acuity would be recorded as 4/9 or 4/18, as the case might be.

Some opticians prefer to use the English instead of the metric measurements. If the test be made at 20 feet, vision would be recorded as 20/40, 20/60, etc., and the types on the card are called numbers 200, 120, 80, 60, 40, 30, 20, 15, and 10, they being letters which subtend angles of 5′ and 1′ at these distances in feet.

As each letter on the card subtends precisely the same angle at its respective distance, it follows that, if number 6 be legible at 6 metres, then number 20 would be legible at 20 metres, number 60 at 60 metres, and anything at any distance would be seen by such an eye as well as it could be seen by any average emmetropic eye. When no letter on the card is visible at 6 metres the card must be approached to the customer or the customer approached to the card until number 60 can be read. Suppose this to be only visible at a distance of 2 metres, then vision equals 2/60, but generally the same purpose is served by roughly measuring the distance at which fingers can be counted, because the diameter of fingers is about equal to the diameter of the parts of number 60 type. The hand test types for determining near vision used to be square letters subtending the same angles as the distance ones, but it has been found more convenient to use ordinary type graduated in size, and these are generally called number 1, 2, 3, etc., number 1 being the smallest and Number 3 being the same as newspaper type.

If an optician has to deal with people who cannot read, or who, being dumb, cannot express very well the recognition of letters, or children, he should employ what is called the "ignoramus" card, which consists of a series of graduated letters E turned up and down, right and left, the customer being given to understand that he has to tell in what direction the arms of the letter are pointed.

O.D. stands for the right eye, and O.S. for the left eye, and the visual acuteness of a person's eyes would be expressed in this way. O.D.V. = 6/48, with — 1·50 Sph. V. = 6/4·5. O.S.V. = 6/36, with — 1 D. Sph. V. = 6/4·5. This means to say the right eye unaided can see at 6 metres that size letters which should be legible at 48 metres, and that the — 1·50 Sph. improves the sight to the best normal acuteness. The left eye can see unaided at 6 metres only an object which should have been distinguishable at 36 metres, but that with a — 1 Sph. the sight is improved like the right eye.

It should be noted that the two eyes together almost invariably have a better visual acuity than each eye separately, also that care must be taken that if the sight be tested on different occasions the illumination be equal; otherwise a customer will not be able to see so well in the dull light as he would when the light is bright. For this reason, artificial illumination, which is always the same, is perhaps better than ordinary daylight. People who are in the habit of exercising their eyes considerably for distance, such as the inhabitants of the country, as compared with city people or those who live much in the open air, as compared with those who do not, have generally a greater keenness of perception for distant objects.

GERMS AND DISEASE.

BY T. REES.

Celestial bodies moving in infinite space once ruled the destinies of men; now they are governed by microscopic germs, finding an ample world in a thimbleful of water. A newer dynasty, too, having a stability in a granite foundation of scientific fact, which the other died out for the lack of. But what a drop to man, possessed of the notion of pre-eminence! A breadth of dignity there was under the old dispensation, in success attained by the help of the favourable motion of a planet, as well as a consolation when failure could be ascribed more to the unpropitious influence of another than to individual incapacity. But to be dominated by a germ! an individual so small that a lengthy row, swimming side by side, could at need, pass through the eye of a needle, and the outermost not scrape their sides in going! This is indeed a descent! and the only thing left to self-respect is to give our minute rulers as long names as possible. The inevitable must, however, be accepted, spite of sentiment, and recognition given these small forces, for so only can we hope to effectually carry things on. Luckily, as with the planetary forces, there are beneficent as well as harmful germs, although in a pessimist fashion our study has hitherto been mainly of the latter.

Now if modern research be correct in its conclusion, of higher life being so essentially dependent upon the lower, the general order of things must lie, in unceasing contest carried on between these microscopic satanic and angelic hosts; and, further, that the latter, as a rule, come off victorious, or our history would be far briefer and more dolorous than it is—even if it existed at all. Our treatment of disease, and hygienic practice generally, are but interferences in this fight, and very crude ones to boot. Yet even in the short distance, and by the rough methods, we have travelled, an immense gain has been achieved. Surgical operations in pre-Listerian days regarded as impossible, or next door to it, when germs were unknown or ignored, are now, by taking simple measures for their exclusion, classed as minor ones. With impending epidemic we have learnt enough to safeguard ourselves, to a degree, by cooking and swallowing them boiled, and innocuous, in drinking water; and to form mechanical barriers to their entry otherwise to our houses along their favourite high roads, the sewers.

But more refined methods will in due time supersede these rough and ready ones, as we gain a fuller knowledge of this low world we are as yet catching but brief intelligent glimpses of through our brass tubes and magnifying lenses. Each germ will then be as well known as we now know members of higher grades of life, and be classed as readily as we now put a cat in the cat, or a mouse in the mouse, class; the peculiar powers of each be as familiar, as on a larger scale we know of greyhound fleetness, tiger ferocity, or lamb gentleness. This gained, practical application of the knowledge for specific individual good is but a short step further forward. Instead of fighting typhoid, for instance, in the present fashion, with drugs and disinfectants of imperfectly known properties, the more logical and effective plan will be adopted of introducing into the circulation of the sufferer a particular microbe known to be

antagonistic to the one producing the disease, and its master in the fight that will at once take place when they meet each other—setting a terrier or mongoose microbe to clear off the rat ones, as it were. The doctor of the future will thus, in the first place, be a specialist in germs, a drop of blood, or any seeretion, sufficing for exact and immediate diagnosis; and his prescription, written out for a particular antidotal microbe, which the chemist, the responsible breeder and rearer, will dispense, embedded in a pleasantly flavoured gum pastille.

A great advance upon the pulse feeling and tongue examining of to-day, with the subsequent guesses at the cause of suffering, and hesitating or quackish treatment. Indeed, it is very probable that the future student of medicine will read of our medical and sanitary practice with much the same amused contempt that we do that of our forefathers, in firing cannon and burning vinegar to get rid of "plague," or in protecting a court from "jail fever" by placing a few pots of rue and rosemary on the dock ledge in front of the infected prisoner.

And what of the vast possibilities opened up in the inoculating against fevers and malaria that now make many a rich tropical district impossible to live in? Will not Panama after vaccination with a special microbe, prove as safe a place of residence as the Isle of Wight? After similar light precaution taken, the African seaboard and hinterland hold no terrors? Will not the old couplet concerning

"· · · The Bight of Benin,
Where one goes out of the hundred who go in,"

have lost its significance? And such a description as "The white man's grave," survive much as the unreal remembrance of a bad dream?

Further, the connection between the physical, and the moral and intellectual being so close a one, and the latter so dependent upon the former, if that will have become so amenable to desired change by the exploitation of our knowledge of germs, why, so will the others. When individuality is proved to be but a special arrangement of known germs, what is to prevent the developing of a dull brain into an active one, or inducing a bias in another towards a classical or scientific direction, by a particular balance of bacilli, wrong ones being scientifically cleared off, and deficient ones supplied by inoculation with the blood serum of distinguished specialists rich in them? Of creating valour in a cowardly boy, or reducing the untoward wilfulness of another, by similar introduction of carefully selected microbes from suitable sources? Or of curing criminals of evil propensities by inoculating them with germs from the blood of well-known philanthropists? "Benefactors of the race" will mean more then, by the way, than now; and with the test so absolute and unerring, and reputation gained by actual loss of blood, in place of mere expenditure of spare time and spare money, will probably run fewer to the acre than they do with us.

Who can say that religion itself may not benefit, a faith culture absorbed by a sceptic for his good; and, on the other hand, a diluted sceptic colony put into the enthusiast to his added effectiveness and practicability.

Amongst other curious side results, the love philter of mediæval days may become a scientific fact, and the love-sick maiden gain the man of her choice. All she need do will be to pass him a jujube in singing class, charged with a culture from a drop or two of her own blood, or introduce it into the gelatin of the meat pie reserved for him at a picnic; the result being the generation in so many days of an absorbing passion for herself, as the introduced germs breed and put in their special work.

What a tempting prospect again of toning down political animosities and asperities by judicious inter-vaccination. An exchange of germs, say, between a Salisbury and a Morley to mutual benefit in settling the Indian frontier or Chinese questions of the day. And so on, in a thousand different directions.

Abuses there will doubtless arise even in that golden age; quacks will stir up, as now, the bile and ire of their more legitimate brethren the doctors and chemists, by advertising, possibly, a one special germ, reared in the purity of their polar laboratories, guaranteed to kill injurious microbes of any kind—"to be obtained of all respectable chemists, etc." Club doctors will diagnose hastily, or guess, as they do now, and order anti-diphtheria germs for simple sore throat; and sectarian bitterness be kept alive—spread even—by well-meaning, but injudicious, introduction of sect germs into the buns and cakes of tea meetings and bazaars. But this cannot be helped, suffice it that the gain must infinitely outweigh the loss.

Common-sense people will, of course, say "absurd," and "impossible"; but they said much the same thing when the possibility of curing hydrophobia was first spoken of, or that it would be possible for a man, sitting at ease in the flesh, to consult a picture of his own bones. Yet these "absurdities" and "impossibilities" are commonplaces of to-day, and history will probably go on repeating itself. The germ of hydrophobia or tetanus we know to be powerful to death, though but introduced in a scratch; why may not many others with their phenomenal faculty for rapid breeding, and known power, have as pronounced and far-reaching effects for good and ill? And why should man fail here, for the first time, in becoming the ruler, to the end of his own advantage and good?

CHEMISTRY OF THE MORE IMPORTANT PROCESSES OF PHOTOGRAPHY.*

BY EDGAR M. CHAPMAN, PH.C.
(Burroughs Research Scholar, 1898–1899.)

The processes dealt with in the following notes are the preparation, exposure and development of the plate; fixing, intensification, and reduction of the negative; and the processes employed for the various forms of printing paper, including the gelatino-chloride-emulsion paper, with its subsequent processes of toning and fixing, the ferro-prussiate process, the bromide process, the platinotype process, and the carbon process.

The Preparation of the Plate.

Nearly the whole of the plates used at the present time are prepared by what is known as the "gelatino-bromide-emulsion process." These are the well-known "dry-plates," which consist of one or more of the silver haloids embedded in a film of gelatin. The silver haloid is precipitated in the gelatin solution by the addition of potassium bromide (sometimes mixed with a little iodide) to a mixture of solutions of gelatin and silver nitrate, and is then emulsified by shaking them together.

It is found that the silver bromide when first precipitated is not in the most sensitive condition, but that it takes a certain time for it to reach this state; this is called the "period of ripening.' When first precipitated, it is in an extremely fine state of division, the measurement of which particles has been shown by Eder to be from 0·0008 to 0·0015 of a millimetre in diameter.

During the process of ripening, which consists in placing the vessel containing the emulsion in a bath of boiling water and keeping it there, with occasional agitation for 30 or 40 minutes, the particles of silver bromide increase in size, and when they reach a size of from 0·003 to 0·004 M.m., which is the most sensitive form, the ripening is stopped by cooling the mixture. It is then well washed to free it from the potassium nitrate

* Read before the School of Pharmacy Students' Association.

which has been formed and also the excess of potassium bromide which it contains, otherwise these salts would crystallise out when the plate dried. The potassium bromide would also diminish the sensitiveness of the plate by acting as a reversing agent, by re-halogenising the invisible image.

Not only is the ripening accompanied by an increase in the size of the bromide particles, but the molecular growth is associated with changes in the optical properties, which enable the operator to ascertain when the emulsion is most sensitive. The emulsion before ripening is yellowish-white by reflected light and reddish by transmitted light. During the ripening the emulsion, by transmitted light, becomes richer in blue and violet rays and poorer in red rays. In other words, the larger particles absorb more red rays and allow more blue and violet rays to pass through. When ripe the emulsion is grey or greyish-violet by transmitted light, and greenish by reflected light. The changes undergone by the bromide are of a physical character, and are not accompanied by any change in chemical composition.

The extreme sensitiveness of a gelatin emulsion is not due solely to the molecular state of the silver haloid. It also depends upon the property of gelatin, being a halogen absorbent, and thus, by combining with the bromine, acts as a sensitiser; and also because of the intimate contact of the silver particles and the gelatin. The emulsion, after ripening and washing, is then spread upon the plate or film and allowed to dry.

Exposure, or the Action of Light upon the Plate.

The action of light upon the plate produces no visible image, and the plate, to all appearances, is the same as before exposure. That there is some chemical change takes place during exposure is proved by the action of developers upon those parts which have been subjected to light, whilst they are without action on the other parts of the plate. By the action of light, the silver bromide is converted into a reduction compound of silver bromide, which most probably consists of the sub-bromide of silver, Ag_2Br, formed according to the following equation :—

$$4AgBr = 2Ag_2Br + Br_2$$

The bromine being absorbed by the gelatin, which in this case acts as a sensitiser. Some text-books give the probable formula of the reduction product as an oxybromide of silver of the formula Ag_46Br_2, but that the product does not contain oxygen has been proved by Carey Lea and A. Richardson. But, whatever may be the chemical composition of this product, we may provisionally call it a reduction compound, because it contains less bromine than the original bromide.

The processes which have now been considered consist of obtaining a sensitive film of silver haloid on which the image formed by a lens has impressed itself in an invisible form on exposure for a suitable period.

In order to make this invisible or latent image reveal itself the plate must be subjected to the next process, called—

Development.

Developers may be divided into two classes, acid developers and alkaline developers. I shall touch but briefly upon the former class, since they are but seldom used at the present day, being confined to the development of wet collodion plates. These plates are still used for some purposes by professional photographers, and some of you, no doubt, have had to make up the developer and may have to again, so I think it is necessary that you should know the action of the same.

Wet collodion plates are prepared by adding a solution of ammonium or cadmium iodide to a solution of collodion and coating the plates with this solution. Then, when required for exposure, they are sensitised by dipping them into a solution of nitrate of silver and then exposed whilst still wet. The plate on being dipped into the silver nitrate solution is coated with a film of silver iodide, by the double decomposition between the ammonium or cadmium iodide and the nitrate of silver, and it is also covered by the adhering solution of silver nitrate. On exposure the silver haloid is reduced, forming the silver reduction product, where acted upon by light.

The usual developer consists of ferrous sulphate, glacial acetic acid, methylated spirit and water. On adding a solution of ferrous sulphate to a solution of silver nitrate, a precipitate of metallic silver is deposited according to the following equation :—

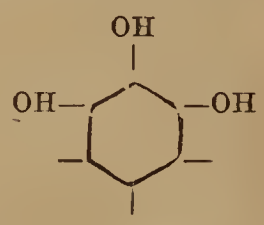
$$6FeSO_4 + 6AgNO_3 = 2Fe_2(SO_4)_3 + Fe_2(NO_3)_6 + 3Ag_2$$

If, therefore, the plates were placed in a solution of ferrous sulphate alone, there would be a black deposit of silver over the whole plate. To prevent this the acetic acid is mixed with the ferrous sulphate, which prevents the rapid deposition of silver, and by this means the silver is only deposited upon the reduction product and is proportional to the amount of that product. The acetic acid is, therefore, said to act as a "restrainer." The use of the methylated spirit is to ensure the solution flowing evenly over the plate. The deposit of metallic silver continues as long as there is any undecomposed silver nitrate upon the plate; hence if silver nitrate be added to the developer, a negative of greater density will be obtained.

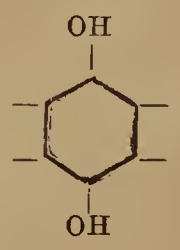
In considering the other class of developers, viz., the alkaline ones, which are used for dry plates, it must be borne in mind that we have no free silver nitrate upon the plate, but simply an emulsion of particles of silver bromide with gelatin.

In this case, therefore, ferrous sulphate would be of no use for developing with, and much more powerful reducing agents have to be employed. There are a great number of substances used as developers in alkaline solution at the present time. I will only mention a few of the chief ones :—

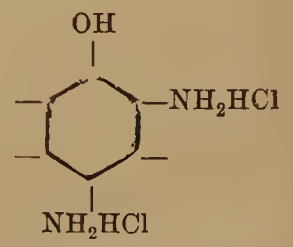
Pyrogallol, commonly known as pyrogallic acid,
which is the 1 2·3 tri-hydroxy-benzene.



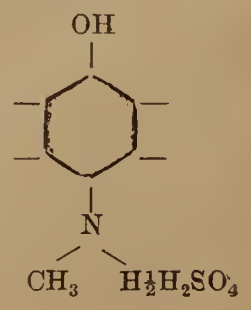
Hydroquinone, or Quinol,
which is 1·4 di-hydroxy-benzene.



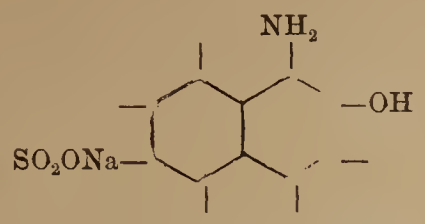
Amidol,
which is the hydrochloride of 2·4 di-amido-phenol.



Metol,
which is the sulphate of methyl para-amido-phenol.



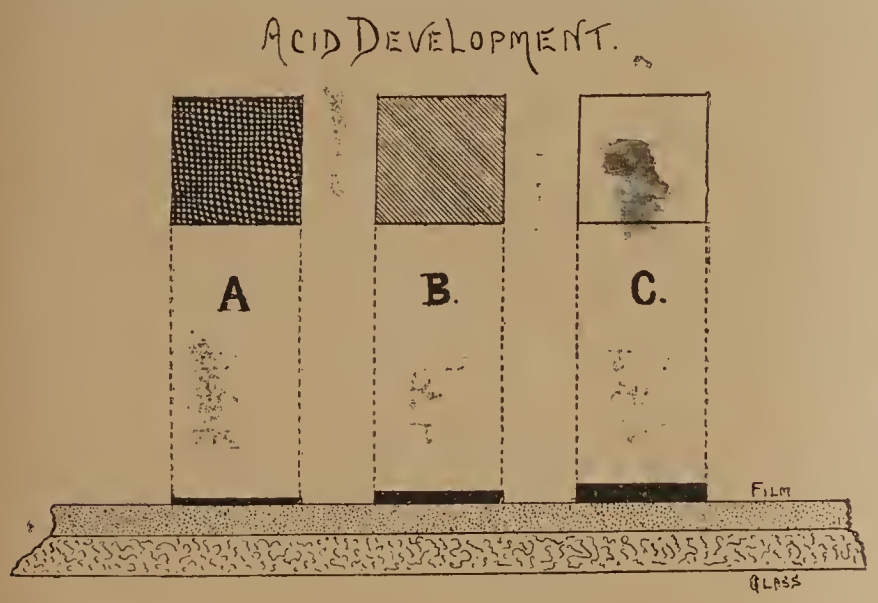
and Eikonogen,
which is the sodium salt of α_1 amido β_1 naphthol β_2 sulphonic acid.

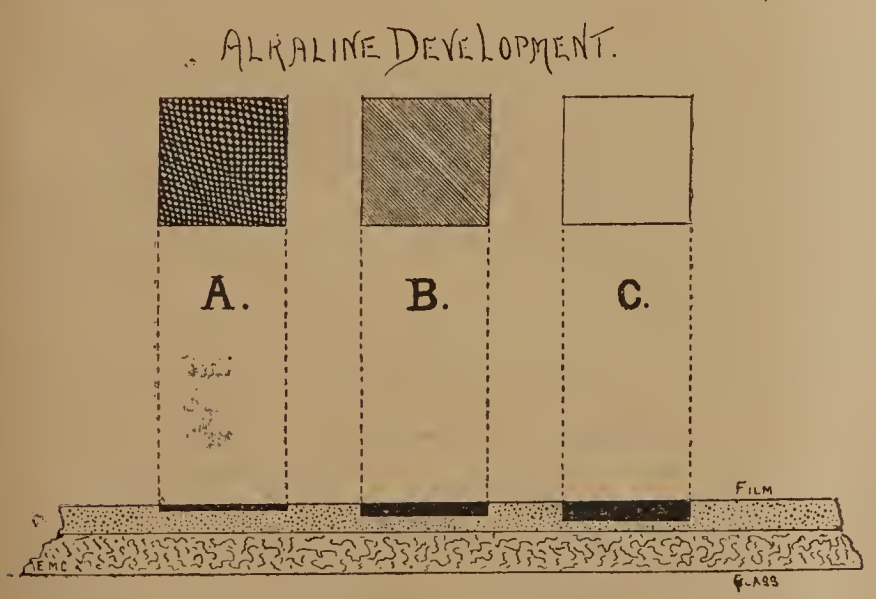


They are all very strong reducing agents, especially in alkaline solution, and by describing one of the developers I shall in the main be describing the class. So powerful are these substances in reducing properties, that in alkaline solution they can reduce the silver haloids. Hence it is necessary, as in the case of the acid developer, to have a substance present which will act as a restrainer.

The usual restrainers are the bromides of sodium and potassium. In an alkaline developer there are four essential constituents :—

The *developer proper*, as pyrogallol, hydroquinone, etc. ; the *accelerator*, as ammonium hydrate, sodium hydrate, potassium or





sodium carbonate, and lately acetone has been used ; the *restrainer*, as potassium or sodium bromide, and a *solvent*, which is usually water. Frequently a sulphite is added, usually sulphite of soda ; this is useful in that it prevents the too rapid oxidation and consequent discoloration of the developing agent, and thus prevents it staining the plate or the fingers.

On treating our exposed plate, which contains an invisible image composed of reduction product, with the developer, the first action is to reduce the small portion of reduction product to the metallic state. The rest of the plate is unaffected, owing to the presence of the restrainer. We have now, therefore, nascent silver in close contact with silver bromide, the two being wetted by the developing solution. By this means the unaltered bromide becomes reduced to metallic silver in those places where it is in contact with the nascent silver, that is, wherever light has affected the plate, and the quantity reduced is proportional to the intensity of the light, which acted. As to whether this reduction takes place electrolitically, or whether by purely chemical action, has not been definitely settled ; however, by one or other of these means it is brought about. By the reduction of the silver bromide the additional silver is supplied, which reinforces the film first formed and gives density to the image.

In the case of alkaline developers it is thus seen that the picture is built up from silver supplied chiefly from the unchanged silver haloid in the emulsion itself—not from the bromide generally, but only from those portions which are in immediate contact with the silver image resulting from the first action of the developer. Whilst in the acid development the silver is supplied from the silver nitrate film which covers the plate. In one case the silver picture is raised in relief upon the surface of the collodion, in the other case the image is sunk into the gelatin film.

A glance at the diagrams illustrates this, and also shows that the quantity of silver deposited is proportional to the intensity of the light acting.

The squares A, B, and C are supposed to have been photographed and developed. The lower portion in each picture represents a section of the plate showing the film, which is necessarily much exaggerated in thickness in order to illustrate it more clearly. Now, the square A being so dark and emitting so little light, will impress the plate least, hence the amount of silver deposited will be small ; B being lighter will affect the plate more, and hence more silver will be deposited whilst C will deposit more still.

The different action of the two kinds of developers is shown by the black portions, situated above and imbedded in the film respectively. In proof of this, it is found that if after development the silver image is dissolved off the plate by nitric acid, the surface of the film developed by the acid developer is simply restored to its original condition. On the other hand, the picture developed by alkaline development, being imbedded in the film instead of being raised on the surface, leaves its negative impression sunk into the emulsion after the removal of the silver by the acid.

There is one other class of developers which I should like to mention which act in the same way as the alkaline developers generally. These are certain organic ferrous salts. The one most generally used is the "ferrous oxalate developer." Ferrous oxalate is a yellowish salt almost insoluble in cold water, but readily soluble in a solution of potassium oxalate, owing to the formation of a double salt, thus—

$$FeC_2O_4 + K_2C_2O_4 = K_2Fe(C_2O_4)_2.$$

The developer contains this double oxalate as its active salt, and it is usually prepared by mixing solutions of ferrous sulphate and potassium oxalate in the necessary proportions, according to the equation—

$$FeSO_4 + 2K_2C_2O_4 = K_2Fe(C_2O_4)_2 + K_2SO_4.$$

In order to restrain the reducing power of the ferrous salt, potassium bromide is used as the restrainer.

The chemical action of the ferrous oxalate developer is simple enough. The ferrous oxalate, which is the reducing agent, becomes oxidised to the ferric condition by the bromine, which it withdraws from the reduction product, the latter being further reduced to metallic silver, while the unaltered silver bromide, except where it is in contact with the nascent silver, is not attacked, owing to the presence of the restrainer. The action between the ferrous oxalate and the reduction product thus resolves itself into the

action of bromine upon ferrous oxalate in the presence of potassium oxalate :—

$$3Br_2 + 6FeC_2O_4 + 3K_2C_2O_4 = 3Fe_2(C_2O_4)_3 + 6KBr.$$

The developed negative still contains unaltered sensitive bromide, and the whole of this must be removed to prevent further action on bringing it into the light. This process is called

Fixing the Negative.

It is done by means of some suitable solvent, which will take out the unchanged haloid without attacking the silver picture. The fixing agent most generally used is sodium thiosulphate, commonly known as "hypo." On treating a plate with a strong solution of thiosulphate of sodium, a double salt of silver and sodium is formed, which is readily soluble in water. The double salt is formed according to the following equation :—

$$2AgBr + 3Na_2S_2O_3 = Ag_2Na_4(S_2O_3)_3 + 2NaBr.$$

If a weak solution of thiosulphate be used, instead of the extremely soluble double salt being formed, another double salt is formed, having the formulæ $AgNaS_2O_3$, which is very insoluble and would remain in the film.

Another fixing agent which is sometimes used is potassium cyanide, which acts according to the well-known equation—

$$AgBr + 2KCN = AgK(CN)_2 + KBr.$$

forming the soluble double cyanide of silver and potassium. There are two objections to the use of cyanide of potassium as a fixing agent for dry plates. In the first place, commercial potassium cyanide is always alkaline, and exerts, therefore, a softening action upon the gelatin ; and secondly, it has a slight solvent action upon metallic silver, which thus tends to reduce the density of the image. Another objection being the fact that it is such a powerfully poisonous substance.

It sometimes happens that a negative after developing and fixing is found not to have sufficient density for printing purposes, due to insufficient deposit of silver caused by under-exposure or under-development. In order to remedy this the plate is subjected to a process called

Intensification.

The agent most generally used is a solution of mercuric chloride. If a negative be immersed in a solution of mercuric chloride, the black image is bleached, owing to the reduction of the mercuric salt to mercurous chloride by the metallic silver of the image, which is at the same time converted into silver chloride, thus—

$$Ag_2 + 2HgCl_2 = 2AgCl + Hg_2Cl_2.$$

The image in this state is obviously of no use for printing purposes, and so after washing off the mercuric chloride solution, the plate is treated with some substance which will change the bleached image to a black one. Thus by immersing the plate in a dilute solution of ammonia, the silver chloride is dissolved out and the mercurous chloride is converted into the black dimercurous ammonium chloride, thus—

$$Hg_2Cl_2 + 2NH_3 = NH_2Hg_2Cl + NH_4Cl.$$

Sometimes ammonium sulphide is used in place of the ammonia solution, when a mixture of the black sulphides of both mercury and silver are formed. Or, still another method is to treat the bleached image with a solution of potassio ferrous oxalate, which reduces both the silver and mercurous chlorides to the metallic state. By this means the image is greatly increased in density ; the equations are :—

$$2AgCl + 2FeC_2O_4 + K_2C_2O_4 = Ag_2 + Fe_2(C_2O_4)_3 + 2KCl.$$

$$Hg_2Cl_2 + 2FeC_2O_4 + K_2C_2O_4 = Hg_2 + Fe_2(C_2O_4)_3 + 2KCl.$$

It sometimes happens that a negative after developing and fixing has so much density that it will scarcely print at all. This is due to over-exposure or over-development, and to remedy this the negative is subjected to a process of

Reduction.

In this case the silver image must be thinned down by the use of some substance which will convert the metallic silver into such a state that it can be dissolved out. The two chief reducing solutions are Farmer's reducer, and Belitzki's reducer. They both depend upon the reducing action of metallic silver upon a ferric salt, which by this means it is itself converted into a salt, which is removed by dissolving in thiosulphate of sodium. Farmer's solution consists of a mixture of ferricyanide of potassium and thiosulphate of sodium. The silver image in this case being superficially converted into ferrocyanide of silver thus :—

$$2Ag_2 + 2K_6Fe_2(CN)_{12} = Ag_4Fe(CN)_6 + 3K_4Fe(CN)_6.$$

And the ferrocyanide of silver is removed by dissolving in the thiosulphate of sodium.

Belitzki's solution contains ferric oxalate and thiosulphate of sodium. The silver image in this case being superficially converted into silver oxalate, whilst the ferric oxalate is reduced to ferrous oxalate, which is removed by having an excess of potassium oxalate in the solution, the reaction between the silver and ferric oxalate being,

$$Ag_2 + Fe_2(C_2O_4)_3 = Ag_2C_2O_4 + 2FeC_2O_4.$$

The silver oxalate being immediately dissolved by the sodium thiosulphate. When a finished negative has been obtained, the next operation is to print from it. This may be done by any of the printing processes which I mentioned, the details of which I will now describe. To commence with, I will describe that printing paper which is used to the largest extent at the present time. I refer to the

Gelatino Chloride Emulsion Paper.

Just in passing, I think I had better mention the albuminised paper, which prior to the introduction of the gelatino-chloride paper was almost universally used. But owing to the difficulty of keeping sensitised albumin paper and the labour of sensitising it when required, it is hardly ever used now by amateur photographers, but professional photographers still use it. It is prepared by coating paper with a solution of albumin (in the form of white of egg) and ammonium chloride. This is termed "salting" the paper. When required for printing it is sensitised by floating the paper upon a solution of silver nitrate and then drying. The manipulation of albumin paper is, with slight exception, the same as for gelatino-chloride paper, which I will now proceed to describe. Owing to albumin paper being so little used now I shall not go into any further details.

Gelatino-chloride emulsion is prepared by precipitating a mixture of chloride and an organic salt of silver in a solution of gelatin and emulsifying by agitation. The emulsion is then spread upon baryta paper, which consists of paper coated with an emulsion of gelatin and barium sulphate, which prevents the gelatino-chloride emulsion from sinking into the paper. When dry it is ready for printing upon. It is printed in the usual way, by exposure to diffused daylight for a period of from a quarter of an hour to several hours, according to the intensity of the light and the density of the negative. When printed, before toning, the print should be soaked in water to remove any soluble silver salt which might be present. There is usually a little free silver nitrate present which turns the water in which it is soaked milky, due to the formation of silver chloride. If distilled water be used there will be no milkiness.

Before going on to toning, I must just mention that the chemistry of the action of light upon the paper is not definitely known. It is known that the reddish-brown image which is formed consists of a mixture of reduction products of the silver chloride and the organic silver salt. These products are supposed

to be analogous to reduction products which have been formed chemically from silver chloride and other silver salts, and which are called photo-salts. When the print has been washed it is subjected to the process of toning.

(*To be continued.*)

SELECTED PRACTICAL FORMULÆ.

Caoutchouc and Gutta Percha Cements.

Gutta percha, 100 parts; asphalt, 100 parts; oil of turpentine, 15 parts. The heated mixture cements leather to gutta percha. Elastic gutta percha cement for uniting leather is prepared as follows: gutta percha, 10 parts, are dissolved in benzol, 100 parts, the solution added to linseed oil varnish, 100 parts, and well shaken. The leather surfaces should be made rough before applying the cement. A solution of shellac in ten times its weight of ammonia makes a cement for fixing rubber to metal. The cement should be kept for three to four weeks, and then used cold. It is water and gas proof, and is suitable for hard rubber. A mixture of gutta percha and asphalte, used hot, also serves the purpose: so does 10 parts carbon disulphide and 1 part oil of turpentine mixed with gutta percha to a thick paste. Leather must be freed from fat, made rough where it is intended to join, and the two ends pressed into position until the cement is dry. Caoutchouc cement is obtained as follows: Finely cut caoutchouc, 100 parts; resin, 15 parts; shellac, 10 parts, are dissolved in carbon disulphide; or, caoutchouc, 1 part; mastic, 7 parts; chloroform, 50 parts; to be kept for several weeks. Cement for repairing rubber soles of shoes: *(a)* 10 parts caoutchouc dissolved in 250 parts chloroform; and *(b)* caoutchouc, 10 parts; resin, 4 parts; oil of turpentine, 40 parts, mixed and dissolved. Equal parts of these solutions are mixed for use.—*Pharm Centralh.*, 39, 102.

Odourless and Tasteless Ichthyol.

Ammonia ichthyol, 200, are mixed with distilled water, 250, and hydrogen peroxide (10 volumes), 100. The mixture is set aside in the cold for forty-eight hours, after the lapse of which the peculiar ichthyol odour will have disappeared. It is then evaporated to 200. If the mixture previous to evaporation has an acid reaction it must be neutralised with ammonia. This process is based on an observation by Helmers, that the odorous constituents of ichthyol are readily oxidised, while that body itself is not so susceptible of oxidation; a large excess of peroxide should be avoided, and evaporation should take place as soon as the deodorisation is complete.—*Pharm. Zeit.*, 45, 859.

Water Lacquers.

Shellac Water Lacquer: Boil 28·5 of shellac with borax, 42·75, in water, 564, until the shellac is dissolved. This varnish is a good binding agent for water colours and also useful for paper. It dries with a good gloss, and is waterproof; by the addition of aniline colours soluble in water, it may be tinted to any shade. *Enamel Lacquer*: Mix equal parts of fresh egg albumin and water, adding a little phenol or salicylic acid as a preservative; or, instead of the fresh white of egg, dried albumin may be used in the proportion of 28·5 parts in 564 of water. This dries with a good gloss. *Glue Lacquer*: Dissolve 1 lb. of good pale glue in 9 litres of water; immediately before use add 28·5 grammes potassium bichromate. *Crystal Water Lacquer*: Dissolve white gum arabic, 450, and glucose, 450, in water, 1629. This solution dries hard and glossy. —*Scient. Amer.*, 79, 394, after *Faerb. Zeit.*

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.

Although zoology does not form one of the subjects required by the British Pharmaceutical Boards, the facts that it is included in most Continental curricula, and that so many animals are of direct interest to the pharmaceutical student, form sufficient reason for devoting a few of these columns to some general notes on the science.

The Principles of Classification.

The animal kingdom is divided into twelve phyla or sub-kingdoms, the first of which is the Protozoa, consisting of the simple unicellular animals, and the last, the large phylum Chordata, which includes all animals possessing a spinal column or cord, whether perfect or rudimentary, vertebrated or continuous, ossified or cartilaginous. The phyla are again divided, sometimes into sub-phyla, into classes, sometimes into sub-classes, into orders, sometimes into sub-orders, into families, genera, and species. The system of nomenclature is the binomial system of Linnæus, the latter or specific name generally indicating a habit, a habitat, or the name of a discoverer.

Four kinds of evidence are used in determining the systematic position of an animal. The evidence of morphology or general structure, of anatomy or internal position of parts, of histology or microscopic structure, and the evidence afforded by embryology or development. These four bases of classification may be illustrated in the phylum Chordata as follows: The common bat is placed high in the scale. Being viparious it is a member of the class Mammalia, its pectoral teats and skeletal structure class it near the lemurs and lower monkeys. Again, frogs, newts, and salamanders possess a lower organised vascular and nervous system than the lizard or crocodile; they are therefore not included in the class Reptilia, but form a separate one—Amphibia. Again, the common sea-squirt (*Ascidia*), although in general appearance and in adult life a low form, possesses in its larval stage a rudimentary spinal column or notochord in its tail, and for this reason is advanced to the phylum Chordata, showing a peculiar instance o degenerative metamorphosis.

The three main functions of an animal in life are, to adapt itself to its environment, to repair waste and to reproduce its kind, which functions are carried out by the various systems of organs, muscular and sensory, digestive and vascular, reproductive or generative. Except in the lowest forms these organs occur in a more or less modified way throughout the entire animal kingdom. The organs which are particularly affected by the animal's environment are the organs of sense and the organs of motion. The primary organ of sense is the thread-like tentacle of certain Protozoa. As we proceed higher in the scale we find rudimentary eye spots of light-absorbing pigment, otocysts or rudimentary ear-sacs and a gradual differentiation of more complex structures. Organs of motion may be pseudopodia, protoplasmic processes intermittently thrust out at any point in a unicellular animal, or constant varying thread-like processes called cilia or masses of elastic cells and fibres known as muscles.

In the repair of waste or function of nutrition several sets of organs take part—the alimentary, vascular, respiratory, and excretory. In the simplest forms the animal cell takes in food and oxygen at any and every part. Next occurs the formation of a mouth and digestive sac, from which the organism takes its nourishment direct. Later on we find a vascular system in connection with the digestive organs, through which system the products of digestion are taken up into all parts of the body.

The absorption of oxygen in low forms is by the whole body. In the crustaceans, molluscs, and fishes, it takes place by means of feather-like processes called gills, specially adapted to collect it from the water in which the animals live, and in the higher animals by finely branched membranous sacs, the lungs. Carbonic acid is excreted by the respiratory organs, but nitrogenous excretion is effected by a specially differentiated system, the urinary system, the structures of which vary very much in different types.

Reproduction may be asexual or sexual. Alternation of generations frequently occurs, as well as true metamorphosis. These peculiarities will be pointed out in mentioning the various groups.

EXPLANATORY NOTES ON THE B.P. 1898.

Liquor Strychninæ Hydrochloridi.—The concluding lines of the note dealing with this preparation at page 84 require amendment, since the crystals separating from a hydrochloric acid solution of strychnine hydrochloride are no doubt crystals of the neutral salt (so far as can be ascertained by analysis, inasmuch as there is always adherent hydrochloric acid on the crystals). This view is borne out by the neutral strychnine and cephaeline hydrochlorides being precipitated by hydrochloric acid, and not the acid salts (see *P. J.* [3], **25**, 373).

Oils (Essential).—Reference should be made to the article in the series dealing with these bodies in relation to the 1885 Pharmacopœia, which will be found in the Students' Page, *P.J.*, August 28, 1897. A general description was there given of essential oils and their constituents, as well as the processes usually employed for their analysis and valuation. With regard to the latter it was remarked that the characters and tests given for essential oils were very inefficient for the purpose of determining their quality or sophistication, but that in the forthcoming edition of the Pharmacopœia they would no doubt be improved, since a large mass of material—the product of many laborious researches—had become available since the publication of the 1885 Pharmacopœia. This is to some extent borne out by a comparison of the tests in the new Pharmacopœia with those of the 1885 edition. Figures for the specific gravity and specific rotatory power have been given for most of the oils, as well as their solubility in alcohol. In certain cases also special tests have been given for the determination of certain bodies which are held to constitute the most important fraction of the oil. In addition to the general description given in the previous article, it may be remarked that although the terpenes stand in such close relationship to cymene, the conversion of cymene into a terpene, by the addition of two hydrogen atoms probably produces a profound alteration in the internal structure of the molecule. For while cymene undoubtedly contains a typical aromatic nucleus the terpenes are now regarded as derivatives of hexamethylene. The hexamethylene compounds, although containing a six carbon ring, do not exhibit the stability of the benzene compounds, and are now regarded as belonging to a group of compounds occupying a position between the aliphatic or open-chain compounds and the benzene compounds. To recall the fact that such bodies while containing a closed carbon chain yet approach the aliphatic compounds in chemical behaviour, they have been named the alicylic group.

Oleum Anethi.—The chief constituent of this is a body called carvone, of a ketonic nature and isomeric with the two phenols, carvacrol and thymol.

Oleum Anisi.—The chief constituent is anethol or para-methoxy-propenyl-benzene, $CH_3O \cdot C_6H_4 \cdot CH = CH - CH_3$. This crystallises out on cooling the oil, but the melting point of the previously solidified oil is more constant than the solidifying point, and hence is of more value as a test. If the re-melting occurs below 15° C. it indicates either addition of some adulterant or partial removal of the anethol. The slight negative rotation is characteristic.

Oleum Anthemidis.—The composition of this oil is very complex, but the presence of an unusual proportion of aliphatic esters has been observed.

Oleum Cajeputi.—This contains about 50 per cent. cineol, which is identical with eucalyptol. The solidification produced with phosphoric acid 1·75 is due to a crystalline compound of the acid with this cineol.

Oleum Carui.—The best known constituent is carvone, which is also present in dill oil. Specific gravity falling below ·910 would indicate partial removal of this constituent, which, when pure, has a high specific gravity.

Oleum Carophylli.—The chief oxygenated constituent is a phenol—eugenol, which should constitute 80 per cent. or more of the oil. It may be approximately determined by agitating the oil with 10 per cent. potassium hydroxide solution and weighing or measuring the undissolved oily residue. Eugenol has a specific gravity at 15° C. of 1·07, hence oil of cloves having a specific gravity below 1·05 is regarded with suspicion. The blue colour with ferric chloride in alcoholic solution is characteristic of eugenol, which also forms a *yellow* crystalline compound with ammonia.

Oleum Cinnamomi.—The chief constituent is cinnamic aldehyde, the proportion of which is determined by separating it as the characteristic acid sulphite compound and measuring the non-aldehyde portion. The test with ferric chloride to detect adulteration with cinnamon leaf oil is based upon the observation that this leaf oil contains a large proportion of eugenol and hence strikes a blue colour with ferric chloride. The oil from the bark on the other hand contains only a small proportion, about 3 to 8 per cent.

Oleum Coriandri.—This oil contains the hydrocarbon pinene and linalol, an alcohol belonging to one of the unsaturated aliphatic series, and isomeric with geraniol. Although an open-chain compound it can easily be transformed into the closed-chain cymene.

Oleum Eucalypti.—The most important constituent is cineol, or eucalyptol as it was termed when obtained from eucalyptus oil. The Pharmacopœia does not insist on any definite proportion of cineol, but only that enough should be present to form sufficient of the cineol phosphate to make the whole semi-solid on the addition of syrupy phosphoric acid. The test for phellandrene depends upon the formation of a crystalline nitrite, that being a reaction characteristic of this terpene with nitrous acid (from the glacial acetic acid and sodium nitrite). The oils which contain much phellandrene are those which are least esteemed for use in medicine. The best eucalyptus oil contains over 60 p. c. cineol.

Oleum Lavandulæ.—The official tests for this oil are scanty, and this is due to the fact that the quality of lavender oil—after gross adulterations have been excluded by compliance with accepted physical constants—is estimated almost entirely by its aroma. The chief substances which have been separated are linalol, linalol esters of the lower fatty acids, cineol, and various terpenes. Although the English oil is much more esteemed as a perfume than the French oil, the proportion of esters in the English oil is under 10 per cent., while the French oil sometimes contains nearly 50 per cent. The proportion of ester may be determined by the process described in the "Students' Page," *P. J.*, August 28, 1897, but the percentage of esters found cannot be accepted as a guide to quality except in comparing foreign oils, the lower grades of which contain little or no esters.

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PHARMACEUTICAL INCORPORATION.

That British pharmacy would benefit were all chemists and druggists in Great Britain incorporated into one and the same body is an obvious truism, but the manner in which that incorporation may best be effected remains yet to be described. As a means to the desired end, however, the scheme propounded by the Vice-President of the Pharmaceutical Society at Bradford (see page 164) on Tuesday last appears to offer advantages which should commend it to the careful consideration of everyone who has the true interests of pharmacy at heart, and it is sincerely to be hoped that the experiment which it is proposed to attempt in the West Riding of Yorkshire may be imitated sooner or later in every county in Great Britain. Local associations, alone and federated, have done much during the past two or three years to show what a power the registered chemists of this country may become, if influenced by similar motives and working together on more or less identical lines; local secretaries of the Pharmaceutical Society have exceptional opportunities presented to them for proving how much benefit individuals may confer upon their craft, if they strive unfalteringly with singleness of purpose to advance the great cause which they should all have at heart. Mr. Newsholme has now shown, more definitely perhaps than has ever been done before, how an extension of the principle involved in the appointment of local secretaries may usefully be applied to augment and extend the beneficial operations of local associations. His cardinal point—the nomination of an individual to act as a means of communication between the registered chemists in each parliamentary division and their representative in the House of Commons—is obviously the idea around which the most perfect system of local pharmaceutical organisation can crystallise itself, and the possibilities suggested by the scheme of local organisation now laid before the registered chemists of Great Britain are almost inconceivable.

For let us consider what the realisation of the ideal so clearly and concisely explained at Bradford involves. In the first place, were the suggested scheme of local organisation perfected for the whole of Great Britain, not only would there be a registered chemist in each parliamentary division prepared to communicate in every case of emergency with the member for that division, but the means would also be provided for bringing together the whole of the trade in each district to consider any matter of importance to the craft, and all the existing organisations would be brought into closer touch without the necessity for any loss of their individuality. The Pharmaceutical Society is the body which, whatever may happen, must needs continue to be the only organisation capable of effecting any important modification in the conditions under which chemists and druggists now earn a livelihood. But, by reason of the peculiar position which it occupies in relation to the State, its methods of procedure must necessarily be directed in more or less general grooves. Much that its members would like to effect by combination, they are unavoidably precluded from doing by the position of the Society as a corporate body. Through the medium of local associations, however, they can allow their activities much freer play, and by the federation of those associations in the manner that has now become familiar, a second formidable combination can be constituted from the same elements. Let the two combinations work together, each affording facilities to and supplementing the work of the other, and the resulting organisation will be as powerful for the good of the craft and the confusion of its opponents as any such association can possibly be. Each registered chemist—as a member of the Society, of a federated association, as well as an individual in the enjoyment of all the privileges of citizenship—will be able to treble his influence. Why, then, should he hesitate to throw in his lot with the more far-seeing amongst his fellows?

The Pharmaceutical Society now includes little more than one-third the registered chemists of Great Britain and something less than half those in business on their own account. But while the influence it is capable of exerting is far in excess of its numerical strength, every increase of that strength counts for vastly more than the mere number of the additions. In the same way, a local pharmaceutical association may become a controlling power in its own particular district, even though it only partially represents the registered chemists of that district. The influence an individual may exercise depends, more than anything else perhaps, upon the persistence with which he makes his existence felt amongst those in authority about him; but let that individual become a member of the Pharmaceutical Society and he increases its power for good in a much greater ratio than the solitary addition to the list of members would seem to justify. Let him also support the local association for his district, so that it may be enabled to speak more confidently for the district and support the national organisation more effectively. Finally, let every registered chemist imitate the one typefied above in all the respects mentioned and, whilst pharmaceutical incorporation becomes complete, the power and influence resulting from the union of forces will become infinitely greater than is possible in the case of any number of incoherent units. Union is strength; disunion the prelude to social and political annihilation. As individual taxpayers, registered chemists will always be able to influence the course of events to the same extent that other respectable tradesmen and professional men may do; but if those legally qualified to carry on the business of pharmacy are to become a real power in the land, all petty scruples and individual fancies must be sunk in the endeavour to secure the greatest possible good for the whole craft.

THE COMPANY QUESTION.

To obtain a true appreciation of this burning question it is necessary to bear in mind a few leading facts. First, there is the fateful decision of the House of Lords in 1880 that the word "person" in the Pharmacy Act should not include an incorporated association, and the inference from that decision that such an association of unqualified persons may legally carry on the business of a chemist and druggist. That decision doubtless contains a deal of law, but it does not strike the lay mind as a brilliant model of equity. It is safe to say that during the eighteen years that have elapsed since then, the Council of the Society has been continuously seeking to repair the mischief then wrought. This is not stated in any Pangloss spirit, though official journalism is apt to be credited with a desire to present the official body on all occasions in the light of superlative excellence. It was the duty of the Council to give the question continued consideration; not to have done so would have been in the highest degree reprehensible. It was some years however, before any favourable opportunity presented itself of seriously attacking the evil. At length the Council resolved to approach the Courts on a different line. The Lords had pronounced a corporate body to be outside the 15th Section of the Pharmacy Act, 1868, but were the individuals composing that corporation equally immune when considered as individuals? That was the question placed before the Scotch judges in the Leith Depôt case. The answer was unfavourable to the Society, and it gave an immense impetus to company trading. Hope receded to a very low ebb until the Wheeldon case in 1889 established the principle of the liability of the actual seller. Still, the fact that one could proceed against an irresponsible assistant who could seldom be persuaded to remain in his situation long enough to be mulcted in penalties, being a poor sort of consolation either to the public or to the Council, other steps became necessary. Since 1895 nearly every Department of the Government has been in turn assailed with a view to bring home the unsatisfactory condition of the law. A summary of these efforts in chronological sequence appeared in the Journal for April 9, last.

It is unnecessary to again detail the work that has been done in conjunction with the medical, dental, and veterinary authorities to induce the Government to deal with the professional aspect of the question. But it may be stated that the want of success attending those efforts was due to two main considerations, first, it was felt that the financial and commercial abuses of the Companies Acts demanded priority of treatment; and, in the second place, most of the prominent public men who were consulted on the matter failed to perceive any danger to the community in the association of unqualified capitalists to carry on the business of a chemist by the hand of a legally qualified man. The latter idea evidently permeated the mind of the Lord Chancellor when he attempted to deal with the question last session by proposing to tack on to the Society's Consolidation Bill a paraphrase of the "Widows' Clause." It is to be feared that herein lies the greatest difficulty to be contended with, for it is much too late in the day to advance arguments antagonistic to the principle of co-operation, unless it can be conclusively shown that particular applications of it may be a menace to the public weal. Finance being so vital a factor in the commercial life of the nation, and Co-operation being the backbone of Finance, it is easily understood why the Companies Acts Amendment Bill now before the House of Lords—or rather a Committee of the House—is nothing more than an Investors' Protection Bill. Since that Bill first left the Board of Trade, however, events have shaped rather more favourably. Apart from the impetus to reform furnished by the series of scandalous revelations of financial abuse from Balfour to Hooley, official interest has been shown in the professional side of the question.

The Pharmacy Acts Amendment Bill, which became an Act in July, elicited valuable expressions of opinion from the Lord Chancellor and from Lord Herschell, that the defects of the 1868 Act, in regard to the omission of corporations from the scope of the Act, urgently call for remedy. That is what the Council had been saying for years; but when the remedy proposed by Lord Halsbury to be tacked on to the Society's little Bill proved to be no remedy at all, but only a very imperfect "tinkering" of a weak spot, without machinery for making the remedy effective, pressure had to be brought to persuade his Lordship to postpone the matter for further consideration. This he did by gracefully withdrawing his clause, and intimating his intention of reverting to the subject this Session. Subsequently the President of the Society had an interview with his Lordship and ascertained his willingness to introduce a Bill to remedy the evils complained of. To guide him in his work the President, after ascertaining the state of feeling amongst chemists and druggists as exhibited by the resolutions passed by local associations, forwarded the "Suggestions for a draft Pharmacy Bill" which were printed in the Journal for February 4. Those "suggestions" have not yet been acted upon, but they are under consideration. The active sympathy of the Lord Chancellor and Lord Herschell may therefore be placed to the credit of the account, and it is no mean asset. On the other side, however, must be recorded the circumstance that the House of Commons—which has as yet not been called upon to pronounce upon the question—is full of members deeply interested in company trading. This was forcibly brought out in the course of Mr. McNeill's amendment to the address last week, when it appeared that a large proportion of Ministers were directors of various concerns, and it is not a remote possibility that some Member of Parliament may be shareholders in companies at present engaged in carrying on the business of chemists. This possibility must not be ignored, and sound reason must be shown for asking that unregistered persons should be prohibited from investing their money in associations for carrying on the practice of pharmacy.

One other point has been raised. The pharmacists of Ireland suffer to a like extent from the company canker, and with characteristic vigour they put up Dr. Tanner to interrogate the House of Commons on the point recently. The reply of the Chief Secretary was very sympathetic, but he suggested that it might be desirable to have a Bill to deal with Ireland and Great Britain as a whole. If that is the official view the Lord Chancellor may have to drop the dispensing and other clauses of the suggestions formulated by the British Society, for Ireland has not given any indication of a desire to adopt such provisions on the western side of St. George's Channel. But it is not safe to prophesy with regard to what may take place. The whole business is extremely complicated, and whilst recognising that it is the unexpected which frequently happens, we can only wait and hope that our brightest hopes may not be belied.

THE POISON REGULATIONS.

The present issue of the *Pharmaceutical Journal* is being sent to everyone whose name appears on the Register of Chemists and Druggists, and in each copy is inserted a detached sheet on which are printed the regulations for the keeping, dispensing, and selling of poisons, which have been formally adopted by the Pharmaceutical Society and approved by Her Majesty's Privy Council. The regulations now have the force of law (*vide* Pharmacy Act, 1868, Sections 1 and 15), and it is unlawful for any person to sell or keep open shop for retailing, dispensing, or compounding poisons, unless such person shall conform to the regulations. Failure to conform with the regulations renders the offender liable to pay a penalty of five pounds, in accordance with Section 15 of the Pharmacy Act, and he may subsequently have his name erased from the Register, in accordance with Section 26. It is therefore desirable that no time should be lost by registered chemists in making themselves thoroughly conversant with the requirements of the regulations, and to that end they have been printed on the detached sheet referred to, so that they may be readily removed and placed in a prominent position in every pharmacy.

MARKING TIME.

The Lord Chancellor's Bill, which is expected to free the pharmaceutical calling from the intolerable yoke under which it has suffered for more than twenty years is still unborn and there is nothing yet in the way of sign or portent of its coming. This might induce something akin to discouragement if one did not remember that the House of Lords frequently illustrates the old dictum about the unexpected happening, as, for instance, the Lord Chancellor's expression of opinion upon the anomaly of company pharmacy when the Pharmacy Act Amendment Bill was in the Committee stage. There is, therefore, no ground for uneasiness, and the period of waiting for the redemption of Lord Halsbury's promise will be of infinite value if it be spent in organisation and consolidation. It is matter of pharmaceutical history that the interests of the craft have suffered not so much through legislative indifference to the woes of chemists, as through their own inability to agree on the remedy to be applied. Though actual unanimity may never be attained in a body of more than 15,000 intelligent men, practical agreement for working purposes, essential in any craft, should not be impossible among chemists and druggists. To effect such an agreement naturally involves some sacrifice of individual views for the time being; but it does not by any means follow that the postponement of those ideas will result in their absolute rejection. On the contrary, lapse of time may materially improve the chances of success, and it is well to bear in mind when entering upon the disheartening task of setting the world right, that progress is but the expression of a series of compromises. If this is open to the objection of being too much like an advocacy of "log rolling," it may be urged, in extenuation and without adopting the ethics of "Hosea Biglow," that the particular form of co-operation to which that term is applied, constitutes one of the fundamental principles of the politics of to-day, for practically nothing parliamentary can be obtained without taking it into consideration. Chemists must make up their minds to learn the lesson of mutual accommodation of views, or they will never have any political influence worth speaking of.

ANNOTATIONS.

The Benevolent Fund of the Pharmaceutical Society is a fund which merits the support of every chemist and druggist on the Register, for each one is entitled, in case of need, to participate in its benefits. As we have stated on many previous occasions, when referring to the matter, every registered chemist should regard the Benevolent Fund as standing between him and possible penury; he should look upon it as a joint-stock provision against the unexpected, in which he is a shareholder, and he ought to feel under a moral obligation to give consideration for his share in the shape of an annual subscription. Nearly fifty annuitants are now in the enjoyment of a modest fixed income from the Fund, and no genuine case of necessity presented to the Council of the Pharmaceutical Society ever fails to secure temporary assistance. It is not unreasonable, therefore, to expect a much larger proportion of registered persons to subscribe at least half-a-crown per annum to the Fund. Members and non-members of the Society are treated alike in granting assistance, but the support received from non-members is small in the extreme, in comparison with that afforded by persons connected with the Society. This is not as it should be, for the catholicity of the Fund ought to be reciprocated by universal support, and as this note should meet the eye of every registered chemist, we appeal to one and all to do their utmost on behalf of the Benevolent Fund. A little from each will be good, but it will be a gracious thing for everyone to do as much as lies in his power.

The Poison Regulations continue to perplex many registered chemists, though there seems little cause for the existence of such a state of affairs. Inasmuch, however, as uniformity of procedure is desirable—and bearing in mind that non-observance of the regulations might involve having one's name struck off the Register, in addition to the payment of a £5 penalty—it is as well that the question of ways and means should be thoroughly threshed out. So far as regards the dispensing and selling of liniments, embrocations, and lotions containing scheduled poisons, there is no doubt whatever as to what must be done, for the third regulation stipulates that such preparations must be sent out in bottles rendered distinguishable from ordinary medicine bottles, and bearing labels indicating that the contents are not to be taken internally. The first regulation is equally clear. It provides that in the keeping of poisons each bottle, vessel, box, or package containing a scheduled poison must be labelled with the name of the article it contains; also with some distinctive mark. This provision covers bottles, etc., kept on the shelves of the pharmacy or the dispensing counter, in the store-room or cellar, or anywhere else on the premises. The additional requirements in the second regulation may be varied at discretion. That is to say, each bottle, etc., containing a scheduled poison must be kept on one or other of the three systems specified, but it is not necessary that one system should be adopted exclusively The shop-rounds containing scheduled poisons, in addition to bearing distinctive marks, such as poison labels, may be kept on either the first or second system. The more potent articles may be kept in the poison cupboard, but that cupboard must be set apart for dangerous articles. Large quantities of poisons, such as are usually kept in a store room or warehouse, may be stored in accordance with any of the three systems—in vessels that are rather (*a*) tied over or otherwise secured; (*b*) rendered distinguishable by touch, or (*c*) kept in a room or cupboard set apart for dangerous articles. As we have previously remarked, the regulations are very elastic, but in one or other form they must be carried out, or the consequences may be serious.

The Register of Chemists and Druggists is constantly in need of retification, as the long list of names in this week's Journal proves. Any reader who finds his own name or the name of any friend or acquaintance in that list should at once intimate the correct address to the Registrar, otherwise the name is liable to be struck off the Register, after the proper formalities have been complied with. What those formalities are is explained in a footnote at page 182*a*, but all the trouble of sending registered letters, etc., together with the risk of erasure, will be obviated if prompt attention is paid to the Registrar's notice.

The Suggestions for a Draft Pharmacy Bill are troubling the grocers greatly, and at a recent meeting of the Federation of Grocers' Associations, whilst the report of the Parliamentary Committee was under discussion, the chairman of that committee —Mr. Councillor Shirley—said the proposed Bill of the Pharmaceutical Society would prevent grocers from supplying many "common ordinary necessaries of life" which came under the head of medicines. He was sure grocers were already surrounded by safeguards of so many kinds that they did not want to be put under any further restrictions with regard to those goods, and therefore they would oppose that Bill to the best of their ability.

In the House of Commons last week Mr. Field (Dublin, St. Patrick's) asked the First Lord of the Treasury whether the Government intends to bring in a Bill respecting the question of Ministers holding directorships in companies which are State-protected monopolies. Mr. Balfour, amidst laughter, replied in the negative. Mr. Weir (Ross and Cromarty) also asked the First Lord of the Treasury whether he would state why judges in Scotland are allowed to act as directors of joint-stock companies, whilst judges in England are prohibited from acting in a similar capacity. Mr. Balfour said he thought the honourable gentleman was wrong in the facts he suggested, and so raised more laughter. The subject of science and art classes was brought up by Mr. Bousfield, Hackney, N., who asked the Vice-President of the Committee of Council on Education whether complaints had been received by the Science and Art Department from schools of art, or from science and art classes connected with the Department, to the effect that their efficiency is crippled and their existence imperilled by the competition of free schools providing advanced instruction in science and art, and established and maintained by the School Board for London, in contravention of Clause VI. of the Department's directory; and whether he was aware of any statutory authority enabling school boards to charge upon the school fund any portion of the cost of instruction given to pupils who are not earning parliamentary grants in accordance with the minutes of the Education Department, but are registered in day or evening schools under the Department of Science and Art. Sir J. Gorst acknowledged that such representations had been received, and explained that the Committee of Council on Education has always been of opinion that the school fund cannot legally be applied to supply instruction which is not under the day school or evening school Code of the Education Department.

The Lambeth Guardians have had under consideration the appointment of a dispenser, and during the discussion on the question, the Rev. W. Hobbs stated that he observed the salary fixed was £100 a year. If that, he said, was the only salary a dispenser could obtain after qualifying for the position, all he could say was that parents had better make their sons plasterers, or something of that sort. And yet, we fear, sadly too many duly qualified chemists and druggists find it difficult to secure better remuneration.

The Chemists' Assistants' Association will hold its twenty-first annual dinner in the King's Hall, Holborn Restaurant, on Thursday next, March 2, at 8 p.m. The President, Mr. F. W. Gamble, will be supported in the chair by Mr. Walter Hills, President of the Pharmaceutical Society, Dr. Symes, ex-President of the British Pharmaceutical Conference, Sir J. Crichton Brown, F.R.S., Mr. Michael Carteighe, and many other prominent friends and supporters of the Association. The Committee earnestly desires that, as in former years, the dinner shall be a success, and trusts that there will be a large attendance. Tickets (5*s.* each) may be obtained of the Council and Stewards, or of the Hon. Secretary, Mr. George E. Pearson, 184, Blomfield Terrace, Paddington, W.

The Incorporated Law Society affords an example of accurate registration and protection of members of the profession obtaining their qualification through its examinations. The Society's control commences with the entering into articles of clerkship, it being necessary to enrol such articles with the Society within a limited time. By such means the Society has a record of all persons in England and Wales who are as it were apprenticed for the purpose of becoming qualified. Having passed the required examinations, it is still necessary to obtain annually from the Registrar of the Society a certificate entitling the person named therein (subject to payment of an Inland Revenue duty) to practise for a period of twelve months. Such certificate is granted upon a declaration, signed by the applicant, giving certain information, so that an up-to-date register of persons entitled to practise is to be found at the Law Institution. A fee of five shillings is payable annually for the certificate and no person is entitled to practise without renewing his certificate.

The Above Statement of Facts bears out the contention in last week's Journal that lawyers are probably as fully protected in the exercise of their profession as it is possible for them to be. With regard to the manner in which the rules of the profession are enforced, solicitors are officers of the court, and are subject to its summary jurisdiction if they misconduct themselves. Jurisdiction is given to a committee of the Council of the Law Society to hear any application to strike a solicitor off the Roll, or to require a solicitor to answer allegations, and if a *primâ-facie* case be established, it is the duty of the Society to bring the Committee's report before the court to be dealt with. There is also power to strike a solicitor off the Roll for allowing an unqualified person to use his name for profit, and the unqualified person may be imprisoned for any period not exceeding a year. To practise without a duly stamped certificate is an offence punishable by a fine of £50 and inability to recover any costs or disbursements for work done. An unqualified person practising in court is guilty of a contempt of court and forfeits the sum of £50, in addition to inability to recover any fees or disbursements for work done. Unqualified persons preparing certain instruments for payment are also liable to a fine of £50. Finally, to pretend to be a qualified solicitor is an offence, punishable by a penalty not exceeding £10. A qualified person of course means a person who shall have in force at the time he acts as solicitor a duly stamped certificate.

The Procedure in Coroners' Courts is threatened with reform, suggestions to that end having come from a most unexpected quarter. The report of the Departmental Committee appointed to inquire into the manufacture and uses of water gas and other gases containing a large proportion of carbonic oxide has just been issued as a Blue-book, and the conclusion of the summary and recommendations of the Committee states that the

members are so much impressed by the insufficiency and untrustworthiness of the statistics relating to particular causes of mortality which can be gathered from the returns of coroners' verdicts, that they venture, though the matter is outside the terms of the reference to them, to recommend strongly that some steps should be taken to secure that those verdicts should lend themselves more readily to clear classification by the Registrar-General; and, in particular, they suggest that in every case where the coroner is in possession of a medical certificate of death, or where medical evidence has been taken at the inquest, a copy of that certificate or an abstract of that evidence should be appended to the coroner's certificate when sent to the Registrar-General.

Food and Drugs Legislation occupied the attention of Mr. W. H. Long, M.P., President of the Board of Agriculture, last week, when a deputation from the Federation of Grocers' Associations waited upon him with reference to the proposed Amendment of the Sale of Food and Drugs Acts. It was urged upon him that the interests of retail distributors should be fully considered and that the Act should be strengthened so as to make it more equitable to the honest trader and more effective in reaching the dishonest. Mr. Long, in reply, said the Government had determined to amalgamate the Bill he had given notice of with the Local Government Board Bill dealing with the general question of the adulteration laws. There was a misconception abroad that, because the Bill dealing with adulteration was in the hands of the Minister of Agriculture, there would be an undue regard for agricultural interests and undue neglect of the interests of other classes of the community. But in a matter of that kind, if the interests of those solely connected with agriculture were to be permanently served, it could only be by legislation which would be equitable in its incidence upon all classes, and which would have a due and proper regard for the just rights of the whole community, and not merely for the rights of those who would be affected by its administration. In any proposals to Parliament the Government would do nothing calculated to interfere unjustly with any legitimate and properly conducted trade. There was abundant evidence that fraud was carried on to an altogether undue extent and, further, that fraud was due not so much to the weakness of legislation as to the want of uniformity in administration. In some cases rigid and vigorous enforcement of the law drove out fraud within a district, but the dishonest trader found a home and refuge in some other area close by. Very moderate alterations of the law in the way of bringing about uniformity of administration would largely reduce those evils without harassing any industry or interfering with any legitimate trade. The public were entitled to ask that articles should be sold for what they were, and not for something else. Approaching the subject from that point of view and with a determination to do their best to make equitable proposals as affecting the whole community, the Government hoped to carry through Parliament a measure which would largely reduce, if not put an end altogether to, adulteration and fraud, without unduly harassing any industry or interfering with any legitimate right of the majority of the community. As a comment on the above, we must warn registered chemists to be on the alert and prepared to defend their interests at a moment's notice if, as seems not improbable, those interests should be threatened in the proposed Local Government Board Bill.

Illicit Commissions in Trade, to which attention has lately been directed by the Lord Chief Justice (*ante*, p. 153), are attacked in the draft Bill which Lord Russell intends to introduce, and that Bill was considered at a recent meeting of the Executive Council of the Association of Chambers of Commerce of the United Kingdom, when cordial approval was expressed of its general scope and object. The Bill has been drawn by Sir Edward Fry, and makes it a punishable offence to make, offer, receive, or solicit a corrupt payment, and it further provides that if any person shall give to any factor, agent, clerk or servant any receipt, account, or other document, in respect of which the principal, master, or employer is interested, which shall omit to state explicitly and fully any discount, rebate, gratuity, or reduction made, given, or allowed or in which there shall be any omission of any fact in relation to the transaction to which the said receipt, account, or document relates, and which it shall be for the interest of the principal, master, or employer to know, shall be guilty of misdemeanour, and in Scotland of an offence punishable by fine and imprisonment. Payments to servants and agents by persons having business relations with the master will be deemed to have been corruptly given or offered unless it be proved that the principal, master, or employer had given his previous consent in writing thereto. Corrupt payments to the relatives of any agent or servant, or to any person at the suggestion of or to gratify the agent or servant, are also dealt with; and one section prevents the servants or agent from setting up that he has satisfied his master or principal by not receiving some money or making some claim on him which he might have received or made. A secret payment made in respect of advice given to or influence exercised over a third person for the benefit of the donor is also deemed corrupt. The interpretation clause contains some exceptions from the operation of the Bill. Other clauses deal with penalties and certain technical matters. Though the Bill does not contain any definition of a corrupt payment, it declares certain payments to be corrupt, and leaves it open to the Court to act in any case in which it may hold the payment to be corrupt, though not within the particular transaction expressly declared to be corrupt.

A Tropical Medical School for London is the subject of a scheme which has just been approved by the governors of the Dreadnought Seamen's Hospital, Greenwich, the idea being to provide facilities for the study of tropical diseases. Mr. Chamberlain last year suggested that a plan should be devised whereby all newly-appointed medical officers in the colonial service could receive a sound and systematic training in tropical diseases in this country before taking up their appointments, and it was considered that the society's hospitals and dispensaries afford clinical material for such training, there being usually under treatment cases such as are to be met with in actual practice in the tropics. According to a note in the *Times*, the Colonial Office has agreed to contribute £3500 towards the cost of erection and equipment, estimated at £16,000, and a further £1000 per annum for maintenance. The Foreign Office has also consented to the protectorates under its administration making a contribution to the funds necessary for the carrying on of the scheme. Representatives from both the Colonial and the Foreign Offices are to be nominated to the committee of management. The London School of Tropical Medicine is not, however, to be confined to departmental officials, but medical officers from the great missionary societies and other corporations will go through a course of some months' training at the school before proceeding abroad. To complete the necessary funds for the undertaking, a festival dinner is to be held at the Hotel Cecil on May 10, when Mr. Chamberlain will preside.

A PRACTICAL WORK ON PHARMACY.

Companion to the Latest Edition of the British Pharmacopœia, comparing the strength of its various preparations with those of the United States and other foreign pharmacopœias, to which are added not official preparations, and practical hints on prescribing. By Peter Squire. Seventeenth edition. Revised by Peter Wyatt Squire, F.L.S., F.C.S. Pp. i.-xxxii., 1 to 850. Price 12*s.* 6*d.* London: J. and A. Churchill. 1899.

When a book has reached its seventeenth edition it is not unreasonable to regard it as a classic and practically beyond the limits of criticism. For a work which has met a distinct want during the past thirty-five years—passing through many editions in the interval and brought up to date as closely as possible in each edition—must have maintained its popularity during so long a period by satisfying the requirements of those on whose behalf it has been produced and, after all, the purchasing public is the critic which it proves most satisfactory to please. Squire's 'Companion,' however, is virtually a new book every time it is republished, so great and numerous are the changes in the text of each successive edition. The book first saw the light in 1864, as a modest volume of some two hundred and twenty pages, its present-day successor contains nearly nine hundred pages; or, to be precise, one hundred and seven more than the sixteenth edition, published four years ago. During those four years many changes have taken place in the world of medicine and pharmacy, including the publication last year of a new British Pharmacopœia. That work naturally has been gutted and commented on at length by the editor of the 'Companion,' and it is safe to say that no one can truthfully claim to know all that is at present required to be known about the new British Pharmacopœia until he has procured, read, and digested the new 'Companion.' But apart from official matter, there is much that is fresh in the latter work, particulars concerning several new drugs and chemicals having been introduced, whilst fresh information has been obtained about many drugs whose names are more familiar. The seventeenth edition, in fact, like its predecessors, is thoroughly brought up to date as regards matter that has been published, the book containing references as recent as January of this year, and a good deal of the information given—not the least valuable in the book—is derived from experiments and the personal experience of the editor.

Amongst the more recent introductions are heroin, peronine, ephedrine hydrochloride, mydrin, and piperidine tartrate; the cocaine substitutes and new silver compounds are described; creosote, guaiacol, and their combinations have received a large share of attention, especially with regard to the solubilities of those substances in different media, upon which points a good many experiments appear to have been made. The several paragraphs in each article—dealing respectively with solubility, medicinal properties, prescribing notes, and lists of official preparations—have been re-arranged especially to suit medical men and dispensers, so as to show almost at a glance all that is required under each heading. This alteration, which is a distinct improvement, is particularly noticeable in the monographs on acidum salicylicum, belladonna, conium, eucalyptus oleum, gelsemium, hyoscine, opium, pepsin, digitalis folia, and hyoscyamus. Amongst the monographs which have been entirely re-written and contain the most recent information on their respective subjects are those on atropine and its salts, digitalis, ipecacuanha, jaborandi, opium, pilocarpine nitrate and hydrochloride, quinine sulphate, and the thyroid gland.

The space available here would not suffice to mention the hundreds of additions that have been made to other monographs, but reference must be made to a number of the more important. The tests for lead are dealt with at length in connection with acidum citricum and acidum tartaricum, and Dieterich's remarks are quoted on the test to distinguish asafetida and galbanum from ammoniacum. Jowett's work on atropine is summarised, and the melting point officially given for atropine sulphate is shown to be open to question. There are useful and important notes on the testing of vinum aurantii, balsamum peruvianum, and balsamum tolutànum; an original test is described for the valuation of malts and malt extracts, and there are notes on the tests for calcii hypophosphis and cera flava. The quantity of cetaceum ordered for the free acid determination in the B.P. test is stated to be insufficient; the cinnamic aldehyde test for cinnamomi oleum is shown to be also applicable to oil of cassia; the comments on the tests for cocaine hydrochloride are to the point, and various criticisms on the copaiba test are quoted with references.

Creosote has incited the editor to produce quite a number of notes, one of the most important being that in which the solubilities of creosote are shown not to agree with those given in the B.P. In addition to a considerable difference in the solubility in water, the grouping in the B.P. of alcohol, ether, chloroform, glycerin, and glacial acetic acid as solvents might lead to disappointment, as the behaviour of creosote with glycerin is very different from that with the other solvents mentioned. Ferri carbonas saccharatus and ferrum redactum are the subject of notes under the tests, the percentage of metallic iron in the latter, though raised, being stated to be insufficiently so, and reference is also made to Peck's suggestion that a limit should be placed on the amount of arsenic allowed as an impurity. Formic aldehyde and guaiacol have a page each devoted to them; there is a note on the melting point of glusidum; additional tests are given for guaiacum resin; and, as would naturally be expected in the 'Companion,' the B.P. process for unguentum hydrargyri nitratis comes in for some severe criticisms. In regard to eucalypti oleum, it is pointed out that for many years the oil from *Eucalyptus amygdalina* has been official in the B.P., but it is now excluded by the official tests, though there is nothing in the definition of oleum eucalypti to make it clear to the average reader that the oil of *E. amygdalina* is now excluded. Eucalypti oleum is defined officially as the oil distilled from the fresh leaves of *Eucalyptus globulus* and other species of *Eucalyptus*. The great change with regard to this oil has unwittingly afforded an excellent opportunity for the display of zeal on the part of the public analyst, and without receiving sufficient warning, the chemist and druggist has been held up to public censure for selling an oil which has been official for thirteen years, whilst no very definite grounds appear to have been published for the exclusion of the oil formerly official.

There are notes on the melting point; etc., of hyoscine hydrobromide, and of hyoscyamine sulphate; the medicinal properties of ichthyol are fully referred to, and the monograph on ipecacuanha has been entirely re-written, so that it embodies the results of the latest investigation of that drug, Wilson's process for the assay of fluid extract of ipecacuanha is stated to give more accurate results than the official method. The jaborandi monograph has also been re-written. Then there are notes on the determination by acetylisation of limonis oleum and on the supposed new constituent of that oil, as well as many on menthæ piperitæ oleum. Under "opium" are published comments on the tests, some of which also apply to the tincture. In connection with the tests for pepsin, it is pointed out that, as Allen has shown, those tests have apparently been taken from the U.S.P., but the precise directions for the frequency of stirring are lacking; the B.P. also directs one-hirteenth of a grain of pepsin to be weighed for the determination,

whereas the U.S.P. orders a measured quantity of a solution of definite strength.

Several new references to the medicinal properties of pilocarpine nitrate have been added in this edition. Under "Potassii Tartras Acidus," the official term "slightest reaction is commented on," and there are various notes on the tests for the salt. A note on the official tests for quinine sulphate summarises Cownley's criticisms; the official tests for rosæ oleum are shown to be quite inadequate to ensure a good product; the suggestions for a valuation of santali oleum by means of the santalol contents are dealt with; and under "Sodium Bicarbonate" it is pointed out that though, in a previous edition of the 'Companion,' the mercuric chloride test was shown to be unsatisfactory, it is still retained in the B.P., notwithstanding its deletion from the latest editions of the German and United States Pharmacopœias.

In a paragraph on the subject of solubility, the solubilities given in the 'Companion' are stated to have been taken at 58°-62° F., and to represent solids by weight and liquids by measure, corresponding with the method of prescribing current in this country. It must have been a matter of great difficulty for the Pharmacopœia Committee to obtain figures for solubilities which would be equally accurate for temperatures as widely apart as 50° and 70° F., but that labour is stated in the preface of the B.P. to have been undertaken to meet the general requirements of medical practitioners. It is not stated in the Pharmacopœia whether the figures represent the liquids by weight or measure, but medical practitioners have the satisfaction of knowing that the physical properties of certain substances are supposed to have been changed for their especial benefit, and that impossibilities have nominally been effected. The nitrometer process for spiritus ætheris nitrosi and the new assay process suggested by Smith for that preparation are the subjects of comments; under "Spiritus Frumenti" the beverage whisky is treated at some length; the articles on strophanthus and the thyroid gland have been considerably enlarged and brought up to date, and there are some concise notes on the official syrups. Therapeutic agents of bacterial origin are dealt with in an excellent three-page article, by Dr. R. T. Hewlett, of the Jenner Institute of Preventive Medicine, which gives the reader a good general idea of this important subject, the methods of preparing antitoxins, tuberculin preparations, vaccines, nucleins, etc., being concisely described.

Finally, in the appendix, following each volumetric test solution appears a table of the uses to which it is put in the Pharmacopœia. This will be found handy as a reminder of the quantity of solution required for the substance to be tested. Some useful notes on the indicators are worthy of attention. In the case of sulphuric acid and sodium carbonate it is pointed out that the use of methyl orange as an indicator would obviate the necessity for boiling off the carbonic anhydride and shorten the time for the titration. In the case of chloral hydras the substance is first treated with volumetric solution of sodium hydroxide, and the figure given represents the excess of alkali after the reaction has taken place. The figures for sapo animalis, durus, and molle represent "the limit of alkaline carbonate" allowed by the B.P., and it is noted that the B.P. orders phenol-phthalein as an indicator for the titration of a carbonate instead of methyl orange, which is the indicator usually employed by chemists for that purpose. The B.P. also orders mucilage of starch as an indicator, but the only case in which it is expressly directed to be used is in the titration of acidum sulphurosum. The completion of the reaction in this case depends upon the appearance of a blue colour, whilst in the majority of other cases the completion of the reaction is indicated by the disappearance of the yellow colour of free iodine. It is pointed out that if a few drops of the indicator are added when the yellow colour is very faint, the disappearance of the blue is much more marked than the change from yellow to white.

As already stated, the text of the 'Companion' proper occupies one hundred and seven pages more in the new edition, but altogether there are one hundred and fifty-seven more pages, an increase of fifty pages being indicated in the appendix and index. At the same time, much thinner paper has been employed, so that the book is not greatly increased in bulk and retains its old handy form. Articles employed in chemical testing, test solutions, and the official tests, etc., require nineteen more pages for treatment; the classification of remedies and the therapeutical index extend to five pages more; and the index proper is increased by twenty-three pages. The materia medica table has, of course, been thoroughly revised in accordance with the British Pharmacopœia of 1898, and everywhere throughout the book there are indications of the most painstaking care having been taken to maintain the old and well-deserved reputation of the 'Companion.'

NEW REMEDIES.

Iodoformogene.—For this combination of iodoform and albumin, the following properties are claimed. It forms a very fine dry powder, which does not aggregate and form hard lumps. Being much less dense that iodoform it is more convenient to use. It possesses only a very slight odour, and exercises a remarkable power in promoting the healthy granulation of wounds; if its action is less intense than that of iodoform it is more certain and more persistent. From its physical condition it is easy to introduce into all the irregular spaces of a cavity, so that its antiseptic properties come into play over the whole surface of the wound. It sometimes gives rise to slight smarting, and, like iodoform, is occasionally followed by an eczematous rash.—*Nouv. Rem.*, 14, 220, after *Berl. Klin. Woch.*

Application for Urticaria.—In the *Journal de Médecine de Paris*, for July, 1896, the following prescription is given for local treatment of urticaria, specially to counteract the itching:—Aq. amygdal. amar., 5·0; chloral hydrat., 0·5; cocain. hydrochlor., 1·0; aq. dest. ad 50·0 m. D.S., externally.—*Münch. med. Woch.*, 1898, 1163.

Hydrochloric Acid in Sciatica.—G. Gennatas records a series of a dozen cases of neuralgia of the sciatic nerve, all of which were cured by means of the local application of strong hydrochloric acid. The procedure is simple: The acid is merely applied to the skin, by means of a small brush, over the painful part of the nerve, three or four coats being applied. The limb is then covered with cotton-wool. The application produces a severe smarting, but is quite bearable. A few minutes afterwards the skin becomes reddened and hot, and sometimes bullæ are formed. The application may be repeated in twenty-four to forty-eight hours, but not again for several days for fear of producing sloughs. The patients thus treated were all cured in from three to five treatments extending over a week to twenty-five days.—*Lancet.*

Quinine-Urea-Hydrochloride.—Solis Cohen finds that the double hydrochloride of quinine and urea is a valuable remedy for the hypodermic treatment of yellow fever, on account of its ready solubility in water. In acute cases, a dose of 10 centigrammes of the salt is given dissolved in 1 C.c. of water. At the same time 60 centigrammes are prescribed twice daily for internal administration. The puncture caused by the hypodermic syringe is painted with tincture of iodine and then covered with iodoform collodion.—*Zeit. d. allg. oest. Apoth. Ver.*, 52, 846.

PUBLIC DISPENSERS' ASSOCIATION.

At a meeting held at the St. Pancras Dispensary, on Friday, February 17, a lecture was given by Mr. F. Noad Clark, of Paddington Infirmary, on "Photo-Micrography and its Application to the Study of Entomology," illustrated by eighty slides and the oxyhydrogen limelight. A description was given of the methods employed, and photographs and diagrams of the apparatus were shown on the screen. It was pointed out that expensive and elaborate apparatus is unnecessary for low and medium power work, and that any one possessing a student's microscope and the requisite photographic knowledge, should be able to turn out really good work. Even a camera could be dispensed with; here Mr. Clark described fully his method of working.

Passing to the entomological portion of the lecture, the term "insect" was defined, some of the audience being surprised to learn that a spider is not an insect, nor is a cockroach a beetle. The metamorphosis of insects was then briefly explained, together with the various orders and their characteristics. Next came the microscopic structure and anatomy of insects, dealing *seriatim* with the antennæ, eyes, feet, tracheal system of respiration, etc., parasites, human and otherwise.

The slides exhibited were extremely fine, and showed great care and skill in their production; the beauty of the micro-photographs of moth and butterfly eggs were especially noted in the case of the parasite of the carp and stickleback. The lecturer said that these had been his special study for some time, and the results would be published in the April number of *Science Gossip*.—Mr. Forster proposed a hearty vote of thanks to the lecturer, which was seconded by Mr. Welford, and carried unanimously.—After the lecture a discussion on the poison regulations took place. Messrs. Welford, Darton, Miller, Goodall, J. J. Smith, and others took part.—The Secretary read a letter from Mr. Bremridge, in which he expressed an opinion that the regulations did not apply to public dispensers.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The members of this Association, alive to the important changes that have of late years taken place in the practice of medicine, and the importance of having some knowledge, however slight, of the present system of preventive medicine, secured for the meeting held at 73, Newman Street, W., on Thursday, February 16, one of the leading bacteriologists of the day—Dr. R. T. Hewlett, of the Jenner Institute—to deliver a lecture on

Antitoxins: Their Preparation and Administration.

There was a good attendance, and the lecture (see p. 168) was listened to with close attention throughout, much interest being displayed in the various culture tubes which were handed round for inspection, amongst which were tubes showing the violet, yellow, orange, and crimson pigment formations, specimens of *Bacillus coli communis*, *Proteus vulgaris* in gelatin, diphtheria bacillus in blood serum, diphtheria antitoxin (2000 units in 5 C.c.), tetanus bacillus, tetanus antitoxin, and *Streptococcus hominus*.

After the lecture, the President, Mr. F. W. Gamble, expressed the pleasure with which all present had listened to Dr. Hewlett's account of one of the greatest romances in modern medicine. Their interest in the subject was deepened when they remembered that it was one of their own countrymen who first started to treat disease on the lines now being universally adopted, and whose memory is perpetuated as its discoverer by the Jenner Institute. The relation of preventive medicine to pharmacy was, perhaps, not altogether to the interests of chemists, but it was a most interesting subject, and one that chemists should know a little about. The specimens exhibited that night were excellent examples of the minuteness of the bacteriologist's art.

Mr. H. Hymans wished to know if there was any recurrence of the disease after treatment with antitoxin.

Mr. C. J. Strother was rather sceptical as to the value of the antitoxic treatment, and wanted to have absolute positive proof of its utility before placing faith in it. He knew, he said, that many of the best and most advanced of the medical profession were opposed to the system.

Mr. George Pearson thought that as chemists might be called upon to supply serums in both the dried and the fluid forms it would be well if Dr. Hewlett could give them a simple method of standardisation

Dr. Hewlett, in reply to Mr. Hyman, said the immunity or insusceptibity to disease produced by antitoxin was quite different to that produced by the disease itself, which generally lasted throughout life, second attacks being rare, whereas the immunity following the use of antitoxin only lasts three weeks or a month. With regard to the remarks made by Mr. Strother, he thought there was overwhelming evidence as to the value of the treatment in cases of diphtheria. The way the membrane cleared from the throat was most striking, and the number of tracheotomy cases had been greatly reduced by the use of antitoxin. In the case of tetanus, however, the treatment had not been nearly so successful, because they did not get the cases early enough. Still the mortality was 10 or 15 per cent. less under antitoxin treatment than by the ordinary methods. With regard to Mr. Pearson's question as to standardisation in the case of fluid antitoxin, if each 5 C.c. contained 5000 units, then one gramme of the dried serum would contain 10,000 units.

Mr. T. Morley Taylor, in moving a vote of thanks to Dr. Hewlett, said they would all agree with him that it was not a mere formality, for they had listened to his remarks with the deepest interest. The position Dr. Hewlett occupied in the world of bacteriology and the interest he displayed in his work showed that his leisure time was largely a working time.

Mr. C. Morley endorsed the remarks made by Mr. Taylor, and had great pleasure in seconding the vote of thanks to Dr. Hewlett.

The thanks of the meeting were duly accorded, and the meeting then adjourned.

LIVERPOOL PHARMACEUTICAL STUDENTS' SOCIETY.

Mr. R. C. Cowley, the President of this Society, presided at a very successful business meeting, held at the Liverpool School of Pharmacy, Sandon Terrace, on Thursday evening, the 16th inst. The President himself contributed the first note on the utilisation of

Laboratory Waste Products.

He pointed out that the study of laboratory waste products is very interesting from the point of view of a student, as it impresses on him the fact that many of them may be easily worked up into useful substances. The following are some examples which had come under notice in laboratory work :—

1. A sample of ferrous sulphate shown was made from the waste liquid in making sulphuretted hydrogen. It contains over 99 per cent. of $FeSO_4 \cdot 7H_2O$. On concentrating the acid liquid, if it is evaporated too far, crystals having the formula FeS_2O_7 are deposited; also several hydrated forms of $FeSO_4$ may be formed. These require re-crystallisation to obtain the heptahydrated variety. The acid liquid left from the first crystallisation is diluted with water in the proper proportion, and again used for generating H_2S.

2. The above salt is then used to prepare ferrous ammonium sulphate, $FeSO_4(NH_4)_2SO_4 \cdot 6H_2O$, by adding to the solution the proper amount of ammonium sulphate and crystallising. The salt shown was quite pure, and is used for standardising solutions of potassium bichromate and potassium permanganate. Unfortunately the quantity of ferrous sulphate and ferrous ammonium sulphate obtained from the sulphuretted hydrogen apparatus is far more than the present needs of the laboratory.

3. The sample of cupric sulphate shown was crystallised from the residue left in the retort in preparing a small quantity of sweet nitre. The product is perfectly pure, not containing a trace of nitrate as one might expect.

4. A sample of iodine was shown and had been experimentally obtained from the waste liquids in iodine estimations. It had been resublimed and may be used for the purposes mentioned in the B.P. appendix.

5. Manganous chloride. This is the prettiest salt of manganese, but unfortunately it does not crystallise well, on account of its extreme solubility. It had been made from the mother liquor in preparing chlorine, by evaporating off the greater part of the acid; then precipitating a fraction of the liquid with Na_2CO_3, the precipitate of carbonate of manganese and ferric hydrate being then boiled with the remainder of the liquid to throw out the last of the iron. The liquid from the precipitate was evaporated until a pellicle forms, then drained, washed, and dried.

The above are all prepared with very little trouble, and their preparation lends increased interest to the work.

Mr. J. Harris Burns next described his experience with a few somewhat

Unusual Prescriptions.

A mixture containing calcium chloride, ℥iii., syrup of iodide of iron, ℥ss., and water to ℥iv., gave a dense precipitate rising to the surface of the liquid, but which disappeared on the addition of a trace of dilute hydrochloric acid. Another mixture of a similar kind with potassium bromide, calcium chloride, and syrup of iodide of iron gave a slate-coloured precipitate. The Hon. Secretary, Mr. Percy G. Jenner, when manipulating these prescriptions had first dissolved the calcium chloride in simple syrup, adding a few drops of dilute hydrochloric acid if the solution is not clear, then pouring this into the bottle containing the bromide of potassium made into a solution with the least possible amount of water, and finally adding the equivalent of the iron syrup in the shape of a concentrated solution of ferrous iodide, and making up to the amount with simple syrup.

Mr. Burns thought the precipitate he noticed in the first case was a chloride of iron; it was light red in colour:—

Cocainæ Hydrochlor.	gr. xii.
Tinct. Iodi.	♏xxx.
Aquæ	ad ℥i.

In this solution a deep yellow precipitate at once appeared, but the prescriber being consulted, and spirit being substituted for water a clear liquid was obtained. In the opinion of the President this was only what could have been looked for, seeing that iodine was such a general alkaloid precipitant and that these precipitates were mostly soluble in alcohol. Mr. Jenner's use of the liq. ferri iodidi in the former prescription might be objected to by some purists.

Mr. McGhie had had an emulsion to make, which had given some trouble. It was—

℞ Ol. Morrhuæ	℥ss.
Mucilaginis Tragacanthæ	℥ii.
Liq. Potassæ	♏xv.
Lactis Bismuthi	℥ii.
Aquæ	ad ℥iv.

Ft. Emulsio.

He found that the best way was to emulsify the oil with the mucilage and add the solutiou of potash last.

Mr. A. H. Morgan said it was quite possible to make the emulsion by adding the oil to the mucilage and solution of potash. Where there were two emulsifying agents used, it was often the case, according to Mr. P. H. Marsden, that one upset the work of the other, and chaos ensued. In such cases it was best to omit one of the emulsifiers if the other did the work properly.

Another mixture with extract yerba santa (fluid), ℥vi., syrup of squill, ℥vi., spirit of chloroform, ℥ii., and dilute hydrobromic acid, ℥iii., with water to ℥vi., gave a very unsightly deposit. Mr. White had noticed this also, and the President said it might be due to the acid of the syrup and the hydrobromic acid throwing out resinoid matter from the fluid extract. Whilst in South America Mr. P. J. Catford had remarked the peculiar use of the term yerba santa in different parts, saying that "peppermint" was the most usual drug going by the qualification of "blessed herb" in South America. The oleate of mercury of the B.P., 1898, which is made by precipitation at 180° F., is a white powder, miscible in the cold with soft paraffin, forming a light-coloured ointment. If heat be used the effect is, Mr. A. H. Morgan informed the meeting, to darken the colour, this being dependent on the temperature employed. When precipitation of the oleate takes place in boiling solutions a mass is produced of about the colour of lead plaster, giving a darker ointment when mixed with soft paraffin. He should like to know what temperature was the best to work at. The opinion of the meeting was that precipitation from hot solution with subsequent washing with boiling water was the best process.

The last query came from Mr. Wood, and was relative to a mixture containing Easton's syrup and spirit of nitrous ether, in which a yellow coloured deposit formed. This was put down to probably an oxidation product.

This interesting series of useful communications terminating, the President called upon

Mr. J. P. Catford to read his paper on

A Druggist's Apprentice in Days Gone By.

The author gave the experiences of an apprentice in the drug-trade forty years ago, the locality being a country market town about as far from London as Liverpool and before the time of the railway extensions. This particular apprentice, "Tyro," was fortunate in having for a governor one who could tell him of his old teachers at Bloomsbury Square—Pereira, Fownes, and Redwood—and who shared the prizes with the present Editor of the *Pharmaceutical Journal*, and other afterwards well-known men, such as Schacht. The governor also attended a course at the Royal College of Chemistry recently opened, and from there went to work in Liebig's laboratories at Giessen for three years. Thus "Tyro" got to know something about most of the prominent chemists of that time. Botany was then made an attractive study, and "even amateurs could at that time name and classify any indigenous plants." The apprentice's Sundays were spent in scouring the country for specimens, and on Mondays the governor, who had taken both botany and materia medica prizes at the "Square," would go over them, pointing out the characteristics of each, interspersed with anecdotes mostly ascribed to Pereira. He also had the use of a microscope, the run of all the published numbers of the *Pharmaceutical Journal* from 1841, onwards. Market-day was the only really busy time of the week, on other days the apprentices did not don their aprons, but were allowed to take books from the counting-house, *e.g.*, Pereira's 'Materia Medica' in two thick volumes, Lindley's books on botany, Mohr and Redwood's 'Pharmacy,' Grey's 'Supplement,' the successive pharmacopœias from last century down to the then current 1851 London one, both in its original Latin and Phillip's translation, Fowne's 'Manual of Chemistry,' and Fresenius's works on analytical chemistry, which were all used as students' text-books. With these aids and a short stay in London, where "Tyro" visited the Botanic Gardens, making acquaintance for the first time with many medicinal plants, and in the museums some of the rarer materia medica, he presented himself for the then voluntary examination, and successfully passed his Minor. "Tyro's" shop work during his apprenticeship days began with taking a dozen of Schweppe's soda water to a customer's house, taking down the shutters, and sweeping the shop-floor; his afternoons were frequently spent in taking the governor's greyhounds out for an airing, which generally meant going rabbit coursing, visiting river, pond, and brook, with the avowed object of procuring for the leech aquarium some anacharis, valianeræ, and water-snails, or other scavengers. "Tyro" also had opportunities of seeing how cupping-glasses and scarificators were used. Being an agricultural district there was a good demand for horse-blister, and the cantharides were powdered on the premises. "Patents" were full price everywhere. Daffy's elixir was stocked, both original (2*s.* 9*d.*) and own make (2*s.* 6*d.*), the latter consisting of tinct. sennæ co. There was no attempt at deception or substitution; the customer was left to choose for himself. A regular customer usually preferred the home-made article. If a stranger made an inquiry as to which was recommended, the usual answer was, "We know what our own contains; as to the other, refer to its wrapper." The shop windows were dressed according to the governor's taste. In the recess of one of the drawers were inscribed the autographs, with dates, of all the apprentices from away back in the last century.

Mr. P. F. White next gave his

Experience of Micro-Photography.

Mr. White did not attempt to lay down rules of procedure, but simply related his methods, which he said might not be the best, though they were fairly successful. One of the chief difficulties was in obtaining sharp pictures: to obviate this the intervention of a camera lens was found to be useful. Another trouble was in gauging the correct exposure, also with high-power objectives in getting an image sufficiently bright on the screen to see it clearly to focus. A few experiments usually got over the former difficulty, while for the latter the sections must be cut as thin as possible, the staining should be bold and well contrasted. The conformation of cell walls was an apparently insurmountable difficulty. The correct exposure and the choice of objective must come by experiment. He found that the most useful negatives were the 1 in. and 2 in., the exposure varying from ten to twenty seconds on a winter day of average brightness; direct sunlight must be avoided and great care taken that the illustration is even. Development of the plate he found to be simple, the ordinary pyro-soda developer of Ilford formula being the best. Mr. White then described the apparatus used, which was very simple. Daylight was the best to work by,

but magnesium light or a good lamp could be used. The exposure varied with ordinary plates from ten to twenty seconds, with process plates 80 to 160 seconds. Process plates gave the best results, the lines coming up clearer and in greater contrast to the ground. The developer was made up to contain an excess of the pyro-solution, and was developed well out, and after development was soaked in water for about five to ten minutes, the negative being then fixed, washed, and dried, ready for printing, which, on paper, was best done in a weak light.

A very cordial vote of thanks was accorded to the authors of the papers on the motion of the President, seconded by Mr. T. H. Wardleworth, and supported by several of the members, who said they had received considerable benefit from listening to the remarks of Mr. Catford, which almost raised in their minds the question as to whether or not the lot of the "old-time" apprentice was not preferable to that of the modern "pharmaceutical pupil." Mr. White's paper was agreed to be such a one as the younger recruits of the Society might take for a type of what was required of them—not laborious compilations of other people's work, but rather simple, clear, and practical methods for surmounting such little difficulties as are ever presenting themselves in a pharmacist's daily work.

NORTH STAFFORDSHIRE CHEMISTS' AND DRUGGISTS' ASSOCIATION.

A monthly meeting of this Association was held at the Copeland Arms Hotel, Stoke-on-Trent, on Thursday last.—The President, Alderman J. Averill, J.P. (Stafford), was in the chair, and there were also present Messrs. J. Adams (Vice-President); Edmund Jones (Hon. Secretary), Hanley; Weston Poole (Treasurer), Newcastle; T. C. Cornwell, Hanley; E. H. Croydon, Newcastle; F. W. Wrench, Silverdale; G. R. Hankinson, Uttoxeter; W. H. Hartley and J. B. Blades, Leek; R. Prince, Longton; W. Oldham, J. Fernley, and Waddingham, Burslem; S. C. M'Kee, Tunstall; T. H. Jenkins, Stone; T. Bentley, Shelton; W. B. Allison and F. Allison, North Staffs. Infirmary.

The Suggestions for a Draft Pharmacy Bill.

The business of the meeting was confined to a discussion of the suggestions for a draft Pharmacy Bill.

After an explanatory address by the President, the Clauses were considered *seriatim*.

Clause 1 was adopted unaltered after some argument as to whether the word "person" included every individual shareholder of a company.

Mr. Poole considered that such was the case, because the Society was desirous, as he was desirous, of preventing anyone unqualified from reaping benefit of the profit from pharmacy.

Mr. Jones agreed. An unqualified shareholder would under the reading of that Clause be in an illegal position.

Mr. Poole: Do the people in London mean that?

Mr. Jones: I take it that they do.

Mr. Poole: Unless that is the case the Clause does not go far enough.

Considerable time was taken in the disposal of the second Clause.

In answer to a question the Chairman said he took it that the word "medicines" included Epsom salts and senna or anything of that kind. No one except a pharmaceutical chemist or a chemist and druggist and those especially exempted would be able to sell these and similar drugs.

Mr. Poole thought it would be very nice for them if they had the monopoly, but he doubted whether the Society would be likely to get the Bill through with such a clause. It was a radical change to expect the public to deal exclusively with qualified men for sweet nitre and other little things which were now obtainable from small hucksters. It would be a pity to weight the Bill with such very controversial matter as that. He did not think the public would stand it. Had the Pharmaceutical Society made inquiries as to whether that Clause was likely to be supported by high authorities?

The Chairman: I think we may be sure that it has been framed on lines submitted to the Lord Chancellor.

Mr. Jones thought the attempt to confine the selling of simple drugs to themselves would raise up an immense amount of opposition in the country, and thereby they would resist the first and vital clause being passed. He pointed out that it was the extensive practice in the north for small shopkeepers to sell castor oil and several simple things, whereas in the south the custom was not nearly so prevalent. Naturally, the chemists who sold wholesale to these little shops would fight this point in the Clause, which he considered the one weak spot in the Bill.

Mr. Croydon said they suffered a great deal through small shops selling drugs. Chemists used to sell a great many pennyworths of castor oil, and they did not do so now. With doctors doing their own dispensing, and small shops selling drugs there was little left for the chemists to do.

Mr. Hankinson: Does the word medicines include drugs?

Mr. Oldham: The whole of the materia medica.

Mr. Hankinson said it appeared to him unfair that the public could not get an ounce of Epsom salts from wherever they liked. It was often inconvenient to go to a chemist's for such articles, and there was no danger. Such a clause made the chemist pose as a man who wanted to grab everything.

The Chairman: I think it is put in to prevent medicines being sold by unqualified persons. The difficulty would be obviated by leaving out the word "sold."

Mr. Croydon moved, "That the Clause stand as it is."

Mr. Oldham said he would second the resolution to test the meeting.

Ultimately the Chairman's suggestion was acted upon, the resolution being adopted with the deletion of the word "sold." The word "sell" was consequently omitted from Clause 3, and the words "in open Court" included after the words "and the same may be sued for." The remaining clauses were adopted without alteration, with the exception of Clause 8, which it was hoped would be made to include Ireland.

By this means, Mr. Poole suggested, the support of the Irish members might be won.

New Members.

Mr. Chell (Leek) and Mr. Fernley (Burslem) were elected members of the Association.

The President announced that on March 16 the annual dinner and meeting would take place, and he hoped the Secretary would do his best to induce Mr. Walter Hills, President of the Pharmaceutical Society, to honour them with a visit. He also asked every member of the Association to attend, in order to have a large and successful meeting.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

A meeting of this Association was held in the Pharmaceutical Society's house, 36, York Place, Edinburgh, on Tuesday evening, February 21, Mr. David McLaren in the chair. The minutes of last meeting were read and approved. Apologies for absence were intimated from Messrs. Spence and Nelson. Mr. Jas. McBain, Edinburgh, was elected a member.

The Secretary read the following letter from the Inland Revenue anent extract of witch hazel:—

Inland Revenue,
Somerset House, London.
January 5, 1898.

C. F. Henry, Esq., Secretary, Edinburgh District Chemists' Trade Association.

Sir,—I am directed by the Board of Inland Revenue to refer to the correspondence which passed, in February, 1887, between this department and yourselves, and which resulted in your extract of witch hazel being pronounced "not liable" to stamp duty.

The Board have recently had under consideration the whole question of the liability to Medicine Stamp Duty of preparations of witch hazel prepared with and containing spirit in the finished article, and having regard to the mode of preparation, they have decided that such articles must be held to be tinctures, which are specially charged with duty by the Act, 52, George III., cap. 150, as expounded by judicial decision in the case of Smith *v.* Mason (L.R., 1894, 2 Q.B., p. 353). The Board can no longer regard your extract of witch hazel as coming within the exemption from Medicine Stamp Duty in favour of pure drugs vended entire, and they must therefore request that you will duly stamp all bottles sold in future.

As it is probable that a considerable number of unstamped bottles are in stock throughout the country, the Board would not object to allow three months for their disposal or withdrawal, but in the event of information being laid in respect of the sale of such bottles unstamped, it will rest with the seller to prove that he had the bottle or bottles in stock before the date of this letter.

I am, sir, your obedient servant,
(Signed) J. N. Crafer,
Secretary.

In reply to Mr. Wylie the Secretary said the wording on the label recommending it for burns, scalds, etc., was what rendered

it liable. If these recommendatory words were deleted the label would not be liable any more than a label on tincture of rhubarb.

Mr. Boa reported a deficit of £8 on the annual ball account. But for the generous support of wholesale houses the deficit would have been much greater.

The Chairman expressed the general feeling of the meeting to the effect that the Association should allow this social function to drop and allow any who might be interested to take it up.

Mr. Macpherson then read a paper on

The New Poison Regulations. How Shall We Carry Them Out ?

On the 1st of January, thirty years ago, the Pharmacy Act, 1868, became law. In its 1st and 15th Sections it is indicated that there shall be regulations enacted for the keeping. dispensing, and selling of poisons. In the 17th Section certain regulations are set forth which have to be observed in the dispensing and selling of these articles. On January 11 this year regulations dealing with the keeping and dispensing of poisons were adopted by the Pharmaceutical Society, and on January 31 these were confirmed by the Privy Council, and thus attained the force of law. A previous attempt to impose similar regulations was made in 1871, but at the suggestion of it a wave of indignation swept over the land ; fearsome imaginings were conjured up and lurid pictures were drawn of the disastrous condition to which chemists would be reduced should these become law, with the result that the opposition raised was so strong that at the general meeting of the Society the motion was lost. The proposed regulations were watered down into recommendations and conveniently shelved. Since then a certain august body has maintained an attitude of severely offended dignity, and pharmacy has had a chequered career of sunshine and shadow—mostly shadow. Like the Israelites in the wilderness, pharmacists have wandered for years in desert places. Is the dawn of a brighter day about to break, and are they soon to enter into their inheritance? Let us hope so. Now, however, the official mind which dearly loves red-tape, stereotyped forms, and machine-like movements has been appeased, the regulations have become law, no earthquake has taken place, the world jogs along as before, and there seems no likelihood of the gloomy forebodings of the prophets of 1871 coming to pass. While loyally accepting the official regulations it has to be remembered that the best safeguard for the security of the public is the confiding of the dealings of these articles to the care of a thoroughly educated and specially trained class of men. Mechanical arrangements, if allowed to assume a predominant position, and be looked on as a be-all-and-end-all are apt to prove a delusion and a snare to produce the very evils which they are intended to avert. But if subordinated to the control of trained intelligence they may prove valuable aids in attaining the object aimed at and be additional safeguards. It would be an easy matter to find fault with the regulations, pick holes in them, or even cast ridicule upon them, but that is not our object. It is rather to find out how we can best carry them out, as it is our duty and interest to do, not only according to the letter but also according to the spirit in which they are conceived. Questions might be raised as to whom they are applicable to, but we may avoid side issues such as these, leaving them for the consideration of those who have to administer the law, and discuss only such points as directly concern ourselves. Before considering the regulations in detail, let us try to define What is a poison? It may be regarded as certain that being enacted pursuant to the provisions of the Pharmacy Act, 1868, the regulations are only legally applicable to scheduled poisons, and it will be well to restrict them to these alone, and in the present connection we ought to devote our attention to these only, leaving it to individual pharmacists to consider what arrangements they shall adopt for dealing with other poisons and dangerous articles. As to what preparations of scheduled poisons the regulations should be extended, though we might well adapt the legal maxim *de minimis non curat lex*, it will be better to err on the side of over-carefulness rather than the reverse, even though they should entail the protecting of the chloroform water bottle or the gall and opium ointment pot with all the formalities duly set forth. In regard to patent medicines containing poisons, there can be no hardship in having to keep them in a special place, but rather an advantage, as it ought to ensure the due labelling of them with an address and poison label, and prevent the possibility of inadvertently having to face a prosecution.

Coming now to consider the regulations in detail we find that according to No. 1, the container has to be marked with the name of the article and a distinctive mark indicating that it contains poison. It is not said what this mark is to be, therefore it may be presumed that it is left to each one to adopt any mark which may strike his fancy, which he thinks will serve to convey to the minds of those engaged in his establishment an indication of poison. To some extent the word poison itself has been used for this purpose, but it is questionable if it is judicious to employ it too freely, as its indiscriminate use is apt to minimise its significance and to lessen its deterrent effect. It would, therefore, be well if some special distinguishing mark could be generally fixed upon so as to have uniformity throughout the country, and prevent different marks being used in different places with the possibility of resulting confusion. It is here suggested that a suitable sign would be a monogram composed of the letters S and P crossed. This would serve to indicate that the article was a scheduled poison, and the addition of a point above or below the monogram would show that it belonged to Part I., while two points in the same situation would show that it belonged to Part II., and thus point out whether it required to be registered or not. Any other mark would do as well, provided it fulfilled the necessary conditions ; thus a V, the first letter of the word "Venenum," might be used, or else some variety of a cross or other figure, but the first suggested sign seems the most appropriate, as it consists of the initials of the words "Scheduled Poison," and, unlike the others, has not been appropriated as a trade mark nor associated with any other idea. It could be either printed as a label, painted on, or inscribed in ink, according to the container to which it had to be attached. It readily lends itself to the formation of a stencil plate, which could be made of any required size and would be a means of quickly and easily branding any box, vessel, etc. Those of an artistic turn of mind could have it made more symbolical by having the S drawn as a serpent, and the P as a flexible cane—one of the best possible weapons with which to kill a snake. Printed in red on a white shield it is very striking, and could be placed on the shoulder of a bottle or beneath the label, without being any disfigurement and without producing any untoward effect, such as might result occasionally from the prominent displaying of the word "poison" in a like situation. According to regulation No. 2 each poison must be kept on one or other of three systems. A, B, or C. This does not mean that only one of these systems shall be used in each establishment, but that all three are permissible in the same place, only each poison must be kept according to one or other of these. Thus tinct. opii might be kept for sale in the front shop in a specially distinguished bottle while the bulk of the stock of it might be kept in jars or Winchesters in a room or other place set apart for the storage of dangerous articles. Again, strychnine could be kept according to system C, while its solution might be kept according to system A or B, or *vice versâ*, and so on.

A. The phraseology of this clause appears somewhat ambiguous, and it may require a law case to decide whether the conditions have been fulfilled when a bottle or vessel is tied over, capped or locked in any way, or whether it is necessary that anyone of these methods of securing must be done in a manner different from that in which bottles or vessels containing ordinary articles are tied over, capped, or locked in the same warehouse, shop, or dispensary, or whether the latter half of the clause applies only to "otherwise secured." The better way would be for us at present to read it in its strictest sense, and if we can devise a means of fastening different from any other in use for ordinary substances or which could be specially set apart for this purpose, so much the better. It will, however, require to be in view that whatever method be adopted, it will not be one which will unduly interfere with the ease with which the bottle or vessel may be used by unnecessarily prolonging the time required to open or close it. This has to be specially borne in mind in connection with dispensing and retail selling. One method by which it could be done would be by means of a band formed of suitable material to encircle the container, and having affixed to the front of it a hook or stud, and a strap having a loop or eyelet at the end, attached to the band at a point directly opposite the hook. This strap would pass over the top of the container and be fastened to the hook by means of the eyelet. A fastener of this kind could be as easily adapted to fit a cask of arsenic as it would be to fit a shop-round, a pot, or even a drachm phial, and with slight modification could even be applied to a drawer.

B. System B requires bottles or vessels containing poison to be distinguishable by touch from those used for ordinary articles.

This can be complied with by using the various special bottles, etc., manufactured for this purpose and supplied by sundriesmen, or ordinary vessels can be adapted by affixing to them strips of sandpaper, cardboard, or corrugated paper, or by painting thick raised lines on them by means of a brush and stencil plate. When system A or B is employed it would seem advisable to distribute these specially distinguished vessels, among those containing ordinary articles, thus lessening the risk of inadvertently taking a vessel containing a less virulent poison for one containing a more virulent one. When system C is used it would be better to avoid any kind of uniformity in the various classes of containers; diversity of form will in this case be of considerable use in preventing errors. Thus, if a certain substance be associated in the mind with a particular-shaped vessel, there will be less likelihood of making a mistake by lifting the wrong vessel in a moment of temporary mental abstraction, and should such occur the memory will recall the fact and prevent an error being made, or enable it to be rectified before it is too late. Thus, while it might be possible to make a mistake between fluid extract of nux vomica and tincture of nux vomica, or chloroform and spirit of chloroform, if kept in similar bottles side by side, there would be less chance of such happening if they were kept in different-shaped bottles. Regulation 3 alone deals with dispensing and takes cognisance only of poisonous liniments, embrocations, and lotions, which must be sent out in bottles distinguishable by touch from ordinary medicine bottles. It would be well to come to some kind of agreement as to what kind of bottle should be generally used for this purpose, and it would seem as if the better plan would be to adhere to the fluted bottles, hexagonal or flat, which have been used generally for some years now for this purpose. The public are to some extent familiar with them and their significance, and it seems a pity to distract the public mind by adopting various bottles of fantastic shapes, some of which might have a particular significance in one place and quite a different one in another, with the possible result of reducing the protective effect which it is the aim of the regulation to secure. In cases where the poverty or the parsimony of the purchaser or other circumstances prevents him from paying for a proper bottle, the bottle can be rendered distinctive by affixing to it strips of sandpaper or corrugated paper, or by other means.

The regulation also requires that there shall be attached to each such bottle, in addition to the name of the article, and to any particular instructions for its use, a label giving notice that the contents of the bottle are not to be taken internally. Here the word "and" would seem to have, in addition to its ordinary meaning, one also equivalent to "or." It would have been better if it had been stated so as to make this quite plain, as it is often the case that prescription liniments, etc., have no particular name, and, consequently, none can be affixed to the bottle. Mr. Chairman, I have tried to place before you as clearly as I can my views on this question, and have endeavoured to avoid being either didactic or dogmatic. If, however, I have unwittingly transgressed in either of these ways, I hasten to assure you that I have no authority to lay down the law. I am only a humble seeker after knowledge, who, unfortunately, suggested that this subject might be a suitable one for this Association to discuss, and for my rashness I was straightway condemned to do penance here to-night.

Mr. C. F. Henry explained the large and interesting series of exhibits illustrating various bottles, stoppers, caps, bands, guards, and other poison regulation appliances. It would be a great advantage, he said, if the ribbed bottles could be made smooth inside. In describing the poison cupboards of Messrs. Evans, he said an additional security would be a metal framework carrying an electric current, and a switch for each bottle standing on the framework. This switch would require to be turned off before lifting the bottle, otherwise the person lifting the bottle would experience an electric shock. This would prevent the lifting of the wrong bottle. Also he moved a very cordial vote of thanks to the firms and individuals who had sent exhibits, and this was heartily agreed to.

Mr. McGlashan said he often found that ordinary fluted poison bottle brought back to have a simple thing like ipecacuanha wine put into it, but he never found a bottle brought back in this way if it had embossed on the glass, "Poison" or "Not to be taken."

Mr. McDougall agreed with Mr. McGlashan they had to educate the public and make them aware of the responsibility that rested upon them as sellers of poison.

Mr. Hill said Mr. Macpherson's lucid exposition of the poison regulations was most valuable. The distinctive feature of his statement was that he had in view how best they could comply with these regulations by making use of the present arrangements and fittings. This could be done without much trouble because, although it was only now that these restrictions had attained the force of law, they had for years been matters of almost universal practice, and had been very completely observed in all well-regulated pharmacies. It only required that the practice should be brought to a definite point, and that had been excellently well done by Mr. Macpherson. With regard to the band for stoppers, etc., suggested by him, its greatest recommendation was its universal adapability to boxes, casks, drawers, bags, or any other kind of vessel. A uniform means of tying over or securing was a distinct advantage. The mention of a device to prevent error even in a moment of temporary mental abstraction rather emphasised the grave danger of false security which underlay all these merely mechanical safeguards. The mere thought of a device which prevented error even by mental abstraction was fitted to engender a habit of carelessness, and probably the public safety would be better secured by the trained pharmacist having the necessity of having all his wits about him at every step in the procedure of handling deadly poisons constantly pressed upon his mind. He agreed strongly with the author that it would greatly tend to increased security if a uniform style of poison bottle could be used all over the country, while he agreed with those who deprecated the imposition of any such mechanical restrictions on the members of a trained and educated craft. He at the same time thoroughly agreed that as loyal subjects they should frankly accept these regulations and do the utmost in their power to carry them out in the utmost perfection.

Mr. Boa said he quite agreed with the view that they should not adopt all kinds of fantastic shapes for dispensing poison bottles. The public had become pretty well acquainted with the hexagonal fluted bottle, and he thought it was the best. With regard to the corks with tin tops and sharp edges, he was afraid the public would not appreciate these, as they were very apt to cut the fingers. As to the colour of the bottles, he thought they should adhere to blue.

Mr. McLaren said he had gone carefully over his pharmacy since these regulations became law, and he found they would have no difficulty at all in complying with them. He preferred green to blue bottles; the latter were sometimes so dense that it was nearly impossible to see when they were full. To make the ribbed bottles smooth inside would certainly be an advantage, but it would be much more costly. He felt sure they would all loyally support Mr. Mcpherson's proposition that they should comply with the letter and spirit of the new law, and they would let it be known that Scottish pharmacists intended to have everything thoroughly in order so far as these regulations were concerned. He moved a vote of thanks to Mr. Macpherson, which was cordially awarded.

Mr. Macpherson briefly replied, pointing out that a special cork or the bell attached to a bottle was not a compliance with the regulation which stated that the bottle must be distinguishable by touch.

The Secretary exhibited a large number of poison bottles, special corks, and other appliances for storage, dispensing, and sale of poisons, which had been kindly lent by manufacturers and others. These included two poison cupboards of new design, sent by Messrs. Evans and Sons, Liverpool. The one had the shelves divided into a separate compartment for each bottle. The other was more elaborate, and had each compartment closed by a door. By opening a lock on the small door to the right of the shelf it could be opened, and then the other doors could be slid along in such a way that only one compartment was open at one time, and only one bottle could be removed. Messrs. Lynch and Co., London, sent dispensing bottles, round-shaped, in blue glass, and with raised points in the glass all over them. Gilbertson and Co., London, sent specimens of the slipper-shaped poison bottles. Johnsen and Jorgensen, London, sent shop-rounds and dispensing poison bottles with horizontal ribs in the glass. Messrs. Townsend, Exeter, sent an ordinary dispensing bottle made distinctive to the touch by cardboard bands pasted round the bottle above and below the label. Hearns, Limited, London, sent specimens of fiddle or spindle shaped dispensing poison bottles. The York Glass Co. sent a large selection of their well-known make of distinctive poison bottles. Mr. Hodges, Chester, sent slipper-shaped and conical octagon poison bottles. Mr. Alexander Reid, Sheffield, sent an ordinary dispensing bottle with a small bell attached to the neck by a metal clamp. Messrs.

Maw, Son and Thompson, London, sent actinic fluted shop-rounds, recess labelled, and a sketch of a patent screw guard for fixing stoppers. Messrs. Woolley, Sons & Co., Manchester, sent specimens of "Boval" safety stopper band or poison guard. The Patent Stopper, Box, and Stamp Co., London, sent specimens of ordinary corks capped with a metal star in such a way that the sharp projections immediately became sensible to the touch in attempting to remove the cork. W. H. Hargreaves sent a sketch of a spring clip attached like an ordinary corkscrew to a common cork, which could only be withdrawn by releasing the spring. Another feature of the bottle was a label bearing the word "Poison" in luminous paint. Messrs. Baildon and Son sent specimens of rubber caps for poison bottles.—The meeting then closed.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held on Thursday, February 16, Mr. W. L. Currie, President, in the chair, to consider the

Suggestions for a Pharmacy Bill.

The President, in opening the proceedings, said that, as Mr. Hills observed when introducing the draft Bill, such a Bill must be a Government measure, and must be supported by every chemist and druggist throughout Great Britain. He did not think that they would find many who would disagree with the principle that the restrictive provisions of the Pharmacy Act should be more thoroughly enforced than they have. Clause 2 was to the effect that medicine should be sold, dispensed, or compounded only by qualified men. The word "medicines" was an undefinable word. It was difficult to say what might be included in the category of medicines, and perhaps there might be more stumbling. It might be desirable that medicines should be dispensed only by registered men, but he did not think such a limitation should be extended to castor oil, senna leaves, and so on. As regards dispensing medical men's prescription, however, he thought they might fairly and justly claim that as the special business of legally qualified chemists. Such a thing existed in Ireland and in Continental countries. Speaking of drug companies, Mr. Currie said that they should be compelled to register their qualified manager, to exhibit in a conspicuous place a notice to satisfy the public that their business was carried on by a duly qualified and registered man, and to put the name of the registered man upon the labels.

In the discussion which followed, Mr. James Moir, Crosshill, said that he did not think that there was any hope of any Parliament passing a Bill, one of the clauses of which was to give the trade the exclusive sale of medicines. They must confine themselves to poisons, which should only be dispensed by qualified men.

The suggestions for a draft Pharmacy Bill drawn up by the Pharmaceutical Council were gone over *seriatim*, and a number of alterations and deletions made in accordance with resolutions passed.

DERBY AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held at Smith's Restaurant, Victoria Street, Derby, on Thursday, February 16, Mr. Cope, President, taking the chair.—The principal subject for discussion was the

Suggestions for a Draft Pharmacy Bill

as formulated by the Pharmaceutical Council and submitted to the Lord Chancellor.

The Chairman read through the suggestion and also the remarks thereon in the *Pharmaceutical Journal* of the previous week.

The several clauses were then considered *seriatim*, Nos. 2 and 5 only appearing to warrant much discussion, the others being agreed to. With respect to the second, it was thought that the Clause as it stood would never be passed by the Houses of Parliament, though being an ideal one for chemists.

Mr. Bowler pointed out that chemists were the only body who, having to pass stringent examinations, had not a monopoly; he thought it was only their due.

Mr. Dawson thought the best way would be to draw up a schedule of strong medicinal substances to include and take the place of the Poisons Schedule.

The meeting, however, decided to support Clause 2 as it stood, in the belief that the more we ask the more we are likely to get, and that it cannot in any way endanger the passing of the Bill.

No. 5—the "Widows' Clause"—was responsible for a good deal of argument, the consensus of opinion being that the time—one year—was altogether too short for the proper winding up of a good many estates; the widow would probably suffer a great deal through having to dispose of the business under forced conditions. Mr. Pembleton thought it would be very hard if a widow had a son who would be able to qualify only in, say, two or three years' time, for her to have to dispose of the business and with it the prospect of her son ever having the benefit of it. He thought that power should be given the Council to determine the length of time in which the business must be wound up, according to the circumstances of the case.

The following resolution, proposed by Mr. Pembleton, and seconded by Mr. Bowler, was carried unanimously:—

> This meeting is of opinion that the period of one year in which to dispose of a deceased chemist's business is too short, and suggests that it be extended to three years, or that the Council reserve to itself the power to fix the period according to the circumstances of the case.

The dispensing of medicines and distribution of poisons in dispensaries next formed food for discussion, after which this resolution was passed unanimously:—

> That for the safety of the public it is, in the opinion of this meeting, desirable that all dispensaries, like ordinary pharmacies, should conform to the requirements of the Pharmacy Acts as regards the qualification of dispensers and the storage and distribution of poisons, and it is further resolved that this expression of opinion should be forwarded to the Council of the Pharmaceutical Society.

LEEDS CHEMISTS' ASSOCIATION.

A meeting of the members of this Society was held in the Leede Institute on Friday, February 17, the President, Mr. E. Yewdall, in the chair, when the draft Pharmacy Act Amendment Bill was brought before the members present, and after much discussion, in which Messrs. R. Reynolds, F.I.C., F. W. Branson, F.I.C., Geo. Ward, F.I.C., W. D. Pollett, J. H. Beacock, G. Worfolk (Ilkley) W. W. Sleight, W. Johnson, and F. Fearnley took part, Mr. Reynolds moved—

> That this meeting thanks the President for calling the attention of the members to the draft Pharmacy Act Amendment Bill, and has carefully considered its general bearing. This meeting is gratified at the prospect of legislation calculated to remove some of the abuses at present existing in the State regulation of pharmacy. The Association will watch with interest the further developments of the subject.

The resolution was seconded by Mr. Geo. Ward, supported by Mr. Sleight, and carried unanimously.

The President then pointed out that the regulations for the storage of poisons being now compulsory, should have the attention of the members.

Specimens of the round fluted stoppered bottles, introduced by the York Glass Company for the storage of poisons, and Silverlock's poison labels were shown.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

A general meeting of the members of this Association was held on Tuesday night, at the County Restaurant, Bradford, Mr. A. H. Waddington presiding. About fifty members were present, and in addition the following representatives of several other towns in Yorkshire:—A. Foster, W. Stead, R. Gledhill, E. Walker, J. Day (Dewsbury); S. Halliday, J. Walker (Cleckheaton); J. Swire, S. Dixon (Halifax); C. Crook (Mirfield); J. W. Cussons (Ossett); G. W. Worfolk (Ilkley); A. W. Kershaw (Keighley); W. Green (Skipton). A paper on

The Improvement of Local Organisation

was read by Mr. G. T. W. Newsholme, Vice-President of the Pharmaceutical Society, and is printed in full at page 164, *et seq.*

In the discussion which followed,

The Chairman said that the paper which had been read contained much new and important matter. He hoped that Bradford would follow the example of Sheffield. Mr. Squire, the local secretary of the Pharmaceutical Society there, had told him that forty-nine out of fifty members of the Chemists' Association were

members of the Pharmaceutical Society. In Bradford out of about fifty members of the Chemists' Association only twenty-three or twenty-four were members of the Pharmaceutical Society. There were one or two things which had not been touched upon by Mr. Newsholme which might claim their attention. The most important was the dispensing of medicines by doctors. There had recently been a glaring case of abuse in this connection at a place in Lancashire. The facts of that case were so well known that he need not refer to them. He could point to several instances in Bradford where a change in this direction was necessary. A medical man in Bradford, who took as high a position as anyone, was employing an absolutely unqualified man to dispense—a man who, until he went into that dispensary, had not handled drugs. If the public only knew that the dispensing in doctors' surgeries was sometimes left to grooms and bookkeepers, there would be such an outcry in the land that the practice would not be allowed. In connection with the Pharmacy Acts Amendment Bill he should have liked to have seen an attempt at combination between the Medical Council and the Council of the Pharmaceutical Society, in order that there might be some re-arrangement on the Continental system of dispensing and prescribing. There were not many chemists who would not give up prescribing if they could be assured of a decent living from the dispensing of doctors' prescriptions.

Mr. Worfolk, Vice-President of the Leeds Chemists' Association, said that his Association had come to the conclusion that the Pharmacy Acts Amendment Bill was practically satisfactory, except as to the "Widows' Clause." Gentlemen at Leeds could not see that there was any analogy between a *bonâ-fide* chemist and the drug stores. There might be a case of a chemist in business who left a son aged 19 or 20, and, before that lad could qualify, the business was to be sold at a sacrifice. Either the term of a year during which the business might be continued should be allowed to remain or the period should be lengthened. It was thought that the Minor examination might be divided into two parts, one taken at nineteen years of age and the other after twenty-one years of age, and if the young man had passed the first part of the examination, the business might be allowed to remain open until the young man had fully qualified. If the dispensing of medicines were restricted to chemists, the chemist should be a qualified man. A Bill framed generally on the lines suggested by the Pharmaceutical Society would be a great benefit to the profession.

Mr. Foster, President of the Dewsbury Association, said that some of the reforms proposed would make it necessary for the chemist to be more closely in attendance at his shop, but he was looking forward to the time when every chemist would have at least one duly qualified assistant, and this would follow if the doctors put out their dispensing and did not in some cases leave it to the groom or the coachman.

Mr. Stead, Secretary to the Dewsbury Association, said that when that Association was started, only six of its twenty-one members were in any way connected with the Pharmaceutical Society, while to-day sixteen were members of the Pharmaceutical Society. He regarded the Poisonous Substances Bill as an iniquitous measure. As to the Pharmacy Act Amendment Bill they must fight Clause 1 tooth and nail, and not relinquish a bit of it. With regard to Clause 2, he thought they would have to accept a compromise, and that that compromise would have to take the form of an exempting schedule, which would allow a number of simple drugs to be sold by others than qualified chemists. But as to compounding and dispensing, they must get that into their hands without fail. As to the "Widows' Clause," he was quite sure that the Pharmacy Act of 1868 never intended that a chemist's business after his death should be conducted for an indefinite period by his administrators. At the same time he was bound to admit that there was considerable reason in the opposition to the limit of twelve months.

Mr. Chaplin, local secretary of the Wakefield branch of the Pharmaceutical Society, said that the photographic societies of Yorkshire were organising themselves somewhat upon the lines suggested by Mr. Newsholme.

Mr. Squire, President of the Sheffield Chemists' Association, said that Mr. Newsholme's scheme of organisation was an important proposal. As local secretary of the Pharmaceutical Society in Sheffield he had found a great difficulty in keeping in touch with the chemists amongst a population of 350,000. The idea of having a secretary or an assistant secretary in each parliamentary constituency was an excellent one so far as a large city like Sheffield was concerned.

Mr. Pickard, of Bradford, said it was only reasonable that it should be possible for others than chemists to sell certain drugs; and as to the "Widows' Clause," he thought the term of a year might be extended. He argued that chemists should be exempted from jury service.

Mr. Gibson, of Halifax, and Alderman Dunn, of Shipley, having spoken,

Mr. G. Rimmington, of Bradford, proposed a resolution to the effect that the meeting thanked Mr. Newsholme for his address, and undertook to use every possible effort to secure the passing through Parliament of a Bill on the lines suggested by the Pharmaceutical Society. Mr. Rimmington said he thought the presence of Mr. Newsholme that night was a sign that the Pharmaceutical Society was not now composed merely of West-end chemists, but was endeavouring to represent the chemists both of the north and south of England. He was strongly in favour of a thorough ventilation of the question of employing unqualified men to dispense medicine, either in the chemist's shop or in the surgery. He was sure that many of the young medical men at the present time were most desirous of giving up dispensing, and he (the speaker) thought that if chemists would agitate for objects of this kind, they would certainly do good.

Mr. McKay, of Bradford, seconded the resolution, which was supported by Mr. Jackson and Mr. R. W. Silson, of Bradford.

The Chairman said, in reference to the "Widows' Clause," that they had had a severe object lesson in Bradford. At the present time the executors of a deceased chemist were carrying on four shops, and had been doing so for a considerable number of years, with only one qualified man in the four shops.

The resolution was carried unanimously.

Mr. Newsholme, in responding, said he had been asked by Mr. Walter Hills, the President of the Pharmaceutical Society, to extend to that meeting Mr. Hills' hearty good wishes. As to the "Widows' Clause," he did not think the practical difficulty was as great as had been made out. If a business was worth keeping on, the widow could, as a rule, sell the business if she could not afford to put a chemist in to manage it, and sell it on terms which would provide for the subsequent engagement or the inclusion of her son.—The meeting soon afterwards ended.

CHEMICAL SOCIETY.

An ordinary meeting was held on Thursday, February 16, at 8 o'clock, the President, Professor Dewar, LL.D., F.R.S., in the chair. After the reading and confirmation of the minutes, and the reading of the certificates of candidates for election an opportunity was given for new Fellows to sign the register. The formal admission of a new Fellow is not without some ceremony. Having signed the register, he approaches the Presidential chair, and grips the outstretched hand of the President, who repeats the general formula: "Mr. Blank, by the authority, and in the name of, the Chemical Society, I make you a Fellow thereof."

Change of Officers.

The President then announced that certain changes were to take place in the officers of the Society. In the first instance, Mr. Groves, who for twenty years had edited the *Journal of the Chemical Society*, was about to resign his post. Speaking in eulogistic terms of Mr. Groves' services in that connection, during so many years, the President remarked that as editor, Mr. Groves, had been instrumental in creating one of the first chemical journals of the world. It was proposed that the Society's appreciation of Mr. Groves' services be endorsed on vellum and presented to him. His place would be taken by one of the Secretaries, Dr. Wynne, F.R.S., while the latter's post would be filled by Dr. Scott. With regard to the other changes proposed, two retiring Presidents, Professor Judd and Dr. Tilden, would make way for Mr. Groves and Professor Purdie; the new Treasurer would be Dr. Tilden, *vice* Professor Meldola; Dr. Crossley would succeed Professor Herbert McLeod as Auditor; while the new President would be Dr. Thorpe. This announcement paved the way for the business of the evening, which included the reading and discussion of four papers, five being taken as read. The titles of the latter are as follows: "A Note on Certain Isomeric Tertiary Benzyl-thio-ureas," by Augustus Edward Dixon, M.D.; "On Lossner's Benzoyl-ethyl-oxy-sulphocarbamic Acid and the Formation of Pseudo-ureas," by Dr. Dixon; "Is Camphene Unsaturated?" by J. E. Marsh; "The Formation of α-Pyrone Compounds and their Transformation into Pyridene Derivatives," by Siegfreid

Ruhemann; and "Ethylic Sodio-Malonate; A Correction," by Dr. Crossley.

The first paper, by W. N. Hartley, F.R.S., treated of

The Absorption Spectra of, and the Constitution Attributed to Cyanuric Acid.

The author had examined the spectra of hydrocyanic acid, pyridine, picoline, and quinoline, and then that of cyanuric acid, in order to ascertain in what way the hydroxyl group might affect the spectrum. In the case of the last-mentioned, no distinct absorption bands were noticed, but there was an appreciable weakening of the latter part of the cadmium spectrum.

The speculations brought forward as to the probable constitution of cyanuric acid led Dr. Gladstone, in the discussion that followed, to remark on the high value of the study of spectrum analysis in throwing light on the nature and constitution of chemical bodies, especially where purely chemical means failed.

The next paper, by Professor Hartley and James J. Dobbin, D.Sc., M.A., dealt with

The Study of the Absorption Spectra of Isatin, Carbostyril, and their Alkyl Derivatives in Relation to Tautomerism.

In this inquiry it was found, contrary to expectations, that, working with isatin, carbostyril and their methyl derivatives the same absorption curve was not obtained in the case of those compounds that were isomeric.

Dr. Dobbie having supplemented Professor Hartley's remarks a long discussion ensued.

Prof. Dunstan somewhat playfully suggested that as the apparatus for such investigations was cumbersome and elaborate, and as the authors had it already fitted up and in working order, it would not be much trouble to them to investigate, for example, the whole series of oximes and other compounds, with which he could supply them.

The President thought that the purity of the compounds used was of the highest importance. He would recommend the authors to say to Professor Dunstan, in the words of Stas:—"Tell me what you have done with the substance, and I will tell you whether it is worth my while going on with it." He thought there was room for improvement in the methods at present in vogue, which, to say the least of it, do not appear persuasive to the would-be investigator. There was some difficulty, once having got the results, to interpret them. He would suggest the spectrum of iron as better than that of cadmium.

The authors having replied, A. Wynter Blyth, F.I.C., followed with a paper on

The Ferrous Chloride Method of Estimating Nitrates and Nitrites.

The details of the method were given and a special apparatus adapted to the purpose described. The solution of the nitrate or nitrite is placed in a vacuous flask and followed by a 30 per cent. solution of ferric chloride. The amount of nitric oxide gas is then determined. Nitrites come off at once, but an interval of from three to ten minutes is necessary for the reaction to be complete in the case of nitrates. The method is a good qualitative test for nitrites, and may be used in water analysis. The same author then read the last communication, on

The Estimation of Boric Acid, Mainly by Physical Processes.

One method depends on the fact that if boric acid be distilled with methylated alcohol, the first two-fifths of the distillate contains 65 to 70 per cent. of the total amount of boric acid present. With water the reverse takes place, there being no great loss of boric acid until a fair proportion of liquid has been distilled. In the case of milk it is not necessary to distil if much boric acid be present; merely add half of the bulk of methylated alcohol, ignite and observe the flame coloration. Another method depends on the alteration in specific rotation of a solution of tartaric acid in methyl-alcohol on the addition of definite quantities of boric acid. Yet another method consists in determining the loss of CO_2 on boiling boric acid and sodium carbonate down to a small bulk, 4 molecules of the former and 1 of the latter yielding 1 molecule of CO_2.

The President having read out the result of the ballot, declared the meeting adjourned.

The name of Mr. T. A. Henry, a former Bell. scholar of the Pharmaceutical Society, was among the list of Fellows newly elected.

ROYAL INSTITUTION.

On Saturday, February 11, The Right Hon. Lord Rayleigh M.A., D.C.L., LL.D., F.R.S., Professor of Natural Philosophy Royal Institution, gave the first of a course of lectures on

The Mechanical Properties of Bodies.

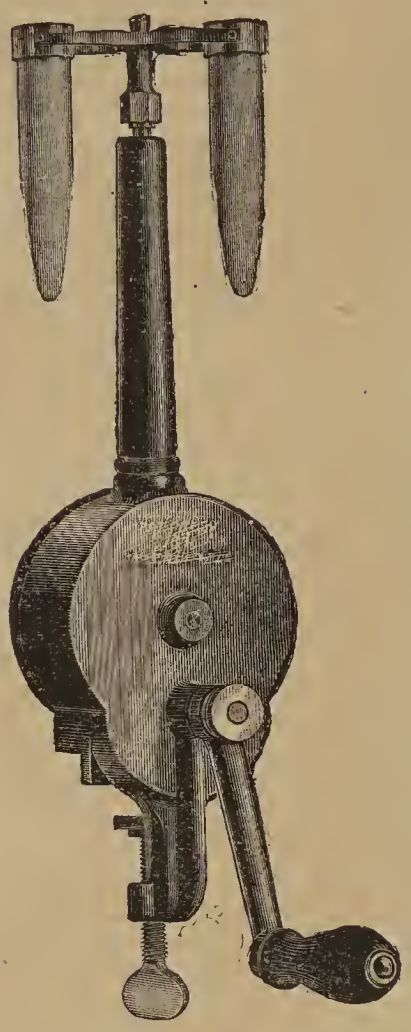
In his opening remarks the lecturer said that he proposed to divide the lectures roughly into two parts, dealing first with the mechanical properties of bodies in relation to their mass or volume, and, in the second part of the course, with the capillary phenomena which are associated with the surface of bodies. Speaking of weight, he pointed out the different weights that the same body would possess on different planets, *e.g.*, weighing less on the moon and more on Jupiter or the sun than on this earth, while a body at the centre of the earth would have no weight at all. This led the way to a lucid explanation of the difference between the weight of a body and its mass. The principle of virtual velocities, better termed the principle of work, was next considered, and experimental illustrations were shown of the way in which great weights may be moved by applying a small force at a greater distance, *e.g.*, the Bramah press and the Spanish windlass were shown in operation. The latter contrivance has been largely used on board ship; a great weight to be lifted is attached to the free ends of a rope which is slung taut over a firmly fixed horizontal bar, placed about eight feet vertically above. A wooden pole is placed between the two lengths of rope and by turning it round and round in a horizontal plane the weight is gradually raised. Here, however, the distance traversed by the pole is large compared with the distance through which the weight is lifted. The density of liquids was next considered, and the various methods of taking specific gravity were explained. Speaking of the density of gases, a subject which has engaged his attention for many years, Lord Rayleigh dwelt on the extreme care that is necessary in making determinations; thus, in weighing hydrogen gas, the variation of atmospheric conditions on one day and another may make more difference in the weighing than the actual weight of hydrogen gas in question. This led to a consideration of the balance, the essential features of a true and accurate instrument, and the various methods of eliminating error in delicate weighing. There must be a nicety of suspension, and the arms must be equal in length, or a substance in one pan will not be of the same weight as the weights which balance it in the other pan. If the arms are unequal in length, the weights and substance must be reversed, and an average taken. The barometer next received attention, and then Boyle's law was explained. The familiar experiment was performed of doubling the pressure on a given volume of gas at atmospheric pressure in a U-tube, and noting that it is halved in volume, according to Boyle's law. The lecture concluded with a discussion of the law of reciprocity. A wooden plank some ten feet wide and two feet broad was poised horizontally at two points. It was then shown that if any two points, A and B, be taken, and a weight be successively placed at these points, then the amount of yielding is the same at A when the weight is placed at B, as is the amount of yielding observed at B when the weight is located at A. The thickness of the board has nothing to do with the effect, beyond making it less evident with increasing thickness. It may generally be stated that small effects are proportional to the causes to which they are due, whatever the complication of the system. This law, Lord Rayleigh remarked, was an instance of the value of mechanics, the study of which, besides dealing with the explanation of well-known phenomena, often led to the enunciation of some law of very general adaptation and far-reaching importance.

Atropine in Fungus Poisoning.—Le Dante finds that hypodermic injection of atropine is a valuable antidote in cases of poisoning with the fly agaric (*Agaricus muscarius*), to which so many of the cases of fungus poisoning are due. Not only is atropine a direct antidote, but it has, as well, an immunising action. In cases of multiple poisoning, where several persons have partaken of the "mushrooms," but poisonous symptoms have developed only in some individuals, he recommends all to be treated with an injection of a milligramme of atropine sulphate. This will not only act as an antidote to those already poisoned, but render immune those in whom toxic symptoms have not had time to develop.

NOTES ON NOVELTIES.

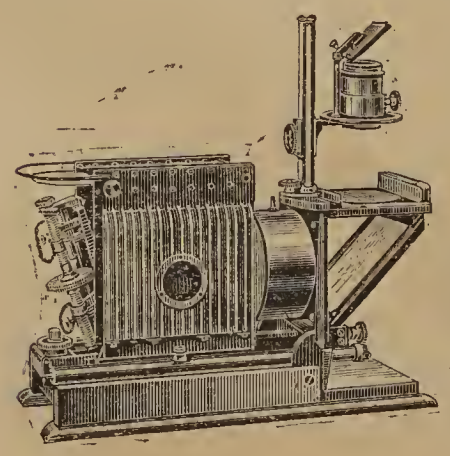
New High-Speed Medical Centrifuge.

Messrs. R. and J. Beck, Ltd., of 68, Cornhill, E.C., have introduced a slighty modificd form of that valuable piece of apparatus for rapidly depositing urine, blood, pus, milk, or other material—the medical centrifuge. Although the price has been considerably reduced, the new instrument is quite as efficient as the more expensive model. The apparatus is manufactured under the patent of Mr. Metzger, and is claimed to possess several advantages over other instruments for the same purpose. It has no changeable gear or loose parts. The mechanism is self-contained, and cannot in any way be tampered with. Hardened steel bearings and bushings render it very easy running, the rotation being almost noiseless, and one turn of the handle rotating the shaft thirty times. With very moderate exertion a high speed can be attained. Various parts are made of aluminium, and the test tubes drop into aluminium cylinders, by which they are entirely protected. A separate revolving arm, called a "Hematocrit" is supplied (figured on the right). It carries two small capillary tubes for sedimenting blood or other fluids of which a small quantity only is employed. The "Hematocrit" attachment consists of a metallic frame for carrying two graduated capillary blood cylinders or other tubes. The glass tubes, seated in rubber cushions, are held in position securely by spring clips, so that there is no danger of losing the tubes during rotation. By drawing back the milled heads, the tubes are instantly released, and may be as quickly clamped again into position. The price of the centrifuge complete in case is £4 4s. This includes Hematocrit, one pair of blood tubes, one pair of tubes for sputum sedimentation, and one pair of plain cylinder tubes, a holder for test tubes, onc pair of graduated percentage tubes, one pair of plain tubes, and one pair of milk bottles.



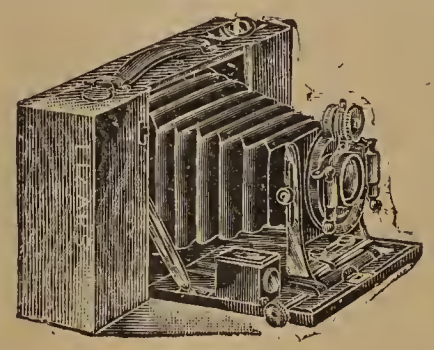
A New Lantern Body.

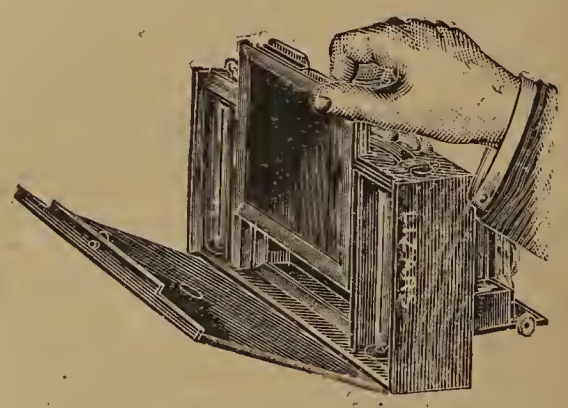
Messrs. Ross, Ltd., of 111, New Bond Street, W., have constructed and introduced an improved form of lantern body designed for efficient ventilation, without taking up more than the usual space. The body itself is made of stout brass, and the fittings and arrangement are not different from those in their other high-class lanterns. Outside this body is placed on each side an outer case of fluted aluminium, providing an air space sufficient to allow a free current of air to pass. The body is very handsome in appearance, and we have had demonstrated to us that even with an arc lamp the outer case never becomes uncomfortably hot. The body can be fitted with any form of first-class lantern front, the illustration showing it adapted to a science lantern as arranged for use vertically or for parallel beam work, etc.



New Hand Cameras for Plates or Film.

To those who desire a hand camera of the box form which will carry either a magazine of plates or a roll of film at will, the "Challenge" convertible magazine camera, manufactured by J. Lizars, of Buchanan Street, Glasgow, and 20, High Holborn, W.C., will appeal. The illustration gives a good idea of the appearance of the camera for use with plates. The changing is effected by sliding a bar at the top which releases the front plate sheath and allows it to fall forward. Sliding the bar back again releases the second sheath and so on. An indicator records the number of plates exposed. For use with film the plate magazine is entirely removed at the place indicated by a white line in the woodcut, and the sliding shutter in the side of the camera, which is also indicated in the block, having been withdrawn, the film cartridge is introduced. The paper end of the film is then passed round the rollers and attached to the receiving spool, on the other side of the camera. These operations do not require the use of a dark-room. The sliding shutter being closed and the door replaced at the back of the camera, the receiving spool is rotated by the thumb nut at the top of the camera until the film is in position for the first exposure. Each section of film when in position is registered at a ruby window. The camera is fitted with R R lens with iris, Bausch and Lomb shutter, "brilliant" view finders, and is a well-made instrument. Made only ¼-plate size. Price £5 5s.——Another hand camera, which also can be used for plates or rollable film, is Lizars "Challenge" Interchangeable hand camera, Model D. This is a camera of the folding front-board type that has become so popular. This form not only has the advantage of compactness, but by simple means the camera front can be made to rise and slide sideways so that whether the camera be used for upright or horizontal pictures, the foreground may be diminished. The present camera has these good points. When folded for carrying, its measurements are about 8 by 4½ and 2½ inches, and it is supplied either in polished mahogany or leather-covered, and there are no outside projections. It has R R lens, Bausch and Lomb shutter, and "brilliant" view finders. The camera is adapted for rollable films, and with "Daylight" cartridges the exposed film can be removed and a fresh one substituted with very little trouble. The spool of film and receiving roller are contained in receptacles on either side of the camera. The woodcut shows the back of the camera as it appears with the door open for the insertion of the cartridge, or, as figured, for the insertion of the dark slide. A focussing screen with focussing hood is provided. The camera is made for quarter. 5 by 4, or half-plates. The prices respectively are £5, £6 10s., and £9, but these prices do not include slides.





EXTRACTS FROM CONSULAR REPORTS.

Experiment in Storing Wine.—The grape crop of the vineyards of the Italian-Swiss colony at Asti, California, in 1897 was so large that it produced red wine far in excess of the cooperage facilities of the colony, consequently some means had to be devised to care for the surplus. Various plans were suggested, it being finally decided to build a concrete cistern. An excavation was made in a rocky hillside, walls of concrete 2 feet thick were put in, and the floor and top were added in as substantial a manner, the latter being supported by fifteen steel girders. The entire surface was covered with a lining of pure cement and glazed to the impermeability of glass. The cistern, which is 104 feet long, 34 feet wide, and 24 feet high, with a capacity for 500,000 gallons, was filled with wine and entirely buried beneath 3 feet of earth. The wine was kept in this reservoir for four months, and then drawn off into wooden tanks to be aged previous to being barrelled for shipment. The experiment is stated to have been entirely successful. The advantages of this method of storing are said to be that the wine is maintained at a cool, even temperature, the equal blending of so large a quantity of wine at one time, and the great saving in insurance, which is expected to repay the cost of the construction of the tank in five years.

"Plant Tuberculosis" is reported to have attacked an olive orchard situated near Merced, causing no little alarm at the Agricultural College of the University of California. This is the first hold the disease has secured in the State, and every effort is being made to stamp it out, the entire orchard being uprooted and burnt. The disease is commonly called the "olive knot," and has long been the scourge of the orchards of the Mediterranean countries. The symptoms are excrescences on the bark of the limbs of the trees and the appearance of small knots on the leaves and twigs. Over-production often follows, the fruit being of poor quality, and the trees finally die, owing to their weakened state. The disease is said to be due to the *Bacillus oleæ*, similar to the *Bacillus tuberculosis*, hence it is known as "plant tuberculosis."

Tobacco Culture is a new departure in the San Diego County. In 1896 twenty acres were planted, from which six tons of tobacco was produced and cured. About forty acres were grown in 1897. but none of the product has yet been offered for sale. The industry is reported to be of great promise, but is so far entirely in the experimental stage. The tobacco prepared for smoking is reported to be satisfactory, except that it is a little too strong for the majority of smokers.

The Director of the Bacteriological Institute at Grahamstown, last year in response to a request, supplied the authorities of Basutoland with a quantity of fungus for locust destruction. Whether from that treatment or from the severe cold of the winter, the large swarms of "voelgangers" that were threatening the country are reported to have almost entirely disappeared.

The Novelty of Drinking a White Man's Medicine proved an irresistible source of attraction to the natives for some time after the establishment of a dispensary at Leribe, Basutoland, but the small fee charged, Dr. MacFarlane, the medical officer, reports, has weeded out the mere novelty seekers, and people who are really ill now visit the dispensary, thus entirely changing the nature of the work carried on. The natives are beginning to appreciate the benefits derived from the establishment and to have a less dread of the hospital.

The Import of Drugs into Khorassan (Persia) has risen during the year 1897-98 from £454 to £2100. The increase, according to the report of Lieut.-Colonel Temple (Consul-General at Meshed), seems to have been due to an accumulation caused by the closing of the roads into Persia under the Russian plague regulations, otherwise there is no special reason why an unusual amount of drugs should have been imported. Most of the drugs are of Indian production.

The Development of Commerce in Germany during the years 1871 to 1898 is the subject of a recent diplomatic report, and amongst the numerous branches of industry mentioned are the chemical and pharmaceutical industries. The total exportation from Germany of raw chemical and pharmaceutical materials in the year 1889 amounted to £1,620,000, and in 1896 to £1.815,000; for manufactured articles the figures were £11,335,000 and £16,220,000 respectively. Great Britain's loss of imports into Germany from 1889 to 1896 in drugs, "pharmaceutical necessaries," and paints is estimated at £765,250.

The Camphor Trade of North Formosa, according to a recent report of Consul Bonar, is in the hands of German and Chinese merchants, acting probably in combination, no British firm at present seeming to interest itself in this important product. There was a slight decrease in the quantity exported in 1897, and a large decrease in value, viz., from £194,221 in 1896, to £121,938 in 1897.

In South Formosa the camphor trade during 1897 and the earlier part of last year almost entirely stopped, so far as concerned foreign merchants, owing among other causes, to the disturbed state of the country, and the difficulty and danger of sending money into the camphor districts. The roads were infested with armed robbers, and robberies were of such frequent occurrence that no merchant would venture to send money into the interior. In the raids and skirmishes between the military police and the robbers in the camphor-producing districts, numbers of stills were distroyed, it being estimated that not one-third of the stills in existence a few years ago, in which foreigners in South Formosa were interested, are now available for camphor production.

The Falling-off in the Export of Camphor from Tainan to Formosa, is strikingly shown in a table published in a recent report giving the number of boxes exported each year from practically the commencement of the trade in 1892, when 4315 boxes of 133⅓ lbs. each were shipped. In 1894 the trade had almost trebled, 12,157 boxes representing the export, and the following year 10,145. In 1896 it dropped to 8001, while the 1897 export—3057—was the lowest recorded. The trade may revive in course of time, but, as Acting-Consul Griffiths remarks, the outlook at present is certainly not very bright.

The Caoutchouc Ceara was recently introduced into the French settlement of New Caledonia by M. le Gouverneur Feillet, the result being described as "marvellously successful." With a few exceptions, most of the 10,000 grains distributed to several of the settlers have sprouted, and the trees, having arrived at a respectable height, have been enabled to withstand a severe cyclone very well. The settlers who have made a trial of the tree are quite agreed as to its future, and although the experience has been somewhat short it is said to have shown that the *C. ceara* does not require a hot and moist climate for its development, as is the case with other species of indiarubber-producing trees.

A Dyeing Process employed by the Arabs in Jeddah and Hodeida for dyeing fabric is described by Vice-Consul Ahmed Tamiz-ud-Din as follows: About 12 lbs. of colouring matter, which looks like indigo, ½ lb. of tamarind, ¼ lb. of colchicum, and 3 lbs. of crude fuller's earth are put in a large earthenware vessel in water. After the colouring matter has been thoroughly mixed with the water the fabric is dipped in the mixture, allowed to remain for about five or six minutes, and then taken out and dried. This process is repeated five or six times. The pieces are then placed in a vessel containing gum arabic for ten minutes. A thick layer of the dye rises to the surface of the mixture, consequently the fabric first treated is considered to be of a better quality than that dyed subsequently, and fetches a higher price.

The Method of Bleaching Sponges purchased at Tripoli for European markets is given in a recent report as follows: After being well soaked in the sea for cleansing purposes, the sponges are immersed in a tub of water containing a solution of oxalic acid, whence they emerge of a yellowish colour, great care being required that they do not remain in the solution too long, otherwise they become "burnt," and consequently worthless. They are then dried and worked up in dry sand, shaken, and packed in boxes ready for shipment. The presence of sand in the sponges, Consul-General Jago remarks, is said to be necessary to suit the requirements of consumers in certain European countries where it is considered an infallible test of the genuineness of the article.

NOTICES TO CORRESPONDENTS.

All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and not in any case to individuals supposed to be connected with the Editorial Staff; no responsibility can be accepted unless this rule be observed. Communications for the Current Week's Journal should reach the Office not later than Wednesday, but news can be Received by Telegraph until 4 p.m. on Thursday.

Advertisements and Orders for copies of the 'Pharmaceutical Journal' must be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C. Cheques and money orders should be made payable to "Street Brothers.

Articles and Reports sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Correspondents should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses—of course not necessarily for publication. No notice can be taken of anonymous communications.

Drawings for Illustrations should be executed twice the desired size; clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

Names and Formulæ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

Queries addressed to the Editor will be replied to in the Journal as early as possible after receipt, though not necessarily in the next issue. Replies cannot be sent by post, even though stamped envelopes accompany the queries.

LETTERS TO THE EDITOR.

The Suggestions for a Draft Pharmacy Bill.

Sir,—Now that we are assured of the advent of a new Pharmacy Bill it is necessary for all registered chemists to close up their ranks rapidly and become members of their Society without delay; it is only by such prompt and united action that the Bill has any prospect of success on its introduction. That the opposition in Parliament will be powerful is only too apparent when we consider the number of Members of Parliament who are connected with "stores" in one way or another, and it is necessary that a solid backing should be given to our Society in its effort to achieve that which the 1868 Bill has failed to effect—namely the limitation of the exercise of a chemist and druggist's business, which the Act declares to be expedient for the protection of the public. All little personal antipathies or any small fancied wrongs must be overlooked in presence of the greater good to be achieved on behalf of the whole body of chemists. It is painful to read Mr. Yewdall's letter in your issue of the 11th inst., as it only shows how varied are men's opinions upon the needs of the trade or profession. We feel that legislation is wanted, and we know that a Bill hampered with a large number of clauses would have no chance to pass the Committees of the House of Commons, and yet we have one of our own respected craftsmen threatening to wreck the projected Bill because his own idea is not carried out. Surely, sir, on second thoughts, it will appear strange to him that he should have so threatened. There is no reason why, if our present objective is successfully reached, a further advance on the lines indicated should not be made. Personally, I think Mr. Yewdall may be assured of sympathy in his wants, but at present we desire his whole support. A certain number of critics seem to think that the Society requires support—that it is in want of funds and that the present cry for greater support is to furnish those funds. The Society, I believe, can carry on in the future as in the past upon the funds which have always been provided by its loyal members. The present cry is to enrich the Register of members; it is monstrous to think of the few members amongst the many men who pass the "Square." The sole and only means of approaching Parliament is through the Society—there is no other way open. The only method by which the Society can move is by pressure from its members through the Council, and when these facts—stern facts—are faced, it is self-evident that every man must be a member of the Society before he has a *locus standi*. He cannot argue with any effect—he cannot appeal with any success unless his appeal or his argument is founded on membership. Some jib at the guinea per year subscription, but what of the bricklayer, the artisan, the mechanic, who pay their levies week by week? Surely they find its value. Besides, the majority of those who object to the guinea do not object to pay their subscription to a journal professing to be the trade organ—an organ which has no official influence, which can do them no good—and one whose policy for the last two years, at any rate, has been in direct opposition to the Council, and what do they get in return? A "diary," the literary part of which can be bought cheaply as a handbook, but in fact it is what every chemist ought to know himself without paying the extra price, and the sole other thing he gets for his 10*s.* 6*d.* is the editor's opinion of his trade and profession. It is an organ which has done more to cause discontent and disloyalty to the Society than any number of its disappointed aspirants in the Minor, and appears to be the mouthpiece and the champion of "drug stores." If that journal wishes to retain its respect for its title it would be well if its editor turned about and supported the Society now. He has nothing to offer us. In reply to our cry for bread, or the means of keeping it, he offers us a stone, and having nothing else, it would, indeed be grateful and comforting to find his pen dipped for a short time in pharmaceutical ink and cease to preach his jeremiads amongst an already too despondent party. If those who obtain the *Pharmaceutical Journal* will only take the trouble to read it and compare it with other trade organs a change would come over their passiveness. Professional journals are too often laid aside unread. A further point is to be noted in the present critical period of our affairs which ought to be brought before the notice of the Council to deal with—the question as to whether some arrangement shall be made to exclude from all benefits under the Benevolent Fund those disloyal persons who lend themselves to and prostitute their calling in the service of stores? I would seriously suggest that service in stores should disqualify a man from applying for help to the Fund. These stores would certainly not be open if it were not for them, and by their action they deliberately take away some portion at least of the wealth which might otherwise be spent in aiding the Fund. They will regret their "store" service when age or sickness advances upon them, and they will have themselves to blame. Having been officially connected with the Society for some years, but no longer now, for want of time, I can speak personally of the way in which its work is carried out amongst offenders. Outsiders do not know, or they never hear, of the scores of cases which are dealt with in the interest of registered chemists. It is only in contested cases that the trial is published, but there are scores of others in which the provisions of the Act are enforced. A welcome change would be to publish the name of every offender.

Preston, February 16, 1899. C. A. Arkle.

Sir,—The suggested Bill I feel sure must give satisfaction to every chemist in the kingdom. It will strike a greater blow upon those who would put up quack medicines, not being chemists, than upon company trading. But Clause 5 spoils the whole Bill. If it be possible to pass the Bill without Clause 5, well and good; several monuments will have to be erected in commemoration. But the trade will be better without the Bill if Clause 5 is to go in it. It is only upon this Clause that any remarks are needed. No business or profession is sold by Act of Parliament. Why should a chemist's business be thus sold? Solicitors and doctors can take partners and so carry on their professions for the benefit of a deceased family as well as for those living who may be attached to the firm. Besides, the positions of the professional man and a chemist are widely different. The chemist has a stock of substantial and tangible goods, with costly fittings and a goodwill and a lease in the bargain. The professional man has no stock, and the benefits resulting from his work while alive are not wholly lost when he is dead. Again, one is a business—a trade—the other a profession only. The doctor and the lawyer and, as a matter of fact, everybody else, can make a will before death, but if Clause 5 becomes law the poor chemist will not be able to do so on the most important item of his whole life. Can anyone in his senses imagine such interference with the liberty of an Englishman? Clause 5 will depreciate every chemist's business, even while the poor fellow is above the ground. Who will buy a business at value, when by waiting a little the business must be sold; then it can be bought cheap? Is it to be that, as a chemist declines in health and age, his business is gradually dying with him, and when he does die his business is sold, as though he were a criminal debtor? If Clause 5 should become law it will only be right and proper that Government should provide by compensation for any loss in the sale and otherwise; also chemists should be exempt from all death

dues. Cannot Government give us our rights without applying a penalty, such as Clause 5? If not, I would suggest that they add these words to Clause 5: "And all widows and children under twenty years of age of deceased chemists be buried alive with the dead husbands."

London, February 15, 1899. Geo. P. Pond.

Sir,—I have read with considerable interest the proposed Pharmacy Bill, and the criticisms of different writers. What I have to say about it is, as it now stands, it absolutely cannot be passed—and why? Because Clause 2 proposes to create a "monopoly," which the most enthusiastic of its supporters cannot really wish for. How ridiculous it would be to restrict the sale of beeswax, borax, carbonate of soda, etc., to chemists only, just because a small quantity is sold for medicinal purposes! What a farce! I was at the meeting of a local association last year where it was proposed to draw up a schedule of the articles to be sold only by chemists. This is totally unnecessary. What chemists alone ought to sell are the "purely medicinal compound preparations of the British Pharmacopœia." No schedule need be drawn up. "Poisons" we alone can sell at present, and, to come to the pith of my point, why not alter Clause 2 to: "Purely medicinal compound preparations of the British Pharmacopœia" "to be sold, dispensed, or compounded only by qualified persons." This includes all things, such as tinctures, compound powders, syrups, wines, etc., which a chemist alone is educated to understand. These are the things he has been created for, what he has to learn about and pass examinations for. No one will deny, in face of the prosecutions of persons selling such things as tincture of rhubarb, Friar's balsam, sweet nitre, etc., not of the proper strength, that chemists alone ought to sell these articles, and for a person who knows nothing at all about them to retail them is—well, certainly not to the safety of the public. When qualified persons alone sell such important preparations as require special knowledge to be able to prepare them, then, and not till then, will chemists be appreciated by doctors and the general public at their true worth.

Somercotes, Derbyshire, February 21, 1899. J. W. Roberts.

Sir,—Last week in your editorial you dealt with the danger of asking for provisions which have no reasonable chance of becoming law. You pointed out this lesson so effectively that I would like to quote your remarks thereon in full:—

> A much more rational frame of mind would be indicated if everyone legitimately interested in the matter would strive to agree as to the provisions of a Pharmacy Bill which there may be a reasonable prospect of passing into law, rather than endanger the chance of any measure that may be drafted by seeking to include in it provisions which are not equally easy of attainment. It is useless to ignore the fact that a Bill embodying all that could be desired by registered chemists must of necessity be overloaded and foredoomed to failure. Such a Bill would fail to secure adequate support, even on the part of those for whose benefit it was drafted, because the hopelessness of attempting to proceed with it would be recognised from the outset.

The above quotation exactly and neatly puts the case for many of us who question the wisdom of the present policy of the Council. Do your remarks not fully apply to one suggestion as they now stand? The proposal to limit the sale of all medicines to legally qualified chemists is sufficient in itself to overload the Bill to sinking point. Whether we ought to have this restriction is beside the question. You admit that we should for the present rather concern ourselves with the prospects of getting what we ask for than that we should take care to demand all we would like. Never was there so favourable an opportunity for securing some modification of the law affecting companies which would place the individual chemist who has legally qualified by examination in a better position. The Lord Chancellor has expressed his sympathy, and the General Medical Council, are in the interests of their profession, actively engaged in promoting some such alteration. Do not the suggestions made by our Council to the Lord Chancellor seriously endanger our losing this opportunity? The Council tempts increased opposition from without and is certain to be called upon—under the circumstances, I think rightly—to face opposition from our own ranks in reference to the "Widows' Clause." From the point of view of a chemist, not behind the scenes, it appears to me that it would be wise to drop the suggested Pharmacy Bill and, for the present, seek to co-operate with the General Medical Council and the Irish Pharmaceutical Council in asking for such an amendment of the existing laws governing company pharmacy as we have "a reasonable prospect of seeing."

Aveley, Essex, February 22, 1899. W. S. Glyn-Jones.

Sir,—I fully agree with the letter from "J.S., M.P.S.," in this week's Journal. Under the circumstances he mentions, it would be very unreasonable to be compelled to sell the business; but in my opinion there is a remedy which no one seems to have thought of. A widow could not be compelled to dispose of the business if she discontinued the sale of scheduled poisons and the use of the words "chemist and druggist, etc." In an old-established shop this would not make any serious difference in the takings. If a year is allowed as suggested, that would enable her to sell most of the poisons, those unsold would be packed away or disposed of to another chemist; new labels, counter bills, etc., would be printed, Mrs. ——— herbalist, or some similar title, which she would use until her son or daughter was old enough to qualify. Of course, she would have a qualified manager. It would certainly be better than selling the business. I do not agree with those gentlemen who say that it is not to the profit of a widow to carry on her husband's business; I am managing one at the present time, so can speak from experience. I should like the opinion of other chemists whether the above way would be legal; if so, let us abolish the "Widows' Clause" as soon as possible.

February 18, 1899. Nil Desperandum (172/1).

Sir,—The proposed new Pharmacy Bill is so revolutionary that one would expect your pages to overflow with discussion. To help the discussion I crave room for a few questions and opinions. I doubt the advisability of joining the prohibition of company pharmacy with a pharmacy for the pharmacist measure in one Bill. We should remember that every Member of Parliament has not the pharmacist's enthusiasm for pharmacy; rather he is likely to regard our proposals with jealousy. Under these conditions, the more restrictions upon outsiders we put in our Bill, the more opponents we shall make, without attracting anything like an equal amount of active support by the desirability of our proposals. It is quite possible that both of two proposals might pass separately on their own merits, and yet they would be rejected if included in one Bill, because different elements of opposition would thus be united. I think it would be wiser to undertake the limited company question first. The fancy that there is for reform of the company laws, and the similar attempts being made by other professions, would be in our favour, and it would be all the better if the thing could be done without our Council having to introduce a Bill of their own for the purpose. The provisions in the Suggestions relating to the wholesale trade seem to need overhauling: there must be confusion between the existing and proposed states of affairs. Clause 2 restricts the selling of medicines to registered persons, Clause 4 allows "wholesale dealers" to supply poisons to retailers. It cannot be intended that a wholesale dealer (unregistered) should be allowed to supply opium to a retailer, but not Epsom salts. I take it that the intention is to leave the wholesale trade free, as at present. I hold that in the small towns the wholesale druggist does more harm to the chemist than limited companies do, and I wonder that the chemist should deal with wholesale houses that have not a registered man on the establishment and supply drugs to grocers or anybody else. Clause 1 of the Suggestions places partnerships and bodies corporate on the same footing. Explanation is needed here again. Are two or seven registered men to be prohibited from carrying on business as pharmacists in partnership? Or are seven or more registered men to be allowed to carry on business as a limited pharmacy company? If the latter, what are we going to fight for? The *Chemist and Druggist* has told us that all the directors, except one, of a certain limited company are qualified men. If the wholesale trade is to be exempt, the warnings we have heard of opposition from firms like Southall Bros. and Barclay are wide of the mark. But perhaps wholesale pharmacists who really are pharmacists do not desire such exemption. Clause 2 of the Suggestions is admirably simple and consistent. In it the principles of protection of the public and regard for the pharmacist's interest are carried to their logical extreme. Whether we should ask for all this, or only part, is a matter of policy. To ask for the sole right of selling medicines is asking too much. A strong position for us to take would be to ask for the sole right of dispensing prescriptions, compounding medicines, and selling compounded medicines. The third item is a necessary consequence of the second. At the British Pharmaceutical Conference meetings it was advocated that the compounding of many medicines should be left to the large manufacturer, on grounds of economy. The retail chemist would still worthily fulfil his duty, since he is in a

position to ascertain, by testing his medicines, that they are all they should be. If that is what we are coming to, the need is all the greater for the retail chemist to be a qualified man. Much is left to the discretion of the manufacturer, who, as a wholesaler, need not be a qualified man. If the retailer is also unqualified, compounded medicines will often reach the consumer without having been subjected to the scrutiny of a qualified chemist. The "Widows' Clause" is probably not worth the trouble it has caused. Where it is of any importance it will be of the highest importance, but such cases will be very few. By extending the limit to five years a youth who is old enough to choose a calling would be given time to qualify, and so the only valid objection would be met. I hope my brother chemists will not let the present opportunity slip, through lack of their support, and then cry, "I told you so." Let everybody say all he has got to say, that is worth saying, beforehand, and then heartily support the plan that is generally acceptable.

February 21, 1899. QUIDAM (172/33).

The Poison Regulations.

Sir,—On reading over the "New Poison Regulations" in the Journal of February 11, I am surprised to see in article No. 3 (That in the dispensing and selling of poisons, all liniments, etc., be sent out in bottles rendered distinguishable by touch, etc.) no instructions are given for "poisonous drops," which has become so much the fashion in England lately, for instance: "Liq. Arsenicalis. Dose, 4 drops in water after meals." That cannot be sent out in a poison fluted bottle "for external use," for it is intended "to be taken." I recently had a prescription, "Liq. Strychnine, ℥i., Sig. 2 drops in water after meals," signed only by initials that I did not know (written in England). I declined to dispense it until the patient brought me a prescription signed in full by a doctor I knew, and I then kept the prescription and filed it, according to Italian law. The strychnine prescription had been sent out in England in a plain white bottle, without even "poison" on it.

San Remo, February 14, 1899. F. R. Squire.

Sir,—I think it is advisable to suggest a few queries by way of elucidation of the new poison regulations. Some of my questions, however, have been met by your observations in the Annotations of last week's Journal, especially with regard to the method by which these regulations were to be enforced. But with regard to Clause 3, dealing with the dispensing, or more particularly the selling, of poisons, it seems to me that the word poison is very indefinite. There are many recipes brought under our notice daily in which a poison forms but a small proportion. In these cases it would be difficult to decide in which category to place them, and generally to classify those that would come under the denomination of poison and those that would not. Some definition on this point, I think, is called for. Finally, I would suggest that the Registrar would forward a copy of these regulations to every registered chemist who is not a subscriber to the Society.

Pontypridd, February 21, 1899. Daniel Arnott.

The Granular Effervescent Preparations of the B.P.

Sir,—I have read the report of Messrs. Davidson and Lunan's excellent paper on the above subject, and can fully appreciate the extent of the work involved, and am pleased to have many of my results confirmed. In this paper the authors question the probability of my statement that (adopting the P.B. process of granulation), the bicarbonate combines with the citric acid exclusively. Of course, I cannot tell whether this is actually so, but I will repeat more fully my reasons for believing it. In the first place, the quantity of CO_2 found to be set free closely corresponds with the amount which the citric acid present would be able to liberate. Then, as only the citric acid melts during the process, only this acid is brought into molecular contact with the soda (or, putting the same thing more elaborately), the water (of crystallisation) set free by heating of the citric acid would primarily start the reaction of the molecule from which it was derived, and then be quickly dissipated before enabling the dry tartaric to appreciably combine. The question is probably more physiological than chemical. My original statement that the bicarbonate combines exclusively with the citric acid, of course remains an hypothesis, but, it seems to me, not an unreasonable one.

Brixton, S.W., February 20, 1899. Chas. S. Dyer.

Polyglot Prescriptions.

Sir,—If you think the following will interest your readers you may make use of them in your Journal. The first form is from a recent number of the *Journal Suisse de Chimie et Pharmacie*, and is headed as a very good (?) form for cod-liver oil emulsion with hypoph.—

℞ Aq. Calcis	250·0
Saccharin	0·20
Alcool	*q. s.*
Calc. Hypophosph.	30·0
Natr. Hypophosph.	15·0
Gelatin	30·0
Add—	
Ol. Jec. Asel Alb.	250·0
Ol. Amygd. Amar.	gttes. v.
Ol. Anisi	gttes. xv.

The manner of manipulation is left to the knowledge of the pharmacist, and the dose is not stated. The following prescription, written partly in four languages, is a copy of one I had to dispense recently:—

Signor Gardiner.

℞ Sodæ Bicarb.	gramme ii.
Potassæ Bicarb.	gram. i.
Syrupus Zingiberis	℥ss.
Tinctura Capsici	gocce 60.
Aqua Menth. Piperit.	ad ℥viii.

One tablespoonful three times a day between meals. D. A. Coles.

You will notice the weights are partly in English and partly in French and Italian, and the wording in a kind of Latin.

Geneva, February 19, 1899. Alfred Roe.

The Modern Pharmacist.

Sir,—It is totally impossible at the present time for the majority of the chemists of Great Britain to fulfil their duties properly whilst any man or woman is allowed to act as and pretend to be a chemist, to dispense and sell nearly every drug and poison in the Pharmacopœia, and to open and set out places to look exactly like a chemist's pharmacy. The bread is thus robbed out of a chemist's mouth, leaving him usually so poor that he is unable to even prepare the drugs and medicinal articles he supplies, apparatus necessary to test his articles are quite out of his means to procure, and the public whose safety he is supposed to care for and protect suffers much from this inability of chemists to make or guarantee each article used. Again, many large districts and villages are denied the services of a chemist amongst them, because co-operative stores, grocers, and small shopkeepers all sell drugs, thus preventing chemists, under such circumstances, from opening a pharmacy. Many chemists are at the present time carrying on a heart-breaking calling, doing only £3 to £4 a week, out of which has to be paid rent, rates, and taxes, and the cost of drugs and articles supplied, leaving such a bare pittance that a servant girl would not accept. So great is the system of selling strong and dangerous drugs now becoming, that even beer retailers, grocers, ironmongers, and bootmakers are in many parts vending drugs which are usually supplied to them by men who have had no training whatever and are quite unable to tell if the articles they supply are what they profess to be or not. Again, in many parts the public are put to great annoyance and injury through ignorant and dangerous quacks setting up imitation chemists' pharmacies, and so preventing trained and qualified men from starting. What can be more annoying to a man who has trained himself for and obtained the qualifications demanded by the law, than to be daily classed with some "herbalist quack" or other ignorant impostor who has opened a "chemist's" business? And yet this is done daily, the public classing everyone as a chemist who puts the usual coloured show bottles in a window, or arranges his place to look like a pharmacy and then, to further deceive the public, calls his place "medical hall," "drug stores," or other misleading title. Not only have chemists to put up with these insults, but to bear the great loss these ignorant parasites inflict upon large numbers of trained and qualified men. I have myself seen eight chemists in two streets of one town ruined and driven out of their pharmacies through the violent cutting opposition of quacks, large stores, and grocers, and what has happened to those eight unfortunate pharmacists is happening to many others daily in various towns. The question is often asked, Are chemists who advertise for and take for several years "well-educated youths as apprentices" justified in doing so under the present disgraceful and ruinous circumstances? Are not these educated young gentlemen, fresh from college or school, taken like

sheep to the slaughter, the best years of their life spoilt, and then to find they have been basely deceived? I think it is only fair to those young aspirants that they and their parents should be made to clearly understand the drawbacks and hardships in front of them. In fact, I may go so far as to say that I think no chemists are justified in accepting apprentices until the profession of pharmacy is placed on a true basis. That I may not be thought to have drawn an over-pessimistic picture of present-day pharmacy, or that any exaggerations have been made, I may quote the case of a chemist who has had a first-class and varied experience, and who is the only chemist in a district of some 8000 to 10,000. This man's weekly takings amount to no more than £3 to £5 a week, and this with a daily duty of thirteen hours. This chemist has three sham chemists in the same street to contend with, besides numerous shopkeepers vending drugs. This unfortunate being is so poor that he cannot even buy a Pharmacopœia or prepare his own drugs, and through no fault but that of having committed the awful crime of qualifying as a pharmacist, he is condemned to either leave his profession or to go through life unwed, unloved, and uncared for.

February 20, 1899. Miserably Poor (172/32).

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of senders. Questions on different subject should be written on different slips of paper, each of which must bear the sender's initials or pseudonym. Replies will, in all cases, be referred to such initials or pseudonyms, and the registered number added in each instance should be quoted in any subsequent communication on the same subject.*

Cocaine Solution.—A 10 or 20 per cent. solution of cocaine hydrochloride in oil of cloves is used for external application in neuralgia. [*Reply to* L.—24/3.]

Letters Patent.—(1) By threatening to institute legal proceedings; (2) One pound; (3) Application forms can be obtained from any money order office. [*Reply to* E. H. B.—23/27.]

Materia Medica.—(1) Not yet. (2) Southall's 'Materia Medica' (Churchill, 6*s.*) is probably the best work at present available for your purpose. [*Reply to* W. H. L.—23/32.]

Milk and Infection.—Apply to Eyre and Spottiswoode, East Harding Street, E.C., for a copy of the report of the Royal Commission on Tuberculosis. [*Reply to* R. C. H.—23/31.]

Sale of Spectacles.—It is perfectly free to anyone to sell spectacles. The object of the new examination scheme is to give those who are properly qualified to sell them an opportunity of proving their fitness. [*Reply to* Nil Desperandum.—24/2.]

Brazil Nuts.—The so-called "nut" is a seed, and the capsule enclosing it is the ripened ovary. The calyx is deciduous. Refer to the 'Treasury of Botany,' under *Bertholletia excelsa*, for further particulars. [*Reply to* Student.—23/29.]

Dental Qualification.—So far as we are able to ascertain, there do not appear to be any restrictions on the practice of dentistry in the islands, but there probably will be shortly, and anyone commencing practice will find a qualification desirable, if not essential. [*Reply to* H. A.—22/33.]

Analyst.—Of the two plans you suggest, the first would be preferable. If you think seriously of becoming an analyst, you should also take steps to pass the examinations of the Institute of Chemistry. Write to the Secretary, 30, Bloomsbury Square, W.C., for particulars. [*Reply to* Photo.—23/20.]

Kainit.—This is a natural product, found in the neighbourhood of Stasfurt, in Prussia. It is a double sulphate of potassium and magnesium. [*Reply to* T. B.—23/22.]

Chlorodyne Lozenges.—The answer to your first and second questions is in the affirmative. With regard to the third, a conviction might be obtained if an offence were proved. [*Reply to* Doubtful.—24/5.]

Antiseptic Powder.—The most useful powder for the purpose you mention is boric acid, used either alone or in combination with iodoform, salicylic acid, etc. [*Reply to* W. H. D.—23/28.]

Glycerin in Lotions.—Glycerin is not necessary in the case of lotio hydrargyri flava, because the lotion does not contain mucilage of tragacanth. With regard to your other query, see page 182 of this issue. We are glad to find you exercise your critical faculties, and are much obliged by your note. [*Reply to* David Foulis.—23/3.]

Insoluble Colouring Matter.—One of the iron oxides used as pigments might answer your purpose, or sulphurated antimony. If not, try one of the numerous red substances used as pigments which can be found in any oilshop. These are nearly all insoluble in water. The formalin-gelatin compound would not be decomposed under the circumstances you mention. [*Reply to* Gelatin.—23/12.]

Crystalline Aluminium Oxide.—Your failure is probably due to insufficiently high temperature having been employed. The oxy-hydrogen blowpipe or an electric furnace are required in order to attain the fusing point of the body mentioned. The methods you mentioned are those usually employed, but we would advise you to refer to a paper by Fremy and Feil in *Phil. Mag.* [5], v., 47, where you will probably find fuller details than those now at your disposal. [*Reply to* H. R. F.—23/6.]

Spectacle Business.—(1) We are given to understand that a class is to be commenced in Manchester shortly. (2) Thoroughly reliable optical goods can be procured from Messrs. J. Raphael and Co., 51, Clerkenwell Road, E.C., or from Messrs. Botwright and Grey, Clerkenwell, E.C. (3) You will find a list of suitable books at page 118. Look through indexes to recent volumes and answers in recent numbers before sending queries. [*Reply to* Optics.—23/35.]

Nail Cleaning Fluid.—A solution of potassium carbonate, 8 or 10 grains to the ounce, coloured a faint pink with phenolphthalein, is effective. Directions should be given never to use a steel knife or scissors to scrape the nails; a piece of hard wood alone should be employed. A dilute solution of sulphurous acid will also be found effective in bleaching nails that are much discoloured. [*Reply to* A. W.—23/25.]

Symbol in Prescription.—The symbols $\bar{\text{z}}$ss. can only mean one thing, viz., half an ounce weight apoth., or 240 grains. It is, however, conventionally employed in prescriptions to signify half a fluid ounce. Probably the writer of the prescription himself does not know the actual difference in the true value of the symbols, but would tell you he intended equal parts, without having thought of the question of weight or measure. We should be inclined in this case to give 240 grains by weight, *i.e.*, the actual amount indicated in the formula. [*Reply to* W. W.—170/3.]

Aluminium Aceto-Tartrate.—Separately dissolve alum, 75 parts; and sodium carbonate, 70; each in water, 1000; mix, collect the precipitate, wash with water until the washings are tasteless, and drain. Next, transfer the precipitate to a tared capsule, add glacial acetic acid, 15, and tartaric acid, 13·5, heat until solution is effected and evaporate to dryness. The product is soluble in about its own weight of water and a solution containing 50 per cent. of the dry so-called aceto- or acetico-tartrate is official in the 'National Formulary'; to prepare that solution stop the process of evaporation referred to above when the contents of the capsule weigh 100 parts. [*Reply to* W. H. D.—23/28.]

Examination of Powdered Drugs.—The pamphlet is a reprint from the *American Journal of Pharmacy*, and, so far as we know, is not on sale. Write to the author, at the Philadelphia College of Pharmacy, Philadelphia, Pa., U.S.A.

[*Reply to* G. H.—24/7.]

Volatile Insecticide.—Crude nicotine is what is generally used for the purpose. The commercial article is met with in various forms and contains from 10 to 40 per cent of the alkaloid. It is very effective, but also extremely poisonous and should be handled with care. You may obtain it from Messrs. Tyrer and Co., Stirling Chemical Works, Stratford, E.

[*Reply to* W. H. D.—23/28.]

Finish for Boot Soles.—We cannot undertake quantitative chemical analyses of such substances as the sample of boot polish you send. It appears to contain yellow ochre suspended in a solution of shellac in borax. Something on the following lines will probably answer your purpose: Borax, 2; brown shellac, 2; water, 40. Boil until the shellac is dissolved, then rub down smooth yellow ochre, 3, with a little of the mixture and add the rest while warm. [*Reply to* Sololine.—23/21.]

Extracts in Ointments.—We presume the ointments you refer to are made with a basis of lard. Use one of the three following plans: (1) Use as little water or glycerin as possible in rubbing down the extracts; (2) add a drop or two of tincture of senega or quillaia to the softened extract before mixing with the fat; (3) rub the softened extract with a little hydrous wool-fat before combining it with the other fat. If you do not get good results send us a sample of the extract you are using and formula for the ointment you desire to make. [*Reply to* C. B.—23/15]

Aniline Marking Ink.—(*a*) Aniline black, 2; hydrochloric acid, 1; methylated spirit, 6. Dissolve with heat and add while hot to a solution of mucilage of acacia, 2; simple syrup, 4; in water, 18. (*b*) Mix crude aniline, 50; with water, 25; and hydrochloric acid, 25; heat on the water bath until completely dissolved; add cupric chlorate, 10, and boil. Then add hydrochloric, 15, and gradually potassium bichromate, 10. Finally, add hydrochloric acid, 10, or enough to obtain a complete solution; cool and filter. [*Reply to* J. M. C.—35/24.]

Dark Room Light.—The best material you can use is the spectroscopically tested ruby glass sold by David Allan, 57, Titchfield Street, Tottenham Court Road. This is safe for all plates and papers except the most rapid plates sensitive to all colours. It might possibly be worth your while to have two screens, one of double flashed ruby sold by Hetley and Co., 35, Soho Square, W. This could be used with perfect safety for bromide papers, and then shifted to one side, and the ruby screen used for plates. Lead is the best material to use for a sink, and the local plumber could easily fit one up for you, or Allan can supply you with one ready made and only requiring to be fixed. [*Reply to* W.B.—23/8.]

Cyan-Acetic Acid.—Your best plan to prepare this would be to proceed as in the preparation of diethyl-malonate. Dissolve 100 grammes monochloracetic acid in 200 grammes of water in a porcelain basin, and neutralise the solution with 75 grammes potassium carbonate. 75 grammes powdered potassium cyanide are now added, and the mixture is heated on a sand-bath until the reaction sets in with strong ebullition. When the reaction is ended, evaporate the contents of the basin as rapidly as possible on the sand-bath, with constant stirring, until a thermometer inserted into the brown semi-fluid mass indicates a temperature of 135° C. At this point you will obtain the maximum yield of potassium cyan-acetate. Allow the mass to cool without interrupting the stirring and, when cold, finely powder the hard saline deposit, consisting of potassium chloride and potassium cyan-acetate. To obtain cyan-acetic acid from this mass add sulphuric acid and evaporate to dryness. Then extract the residue with any suitable solvent that will not dissolve sulphates, say alcohol, ether, or possibly acetone. [*Reply to* C. and J.—22/19.]

Text-Book of Bacteriology.—There is nothing better for your purpose than Hewlett's 'Manual of Bacteriology' (Churchill, 10*s.* 6*d.*). [*Reply to* F. W. H.—24/4.]

Solvent for Rubber.—Carbon bisulphide is the best solvent for the purpose. [*Reply to* W. S.—24/6.]

Sodium Formate Toning Bath.—We have not heard of anyone else failing with the formate bath. The few experiments made for us have been quite successful, even with very old paper. It has been stated that the formate made by neutralising sodium carbonate with formic acid acts better than the purchased salt. The bath should be made alkaline with sodium carbonate for gold, or acid with formic acid for platinum. Platinum bichloride must be used, not potassium chloro-platinite, as in the usual platinum toning bath. [*Reply to* G. R. L.—23/24.]

Fracture of Glass Mortar.—The spontaneous fracture of glass mortars and toughened glass generally is not an unusual or uncommon occurrence. As a matter of fact, there is always some inducing cause, so that it can scarcely be looked upon as a spontaneous act, though, as in your case, appearances at first favour that view. It is generally thought that the fracture is due to the glass being imperfectly annealed, or a weak spot may be left at the point touched by the dipper used in the annealing process. Supposing this to be the case with your mortar, and that the cold water employed was the cause of the disruption, the effect was not immediate, because glass, a mixture of vitreous silicates, is a slow conductor of heat, and the whole mass would not at once respond to the internal strain set up, and assume a crystalline form. The equilibrium of the vitreous mass may be disturbed by slightly scratching the surface, by the heat of friction developed in powdering a substance, or by the cold that attends solution of most chemical bodies. The last-mentioned is the commonest cause. The older the glass vessel the more liable it is to fly into fragments; consequently, it would be well to avoid using such mortars, especially for making solutions of substances. Where the solution of a very poisonous substance like mercuric chloride is concerned, a wedgewood mortar, being somewhat porous, is unsuitable, but is better replaced by a well-glazed porcelain mortar than by a glass one. [*Reply to* H. S. A.—24/1.]

INFORMATION WANTED.

Dr. Garrod's Gout Powder.—Name and address of proprietor will oblige. [J. B. W.—23/30.]

Scintilla.—Where can I obtain a substance called "Scintilla," used for hardening steel surfaces, etc.? [J. A.—23/33]

Turkish Bath Salt.—Can anyone give me the address of the makers of this preparation, or particulars of a working formula for making it? [Antipyrin.—23/34.]

Cassarite.—An article bearing the name of "Cassarite" is made by a firm called Beardall and Metcalf. The address of the firm is required. [J. A.—21/16.]

Stains.—Particulars are wanted regarding the composition of Stirling's aniline gentian violet stain and Austin's fuchsine stain. Can any reader oblige? [X. S.—21/17.]

Posological Table.—Where, and at what price, can a posological table be had, mounted on cloth, with rollers, and varnished? It should be very complete, giving doses of all new synthetic remedies and out-of-the-way articles, including old-fashioned drugs. [Toxic.—21/33.]

Coloured Vials.—Where can I get a pretty 2-ounce bottle for children's medicine? Amber and blue are not suitable colours; pink would be preferable. [A.M.—22/11.]

ROYAL COLLEGE OF SURGEONS -3 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Experiments with a Simple Spectroscope.

Sir Norman Lockyer has published two articles on a simple spectroscope and its teachings, the apparatus required being producible at a cost of a few pence only. It is recommended to take a piece of wood from 20 to 10 inches long (the distance of distinct vision), 1 inch broad and ½ an inch thick. On one end of this glue a cork 2 inches high; at the other end fasten, by melting the bottom, a stump of a wax candle of such a height that when lighted the dark cone above the wick is level with the top of the cork. Buy a small prism from an optician for sixpence, and glue it on the cork in such a position that on looking sideways through it the coloured image, or spectrum, of the flame of the candle can be seen. But this spectrum is impure, because the images of the flame produced by the light rays of every colour overlap. To get rid of that defect the candle must be replaced by a needle which is allowed to reflect the light of the candle flame, and serves as the equivalent of the slit in more complicated spectroscopes. If care be taken in using the needle to prevent the direct light from the candle falling upon the face of the prism, a much purer band of colour will now be obtained, because there will be an inumerable multitude of images of the needle instead of the broad flame, close together, or a slit may be made by gumming on a piece of glass two pieces of tin-foil with perfectly straight edges, which must be parallel. This slit should be placed close to the candle in its original position, and between it and the prism. The apparatus having been constructed, the student who follows the lucid instructions given by the author, and performs the experiments described, should find no difficulty in reading with intelligence most ordinary books in which spectrum analysis is referred to, and in forming a clear conception of the meaning of terms such as spectrum, continuous spectrum, grating, prism, spectroscope, slit, line spectra, fluted spectra, discontinuous (or selective) spectrum, Fraunhofer lines, wave-length, radiation, absorption, and series.—*Nature*, 59, 371 and 391.

Schimmelia Oleifera?

Further investigations have shown that the West Indian sandalwood plant, recently described by Mr. E. M. Holmes (*ante*, p. 53), belongs to the genus *Amyris*, to which it would undoubtedly have been traced both by Mr. Hemsley (see *ante*, p. 137) and Mr. Holmes had that genus been placed, as it ought to have been, under Rutaceæ in the 'Genera Plantarum' of Bentham and Hooker, instead of under Burseraceæ. So far as its affinity goes, both were right in referring it to the Rutaceæ, in which natural order *Amyris* has recently been placed by Engler and Prantl ('Die Natürlichen Pflanzenfamilien,' 1896, lief. 131-132, p. 182). The leaves and fruit being decidedly rutaceous, it did not occur to Mr. Holmes or to Mr. Hemsley to look under the natural order Burseraceæ for the plant, and it was only when the latter sent a piece to Dr. Urban, of Berlin, that it was identified by that botanist as *Amyris balsamifera*, L. The specimens of that plant in the Kew Herbarium have rather larger leaves than the "*Schimmelia*," and narrower, more elliptical fruits, but otherwise do not appear to differ. It is curious that Engler and Prantl state that *A. balsamifera*, L., is called rosewood, and that it gives an essential oil, as well as a resin. The West Indian sandalwood oil can scarcely be considered to have a rose odour, and the wood has not the colour of rosewood in commercial samples. But "*Schimmelia*" undoubtedly agrees with *Amyris* in characters, except that the stamens in *Amyris* are not stated to be of unequal length, *i.e.*, four longer than the other four, as they are in "*Schimmelia*."

Sodium Peroxide as an Air Purifier.

Desgrez and Balthazard propose a method by which the atmosphere can be deprived of carbon dioxide, and which should be of especial service in the sickroom. It consists in the use of sodium peroxide, a substance whose properties have been dealt with by Vernon Harcourt, who showed that it is readily decomposed by water, with production of sodium hydroxide, oxygen, and hydrogen peroxide. The authors have endeavoured to utilise not only the oxygen, but also the alkali which is formed at the same time. The reaction takes place in the cold, and the yield of oxygen is about that of the theoretical requirement, viz., one atom of oxygen for every molecule of sodium peroxide decomposed. Experiments prove that if an animal be immured in an atmosphere whose oxygen is derived from this reaction the quantity of alkali produced is more than is required to combine with the carbon dioxide exhaled. A guinea-pig, weighing 400 grammes, placed in an apparatus of 10 litres capacity, containing sodium peroxide, on which water was falling drop by drop, exhibited the same amount of vitality at the end of four hours as it did on entering. At no time did it exhibit difficulty in breathing. On repeating the experiment without sodium peroxide a similar animal was asphyxiated in about two hours. A dog weighing 6 kilogrammes was then confined in an air space of 70 litres, 200 grammes of the dioxide being disposed around it. The dog's vitality was not less after six hours, while another dog weighing 5 kilogrammess succumbed in four hours, in the absence of sodium peroxide. The sodium peroxide appears to be attacked only superficially, and the authors consider that the survival of animals so treated is due rather to the fixation of a part of the carbon dioxide exhaled than to the regeneration of a quantity of oxygen sufficient to support respiration.—*Comp. rend.*, 128, 361.

Spectroscopic Analysis of Minerals.

A. de Gramont has overcome the difficulty in volatilising substances experienced in the spectroscopic analysis of minerals which are non-conductors, such as the felspars, by mixing some easily fusible salt with the powdered mineral, and then heating the mixture with a Bunsen burner, when the mineral is generally dissolved in the salt, and the electric spark is passed from the mass while molten. In most cases he uses one or more Leyden jars in the secondary circuit to raise the temperature sufficiently. The salts he finds best adapted are the carbonates of lithium and sodium, chiefly on account of the simplicity of their spectra, which have, of course, to be eliminated from the results before the spectrum of the mineral itself can be mapped. For this purpose he gives tables of the principal wave-lengths in the spectra of these salts, and also of the more commonly occurring simple bodies. He then describes in detail the characteristics of the spectra observed with the non-conducting minerals, of which he has examined twenty-five specimens.—*Bull. de la Soc. Franc. de Mineral.*, through *Nature*, 59, 397.

Labiatæ with Alternate Leaves.

I. H. Burkill and C. H. Wright read a paper before the Linnean Society, on February 16, "On some African *Labiatæ* with Alternate Leaves." This peculiarity has recently been used by M. Hua to characterise a new genus, *Icomum*, to which three new species are now added. The affinity of the genus is said to be with *Æolanthus*, in which certain irregularities in the arrangment of the bracts of the inflorescence and flowers may be observed. The types of the new species described are stated to be in the Herbarium at Kew Gardens.

PHARMACEUTICAL POLITICS—THE "WIDOWS' CLAUSE."

BY BARNARD S. PROCTOR.

I have often written on the politics of pharmacy, but have hitherto said but little on the so-called "Widows' Clause," not because it is wanting in importance, but because it is wanting in any clear and definite principle.

Before the passing of the Act of 1863, our late friend H. B. Brady and I discussed the "pros" and "cons." of the subject; the obvious inconsistency of claiming that, for public safety, only a qualified man should be allowed to own a pharmacy and then providing that an unqualified woman should be allowed to do so. While we agreed that we would not oppose the suggested modification of Clause 16, intended for the good of the widow and the fatherless, it was with the feeling that the proposal in their favour was a doing of evil that good might come. But we had an impression that the wording would be such as to allow only a limited period which might be necessary for winding up the estate. Had the Clause provided so much and no more, I still think it would have been workable and beneficial, though not strictly logical. When the Bill was in prospect of passing in the form in which it now stands, it would not have been prudent to urge any change, as division on the point would have imperilled the passage of the whole. So the Clause was accepted, in hope rather than in confidence, and many times since that, our Council tells us, it has found the power conferred on trustees has taken away the force of its arguments in favour of the qualification being a necessity for ownership. It opened the way to other owners not being qualified and not being punishable, so long as the conduct of the business was in the hands of a qualified assistant. If this is really the experience of those who have had to interview members of the Government on the subject of restricting the practice of pharmacy to the pharmacist, it should carry more weight with the body of pharmacists than any number of letters from individuals who say they know cases where the loss of the trustees' powers would be a hardship. But death is a hardship which must be endured. Without presuming to have more right than any other M.P.S. of long experience to have my views regarded, I now suggest that if the operation of the Pharmacy Act has been injured by the power conferred upon trustees, it is certainly time that this point was amended, and I say this with the less hesitation as I think it often happens that giving the chemist's widow longer time than twelve months, to retrieve her loss so far as may be possible, is like giving her rope enough to hang herself. If ever pharmacy becomes a profession, it will become impossible for the pharmacist to leave his professional connection to his widow. The lawyer, the doctor, the parson, the artist, the consulting engineer or electrician may all have valuable connections, but cannot leave them to their widows. They die, their incomes practically die with them. They may protect their widows by living within their incomes and insuring their lives, and I see no reason why pharmacists should not depend upon that exercise of prudence.

The grocer or draper may leave his business to his widow, and that may be to her advantage if she is qualified to carry it on; but so may a chemist. If the widow is qualified to carry it on she can do so, and if not she has the power of selling it at its market value, which is pretty certain to be greater immediately after her husband's death than later. If pharmacists' wives wish for future protection of their interests beyond their power to sell the business, it is always open to them to qualify. The pharmaceutical training requisite for the Minor examination is not beyond their reach, and is probably more easy of acquirement than the commercial training requisite for the successful carrying on of more competitive trades, qualification for which must generally include the judging and the governing of men. I know it may be said that while a woman has her household duties to look after she cannot be expected to go through a course of study; but if she is not equal to that, it is not likely that, as a widow, she would be equal to the successful carrying on of a business with the aid of an assistant. Nor is she likely to judge successfully the qualification and the management of the men to whom the business might be entrusted. Several chemists of my acquaintance have qualified as medical men while they have been supporting their families by their labours as pharmacists. It is not to be supposed that women are so inferior in power that they could not, with the advantages of their husband's help, take up the Minor pharmaceutical degree, and thus, if need be, help him while he lives, and help themselves should he pass away. A woman who is not equal to this is hardly likely to manage a pharmacy to advantage with the help of a qualified assistant after the loss of her husband. The trial to do so has frequently proved disastrous—loss of trade, loss of income, loss of capital, and possibly, at last, an unsaleable wreck of a once paying concern. Advertisements for sale of a business give constant evidence of the general conviction that a business does not yield its best results under a manager. If chemists and their wives pull together in harness, cultivating economies rather than luxuries, they will not fare worse than other tradesmen who put into their business only as much capital and as much energy. The draper probably goes on from year to year adding to the value of his stock. If the chemist does not find equal facilities in that direction, insurance and investments should take up all beyond his necessities till he has provided a safe nucleus capable of growth with little of his attention. Insurance without other investment is not satisfactory unless it covers sickness, accident, and old age, as these may make as severe a demand upon resources as death itself; but a small sum paid in insurance, and twice as much invested at compound interest, will in no long time produce such an addition to the sale price of the pharmacy as should put the chemist's widow in as good a position as the grocer's or draper's on the one hand, or as the lawyer's or doctor's on the other.

The anxiety which some correspondents show to retain the unlimited form of the "Widows' Clause" has much the appearance of desiring to be saved from the necessity of exercising the energy, the judgment, prudence, and self-sacrifice which are elements of success in pharmacy as much as in common trades. The more value comes into a business from the personal influence of the proprietor, while living, the more goes out at his death. That cannot be helped, but it is the point which should be covered by insurance. If the widow has faculty for business but not for pharmacy, she would do better to sell that for which she is not qualified and buy a business for the personal management of which she is fitted. I do not care to say much about individual cases, though I could quote several in which the pharmacist has been greatly helped by his wife; one noble example where the pharmacist broke down in health and trade, the wife worked for him and the family, carrying on and thriving in a business for which she was suited, in a neighbourhood where it was wanted. Laws must be made to fit the multitude, and though this can scarcely be done without pressing hardly on a few exceptional cases, we must not suppose that the general run of pharmacists' wives are of the incompetent class, or that the unfortunate are exposed to greater hardships than belong by nature to humanity. Moreover, neighbouring chemists would feel disposed to put a little business in the way of a brother craftsman's widow while she was working outside pharmacy, though they could not be expected to do so if she kept an opposition shop.

THE PUBLIC AND THE PROPOSED PHARMACY BILL.

From a Layman's Point of View.

BY A. G. GARDINER.

So far the discussion of the suggested new Bill has been confined to two of the three parties concerned. The case of the registered pharmacist has been abundantly stated; so have the objections of those interested in unqualified companies; but it seems that the most important entity concerned has been entirely ignored. This question of a new Pharmacy Act is not a trade question entirely. It is not even a trade question primarily. It is, before everything else, a public question: it cannot be settled by appeals to trade interests and trade privileges, although those appeals should of course receive adequate attention. The old Latin tag of our school days told us that "the health of the people was the supreme law," and it is the health of the people, as well as the invasion of professional privileges, which is involved in this matter. It is the public who will benefit or who will suffer by the proposed legislation, and it is for the representatives of the public, in the last resort, to say whether potential legislation shall become actual. The answer of the public depends chiefly upon the merits of the question, ; subsidiarily upon the manner in which it is submitted to them. So far they have but the vaguest conception of the *casus belli*. They understand in a hazy sort of way that there is some fundamental distinction between the drug store of the company and that of the pharmaceutical chemist: though they may patronise the store in a general way it is to the chemist that a natural instinct takes them in the hour of real need. But as to the rights and wrongs of the matter they know little and care less. That must be altered. They must be made to see that the question is not one of mere trade, but one which concerns them vitally: one in which they must look after their own interests.

In saying this I do not mean to suggest that the public, if consulted, will be indifferent to the trade aspects of the case. On the contrary, my experience is that disinterested opinion, whenever it is aroused, is amazed at the singular anomaly that exists: astonished at the meekness with which it has been endured by a profession sufficiently powerful, one would have thought, to have long since set the heather ablaze. The surprise expressed by the Lord Chancellor last year, at the discovery that what is law for the individual is not law for the company, may be taken as the almost universal view of laymen brought for the first time in contact with the facts. It may be said of the public as the Rugby boy said of Dr. Temple, "He is a beast, but he is a just beast." The public has no love for tricks and evasions: it hates laws which permit the passage of a carriage and four through them. If such a preposterous condition of things as at present exists in the drug trade were submitted for decision, the public would deal with it as common-sense and common justice dictate, even though its own interests suffered in consequence. The facts of the case, as they stand, are so glaringly in favour of the registered chemist's position that it is difficult to see what can be said on the other side. A man before entering the profession spends time and money in mastering its details in order to pass severe examination tests, and then discovers that while he has been painfully fighting his way by the legitimate path into the fold, another, who has simply leaped over the wall, aided and protected by the law, is enabled to fight him on equal terms or, rather, on terms which actually favour the unqualified man. That this is a gross injustice is too obvious to need emphasising. To first insist on a qualification and then to make that qualification practically worthless, sounds like a practical joke; but it is a practical joke which has been in operation a good many years and, if allowed to continue, may in time make the qualified chemist, if not as extinct as the dodo, at any rate a very rare article, kept to adorn the preserves of limited liability companies.

The whole point, it seems to me, is, Where should the qualification rest? In the case of other professions, there is no doubt on this subject. The lawyers' qualification must be vested in the members of the firm. The firm, it is true, may employ qualified assistants, but the assistants' qualifications cannot cover the absence of qualification in the principals. What should we say to a firm of lawyers consisting of tinkers, tailors, and candlestick makers, all sublimely ignorant of legal lore; all dependent for their qualification upon a clerk in their employ, who might be with them one day and gone the next; who by the very necessities of the case would be without the sense of responsibility which must govern the action of every properly qualified head of a firm? The idea is Gilbertian in its absurdity, yet that is the idea which is crystallised into fact in connection with the practice of pharmacy. It is impossible to imagine that, when confronted with this fact, Parliament will permit its continuance for a day longer than is necessary. It must make the qualification apply to the responsible head, not to the irresponsible employé. It actually does that at present in the case of the individual. It is only when one incompetent man is multiplied into seven incompetent men calling themselves a company, that the unqualified individual becomes independent of qualification, and enabled to snap his fingers at the obvious intention of the law.

But while the public will not be indifferent to the trade aspects of the case, they will, as I have indicated, be even more concerned by the fact that the issue very vitally affects themselves. Will the proposed Bill be a source of loss or a source of gain to them? Certain objections have been raised which are sure to be made the utmost of by the wealthy corporations who are interested in preserving the *status quo*. The case of the grocer and the Epsom salts; the case of the village unequal to sustaining the luxury of a qualified chemist and dependent upon the village grocer for its medicaments, have been already urged; they will, of course, have to be met. But once the broad issue is conceded, details of that sort will settle themselves naturally. The medical qualification is not rendered null and void simply because every village cannot afford such an expensive accessory as an M.D. Again, there is the assumed question of monopoly. The public will need to be convinced that this movement is not designed to protect a trade from legitimate competition and to appreciate prices. Personally, I do not see how such an object can be in view, since the trade is by no means restricted in its membership, but is open at present to all who submit to the statutory conditions under which it is to be carried on, to legitimate competition, as well as to much that is illegitimate. The tendency of to day in every department of life is to reduction of prices: it is impossible to imagine that general tendency would be departed from in this case as the result of the concession of an act of justice to the pharmacist.

On the other hand, it seems that the public would certainly benefit by the transference of responsibility from the assistant to the head of the firm. The chemist's calling, dealing as it often does with questions of life and death, needs—like other callings which have in them the elements of danger to the public—to be placed under rigid control. That fact is, of course, recognised in the existing qualification; but it must be obvious that the value of that safeguard is immeasurably diminished when unqualified proprietors can transfer the onus to their qualified assistant. It is not in human nature that the employé should

be animated by that sense of restraint and responsibility which actuates the employer. His business is to push trade, not to consider the reputation of the firm or the safety of the public. He will serve out deadly poisons with an irresponsible carelessness which would be ruinous to the private trader, but which he knows is fraught with no evil consequences so far as he or his shareholders are concerned. The case of the chemist acting on his own account is entirely different. With him reputation is as important as with the banker or the doctor. He knows that one slip, one act of incaution, may be fatal to him as a reputable business man, and the chief safeguard of the public consists in that knowledge. It is that safeguard which the existing operation of the law renders in a large measure inoperative: that is the safeguard which the proposed legislation would effectively restore.

There is another important gain to the public which would indirectly result from the adoption of the measure. One of the crying evils of the day is the multiplication of injurious quack remedies which are boomed by lavish advertising and thrust upon the ignorant public without regard to their health or interests. The company, with its unqualified proprietors and shareholders, concerned only about the question of dividend, fosters and accentuates that evil. If the sale of drugs and quack remedies were left to the registered chemist—if, in short, pharmacy were the province of the pharmacist, instead of being the happy hunting-ground of any pretender who sees money in it, the quack nostrum evil would be appreciably diminished. No responsible and qualified business man, of whom a good name is the most valuable asset, would, for the sake of a trifling present advantage, deliberately endanger his good name by cultivating the sale of articles which his scientific knowledge assures him will do harm to his customers and not good. In that respect also the passage of a Bill embodying the Council's suggestions would involve a very real and lasting benefit to the public. Looking at the question as a whole, and purely from the point of view of the general community, there can, I think, be nothing but good as the outcome of the proposed legislation.

MICROSCOPICAL NOTES.

Simple and Rapid Method for Detecting Tubercle Bacill in Fluids.—E. W. Hammond (*Montreal Med. Journ.*, 27, 507) recommends the following method for detecting tubercle bacilli in milk and other fluids: —5 per cent. of crystallised phenol are first added to 15 C.c. of the liquid, which is then revolved in a centrifuge for 15 minutes and the supernatant fluid poured off; the precipitated débris which contains the bacilli is then treated with 3 C.c. of a 5 per cent. solution of caustic potash, mixed up thoroughly by shaking and then left for two or three minutes. The tube is again filled to 15 C.c. with water and revolved in the centrifuge for 20 minutes; the supernatant liquor is again poured off, and the sedimentary matter examined at once for the typical bacilli. The alkaline solution completely saponifies and removes the fat, so that the use of ether is not necessary. The author claims that this method is more delicate and affords a more sure diagnosis of the presence of tubercle than inoculation.—*Mod. Med.*, 7, 266.

Chromic and Nitric Acid for Destroying Pigment.—Dark pigmented animal tissue has generally to be decolorised before microscopical examination. As a substitute for the chromic acid and potassium bichromate solution generally used for this purpose, which takes months to act, Zander obtains the desired result in forty-eight hours by soaking the sections in a fluid composed of 70 parts of 10 per cent. solution of chromic acid, 3 parts of nitric acid, and 200 parts of water.—*Chem. Zeit. Rep.*, 22, 295, after *Zeitschr. Wissenschaft. Mikroskop.*

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, MARCH 1, 1899.

Present:

Mr. Walter Hills, President.

Mr. G. T. W. Newsholme, Vice-President.

Messrs. Allen, Atkins, Bateson, Bottle, Carteighe, Corder, Cross, Grose, Harrington, Harrison, Johnston, Savory, Southall, Storrar, Symes, Warren, and Young.

The President said that, before commencing the proceedings, he had to apologise for the absence of the Secretary, who was too unwell to be present. He was sure that the good wishes of the Council would go with the Secretary, and that all would hope that he might soon be restored to health.

The minutes of the previous meeting were then read and confirmed.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Abel, Peter Alexander; Inverurie
Addis, Thomas Joseph; Wimborne
Alexander, George; Liverpool
Anderson, George William; Hull
Anderson, James Grant; Edinburgh
Anderson, John; Dundee
Armitt, Arthur; Northampton
Asheroft, Alfred William; Blackpool
Ashley, William; Derby
Atkins, William Sanders; Birmingham
Atkinson, James; Bromley
Atmore, Edward Alfred; King's Lynn
Attenborough, Henry R.; Droylsden
Baker Henry Whitmore; Maida Vale
Balfré, Juan Morday; Chelsea
Banbury, Richard; Walworth
Barker, John Brydon; West Hartlepool
Barlow, Frederick; Birmingham
Baron, Richard Edward; Walham Green
Barrow, Edward; Kirkstall
Bates, William; London
Battle, Ernest William C.; Lincoln
Battle, John Cyril M.; W. Kensington
Beattie, Edward; Derby
Beavan, Henry T.; Prudhoe-on-Tyne
Bell, Francis E.; Newcastle on-Tyne
Bell, James; Leith
Bell, Joseph; Manchester
Bell, William Edward; Leeds
Bettle, Joseph Alfred; Upper Tooting
Bird, Frederick Charles J.; Notting Hill
Bishop, John Henry; London
Blabey, John James; Woolton
Blayney, William Cowan; Chertsey
Blott, Hugh Russell; Lichfield
Blunt, Walter Arthur; Shrewsbury
Boad, Alfred; New Quay
Boon, Nathaniel; Kirton-in-Lindsey
Boor, Jonathan; Manchester
Booth, George Henry W.; Alfreton
Bostock, Thomas Henry; Eastwood
Bosustow, Frederick S. M.; Chiswick
Bowden, William; Wimbledon
Boyden, John Augustus C.; Pocklington
Breeze, John Albert E.; Birkenhead
Brett, Thornton Pocklington; London
Brisley, George; Bexhill
Brook, Edward; Whitefield
Brooks, Joseph; Manchester
Broome, Bertie; Woodford
Brown, Robert Ebonezer; Brighton
Brownbill, Edward; Leeds
Browning, Kate Emma; Weymouth
Bunting, Sydney; Clapham
Burbank, Thomas John A. R; Oxford
Burleigh, William Milner; London
Burrows, Frank; Kimberley
Bush, Thomas; Paulton
Butlin, James Franklin; Burnley
Cadman, Charles Thomas; Blackheath
Campsall, Arthur Wright; Parkgate
Carlton, Thomas Wokes; E. Finchley
Carpenter; Edmund; Bristol
Carruthers, William; Workington
Carson, Robert; Bradford
Chapman, Alex. S. B.; Walthamstow
Chapman, Frank; Hyde Park
Chapman, John William; Scarborough
Charlesworth, Moorhouse; Saltaire
Chatterton, Benjamin; Southborough
Clarke, Thomas Ward; Hereford
Clarke, William Henry; Plumstead
Clarkson, Newton; Richmond
Cockburn. Charles Taylor; Glasgow
Coles, Sydney George R.; Stockwell
Collius, Henry; Denton
Comyns, Joseph R.; Luddendenfoot
Connor, Thomas Haigh; Doncaster
Cook, Arthur C. C.; Peterborough
Cook, William; Runcorn
Cooke, William A.; Newport Pagnell
Corbett, William; Charford
Corfe, Alfred; Maidstone
Cornick, Ernest Edward; Kennington
Cornish, John R.; South Tottenham
Cory, James Thomas Haines; London
Costerton, Horace Arthur; Brighton
Coulter, Charles; Wood Green
Coutts, John; Glasgow
Cowap, John William; Winsford
Coward, Miles; Devizes
Craven, Frederick; Pontefract
Creasser, Matthew; Aldbrough
Crompton, Henry; Bury
Crooke, Charles Gibbins; Bromsgrove
Crookham, Harry; Southend-on-Sea
Crozier, Robert; Lytham
Cruickshank, William; Fraserburgh
Curtis, George; Chiswick
Cutmore, Frank; Torquay
Dack, Knights; East Ham
Darling, Robert; Blyth
Darroll, George; Cape Town
Davenport, Richard C; Bromley
Davidson, George Graham; London
Davies, David; London
Davies, David Arthur; Rhymney
Davies, Hugh; Machynlleth
Davis, Charles; Liverpool
Davis, Henry John; Newbury
Dowing, Charles; Grimsby
Dixon, Charles Robert; Sowerby Bridge
Dodd, Henry Vincent; Stamford Hill
Dolman, Thomas Tustin; Cheltenham
Doughty, Thomas; London
Douthwaite, Henry L.; London
Dunlop, Irvine Carlyle S.; Eaglesfield
Dunn, Thomas; Selkirk
Dunsire, Robert; Birkenhead
Durrant, George Stuart; Hertford
Edgar, William Ernest; Douglas
Edmonds, William Clarke; Rotherham
Edwards, Daniel; London
Edwards, Lewis; Llangollen
Edwards, William R.; Market Deeping
Ellis, Frederic Richard; Bristol
Ellis, William Neale; London
Elston, William Alfred; London
Emerson, Richard William J.; London
Escritt, Harold Teal; Streatham

Evans, Arthur Edward ; Trowbridge
Evans, Daniel Ogilvie ; Ashburton
Evans, Frederick James ; Manchester
Evans, John James ; Liverpool
Evans, Roderick ; Lampeter
Fairburn, Thomas White ; London
Fairhurst, William Pennington ; Wigan
Fardon, Arthur Edwin ; Bristol
Featherstone, Robert Horne ; Tunstall
Fell, James ; Preston
Fieldsend, John F. ; Manchester
Fitt, Cyril Herbert C ; Norwich
Fitzgerald, Anthony Hudson ; Hornsey
Ford, Betsy ; Edinburgh
Ford, James ; Kirriemuir
Forster, William Day ; Street (Somt.)
Fothergill, Simon ; Liverpool
France, Joseph ; Rotherham
Francis, Arthur Llewellyn ; Wrexham
Frank, John William ; Guisborough
Fraser, James ; Bombay
Freeman, John ; Birmingham
Fry, William Cattle ; Taunton
Fryer, John ; Uppermill
Fulleylove, George Ernest ; Portland
Gaitskell, James ; Gosforth
Galt, Thomas James ; Blackheath
Gardner, Robert ; Inverkeithing
Garnett, James ; Ringwood
Geldart, John ; Liverpool
George, Alfred Walter ; Brondesbury
Gibson, Harry ; Llandudno
Gilbert, Joseph Anthony ; Manchester
Goddard, Enoch William ; Sneinton
Goddard, J. G. J. ; Barrow-in-Furness
Goff, Richard ; London
Goldthorpe, Arthur ; Plumstead
Goodwin, E. H. ; King Williams Town
Gordon, John ; Bradford
Gorton, Albert George ; Whitechapel
Gorton, Charles ; Whitechapel
Gostling, Ernest ; Finchley
Gough, Ernest William ; London
Graham, Gilbert ; Girvan
Graham, Margaret T. ; Lochgelly
Gray, John Henderson ; Liverpool
Grayson, Charles ; Hartlepool
Green, Charles B. P. ; Bermondsey
Gregory, John James ; Romiley
Griffith, Richard W. S. ; Lyndhurst
Griffiths, Edward ; Liscard
Gutteridge, George N ; Dewsbury
Guy, Edwin ; Hereford
Gwilliam, John Everall ; Bath
Hall, Arthur William ; Fulham
Hallett, William John ; Bristol
Hamer, Joseph ; Bolton
Hampton, Peter ; Cannes
Hands, Henry J. ; Chipping Campden
Hannah, John ; Abergele
Hardcastle, William ; Stockton-on-Tees
Harding, Edward ; Manchester
Hardman, James C. ; S Kensington
Hardy, Thomas ; Maryport
Harries, Charles Albert ; Aberdare
Harries, David ; Cardiff
Harris, Frank Howard ; London
Harris, Robert ; Crickhowell
Harrison, James Hughes ; Sheffield
Haslop, George ; Oldham
Hatch, James Oliver ; Manchester
Hawksworth, John Lewis ; Daventry
Hayllar, James ; Hoddesdon
Heap, John Henry ; Forest Hill
Heath, Edward Alfred ; London
Heath, William ; Derby
Heaton, George ; Ripley
Hensby, Robert Place ; Wellington
Hicks, Alexander D. ; Bethnal Green
Hider, Francis ; Forest Gate
Hillidge, George ; Preston
Hodges, Edwin Goodall ; Liverpool
Hodgson, John Birtwell ; Ripley
Hogley, Percy ; Grantham
Holdsworth, Frederick H. ; Longley
Hollick, Richard ; Birmingham
Holman, Henry ; Silverton
Holt, John ; Yarm
Homer, Absalom ; Bedworth
Hooper, Joseph ; Peckham
Hooper, William Henry ; Peckham
Horrell, William Harry D. ; Rye
Huey, William Richard ; Malvern
Hughes, Hugh Jones ; Liverpool
Hughes, James ; Bognor
Hughes, Richard David ; Denbigh
Hughes, William D. ; Hammersmith
Hyde, Charles ; Stalybridge
Illsley, Thomas B. ; Barnard Castle
Innes, James ; Dunblane
Jackson, Alfred ; Widnes
Jackson, George ; Leeds
Jackson, William Frazer ; London
James, Joseph ; Tottenham
Jaques, W. ; Washington (co. Durham)
Jenkins, John Lewis ; Haverfordwest
Jennor, Percy Greenwood ; Liverpool
Jennings, John Atkinson ; London
Jones, Sidney Clifford ; Camberwell
Kay, Charles William ; Leeds
Keall, Frederick Peard ; Swansea
Ker, William ; Stranraer
Kerrison, Albert Joseph ; Preston
Kershaw, Edward ; Alderley Edge
Kilner, Frederick James ; Bristol
Knowles, John Thomas ; Ingleton
Knowles, Richard ; Minories
Lane, Edward Wokefield ; Nottingham
Lawton, Adam ; Halesowen
Leech, Robert ; Manchester
Le Fèvre, William ; Harrold
Legg, Harold Beaumont ; Norwood
Leith, Peter ; Rothesay
Lindsay, George William ; Camberwell
Lister, William Benjamin ; Hornsey
Lloyd, Hugh William ; Bala
Lloyd, John Wesley ; Liverpool
Lochhead, Alexander Russell ; Glasgow
Lord, John Edward ; Rawtenstall
Lord, Robert Booth ; Royton
Lovegrove, Wallis Sheffield ; London
Lowe, Osmond Henry ; Wolverhampton
Lunn, Thomas ; Worcester
McCallum, Alexander I. ; Edinburgh
Maccormac, Thomas Campbell ; York
McDonald, James ; Mossat
Macdonald, John ; Liverpool
McFadzean, John ; Plymouth
MacKinlay, Frederick James ; Liverpool
Maclean, James ; Stony Stratford
McNaughton, James ; Glasgow
McNiven, James ; Falkirk
March, Richard ; Stamford
Marris, Thomas ; Worksop
Marsh, Frederick William ; Dulwich
Marten, John Reed ; Brighton
Martin, Henry Stephen ; E. Grinstead
Mason, Frederic Silvester ; Paris
Mason, Michael ; Wirksworth
Matson, Joseph ; Capo Town
Matthews, John George ; Brighton
Meadowcroft, James ; Bury
Merrett, Edward Lionel ; Henfield
Michie, Alexander ; Glasgow
Middleton-Taylor, H. ; Middlesbrough
Milne, James ; Brixton
Molson, Algernon Heanley ; Spalding
Moore, John ; Birstall
Moore, John Edward Langford ; London
Mosley, William Francis ; Barnsley
Moss, Frank ; Bristol
Munn, Charles Henry ; Stourport
Myers, Gabriel ; Welton
Naylor, Edward Alfred ; Tranmere
Neale, Benjamin T M. ; Sherston Magna
Needham, Richard ; Stalybridge
Nelmes, George ; Liverpool
Newton, Thomas F. ; Chester-le-Street
Nicholls, Charles ; Langport
Nicol, William ; Glasgow
Norton, Charles Benjamin S. ; Bristol
Nunn, Ernest Albert ; Coventry
Oldfield, William ; Denton
Oliver, Henry C. H. ; West Malling
Parlby, Henry Hugh ; Swansea
Parry, Joseph ; Kilburn
Parry, Lewis ; Wrexham
Parsons, Henry Imber ; Axminster
Pashler, William Ingram ; Cambridge
Pass, William Hall ; Macclesfield
Patchett, John ; Halifax
Patridge, William Ford ; Liverpool
Pearmund, George Edgar ; Richmond
Peirson, Herbert Sidney ; Liverpool
Pembleton, Frederick Paul ; Derby
Penberthy, Henry Broad ; Sidmouth
Pennock, John Purvis ; Tooting
Perkin, Thomas ; Tamworth
Phillips, James Arthur ; Minories
Pickles, Luke ; Wokingham
Pigg, Joseph ; Newcastle-on-Tyne
Plowman, Charles W. ; Middlesboro
Plowright, Alfred ; London
Potts, Charles ; Ilkeston
Potts, George ; Cleckheaton
Powell, William ; Leeds
Pratt, Charles Percy ; Warwick
Prince, John ; Connah's Quay
Prosser, Thomas W. ; Newcastle-on-T.
Rallng, Ernest Lewis ; Cape Town
Ransford, William ; Folkestone
Reade, Joseph George Edward ; London
Readman, Edward James ; Derby
Reeves, Horace ; Cheltenham
Reid, Alexander ; Glasgow
Retallack, William Cyrus ; Devonport
Richards, Arthur ; Llandovery
Richardson, Edwin ; Bayswater
Ridgway, Thomas Eyton ; Bootle
Ripley, Edward ; St. Leonards-on-Sea
Ritson, Fletcher ; Carlisle
Roberts, Robert Jones ; Towyn
Roberts, Robert Randall ; Chester
Roberts, Walter ; Stockport
Roberts, William ; Beaumaris
Roberts, William Carry ; Llansilin
Robin, Hugh Millar ; Gorebridge
Robinson, John Newton ; Redcar
Robinson, Joseph ; Coventry
Robinson, Thomas Ward ; Hull
Robison, Ebenezer ; Stockport
Rodwell, Henry ; Glasgow
Rolfe, John Thurlow T. ; Wymondham
Roper, Henry Alfred ; Plymouth
Rose, Francis W. ; Chipping Norton
Rose, Joseph Gandy ; Urmston
Round, William H. ; Thornaby-on-Tees
Rowland, Edward E. ; Windsor
Rowland, Sidney C. ; Whitchurch
Rutter, Clement T. ; London
Salter, Thomas ; Bradninch
Sandell, John Tyack ; Norwood
Saxby, Austin Clare ; Cheltenham
Senior, Joseph ; Eastbourne
Sewell, James Walker ; Hampstead
Sexton, William Frederick ; Blackpool
Shackleton, George W. ; Abergavenny
Shacklock, Joshua Henry ; Nottingham
Sherlock, Thomas ; St. Helens
Simcock, James Sprent ; London
Simpson, Henry David ; Louth
Sims, William James ; Portsmouth
Sinclair, James ; Berwick-on-Tweed
Sinclair, Neil Crawford ; Woolwich
Sinclair, William Austin ; Hampstead
Skewes, Josiah ; Islington
Skinner, Alfred James Page ; Colyton
Skinner, Michael Hill ; Keelby
Slack, Josiah William ; Notting Hill
Slingsby, Charles Schofield ; Hindley
Small, James Cuthbert ; Perth
Smiles, James ; Edinburgh
Smith, Charles William ; Cirencester
Smith David ; Stroud
Smith, Edward ; Horsham
Smith, H. E. L. ; Loftus-in-Cleveland
Smith, Henry Llewellyn ; Scarborough
Smith, John ; Alexandria
Smith, John James ; South Ashford
Smith, Sidney ; Wordsley
Smith, William Vernon ; Liverpool
Sneath, Thomas Dixon ; Grimsby
Snow, Leonard Hardy ; Brixton
Solomon, William Henry ; Falmouth
Sparshott, Harry ; Birmingham
Spencer, William Byron ; Kilburn
Sproston Francis John ; Bowes Park
Stacey, Wilson ; Holborn
Stangroom, Alfred ; Whissonsett
Stanton, Frank Leonard ; Brecon
Steeds, Frederick George ; Dorking
Stephenson, James ; Nottingham
Stevenson, James Muir ; Ardishaig
Stothert, Richard ; Atherton
Stratford, Alfred Joseph ; Manchester
Sutcliffe, Isaac ; Buxton
Sutherland, James John ; Leith
Swaffin, John Phillips ; London
Swift, Charles Edward ; Birmingham
Swift, Herbert Henry ; Oxford
Swindle, Norman Vickers ; Keswick
Symonds, James Alfred ; Ipswich
Tapp, Charles ; Wimbledon
Taylor, George ; Liverpool
Taylor, Herbert ; Liverpool
Taylor, William Gee ; Hungerford
Tharratt, George Row ; Liverpool
Thom, John ; Forest Gate
Thomas, Dan ; Cardiff
Thomas, Edward ; Chester
Thompson, Henry John ; London
Thompson, Isaac Cooke ; Liverpool
Thomson, William ; Glasgow
Thwaits, George Rose ; London
Tibbits, James Reginald ; Lancaster
Tomlin, Ellis ; Leeds
Townley, Thomas ; Tarporley
Townson, William ; Liverpool
Vasey, Frederick William ; Reading
Venning, William ; Hounslow
Vinden, Frederick William ; Exeter
Waddingham, George Albert ; Batley
Waddington, Frederick P. ; Bradford
Wain, William Spensley ; Ripley
Walker, Joseph ; West Kirby
Walker, William Grayston ; Burnley
Warburton, Walter ; Hereford
Ward, Richard Smith ; East Retford
Warren, Frederick ; Chelmsford
Waterston, James Albert ; Tipton
Watson, Edward ; Beccles
Watts, John ; Dudley Hill
Weatherley, William R. ; Nottingham
Weir, William ; Glasgow
Wellburn, John Samuel ; Clapton
Wells, Robert Joseph ; Birmingham
West, Joseph Arthur ; Blackheath
West, William Curtis ; Brixton
Whiston, Edmund ; Bath
Whitcombe, Charles ; Petersfield
White, George ; Dudley
White, Nathaniel S. ; Earl Shilton
White, Thomas ; Liverpool
Whitehead, John Henry ; Walsall Wood
Whitelam, John Herbert ; Hull
Whitworth, John ; Nottingham
Wild, Thomas Jabez ; Peckham
Wilde, Francis ; S. Kensington
Wilkie, Herbert F ; Edinburgh
Wilkins, William Robert ; Llanrwst
Wilkinson, Benjamin John ; Kingsland
Wilkinson, Henry Albert ; Worksop
Wilkinson, John Horsley ; Colne
Williams, Howel Bennett ; Hereford
Williams, James ; Poplar
Williams, James ; Walsall
Williams, James Boden ; Manchester
Williams, John L. ; New Buckenham
Williams, William Jones ; Holloway
Williamson, David ; Laxey, I.M.
Wilson, John Anderton ; Chorley
Wilson, Robert Webster ; Leeds
Winstanley, Thomas Harrison ; Wigan
Wood, George Edward ; Manchester
Wood, Henry ; Tiverton
Wood, James ; Ilkeston
Wood, John William ; Wandsworth
Woodward, John Thompson ; Byculla
Woolley, George John B. ; Leicester
Wright, Robert Edwin ; London
Young, Herbert E. ; High Wycombe
Yoxall, Henry ; Belfast

Election of Student-Associates.

The following having passed the First Examination and tendered their subscriptions for the current year were elected Student-Associates of the Society :—

Addison, Jeremiah ; Morecambe Bay
Aldridge, Claude Augustus ; Bristol
Arnold, William Robert B. ; Exeter
Bell, William Austin ; Bridgnorth
Carrington, Harold G. ; Stockport
Cross, William G., jun. ; Shrewsbury
Davies, Henry Ford ; Penarth
Duffield, Francis A. ; Sutton Coldfield
Dunsmore, William ; Paisley
England, Thomas ; Scarborough
Evans, Evan ; Southampton
Gaman, Alfred John ; Swansea
Gordon, Salomon ; Manchester
Haigh, Harold William ; Meltham
Hall, William Douglas ; Skegness
Hardern, Ernest ; Barrow-in-Furness
Hattersley, Hugh ; Bradford
Huggins, Robert Henry ; Wainfleet
Hurn, William Henry ; Norwich
Jennens, John Harry ; Birmingham
Judge, Percy Procter ; Newark-on-Trent
Lawson, John ; Leeds
Lowis, Edward Day ; London
Madgshon, Flora Curle ; Edinburgh
Mitchell, William Dunbar ; Annan
Newby, Frank ; Oldham
Pace, Lewis ; London
Philip, Charles ; Aberdeen
Pinchen, Colin George ; Kilburn
Rainford, George ; Chorley
Robinson, John E. ; Stone
Rowe, John Joseph ; Salisbury
Scarth, Arthur Gilead ; Morley
Schneider, Edward Paul ; London
Small, Sydney Herbert ; Barnsbury
Snell, James Stanley ; Accrington
Spencer, Herbert Edgar ; Edinburgh
Spurge, Herbert Stanley ; Witham
Watkins, Thomas Bevan ; Croydon
Watling, George Victor ; London
Williams, Tudor G. ; Cefn
Wilson, Walter Foale ; Downham

Restorations to the Register.

The names of the following persons, who have made the required declarations and each paid a fine of one guinea, were restored to the Register of Chemists and Druggists :—

William Davie Ground, Eastwood, Notts.
Waddelow Chambers Harris, 76, New Cut, Lambeth, S.E.
Archibald James Millar, 61, Stepney Green, E.

Several persons were restored to their former status in the Society.

Poison Regulations.

The President read a letter which had been received from the Privy Council Office, dated February 3 last (see *ante*, p. 128), approving the regulations which had been passed by the Society for the keeping, selling, and dispensing of poisons.

Finance Committee.

The President, in moving the adoption of the report of this Committee, which recommended various accounts for payment, said there was nothing unusual in either receipts or payments, except that there was rather a large expenditure on the Journal account arising from the large issue of the last number, which had been sent to every registered chemist and druggist, and advantage had been taken of this issue to publish the poison regulations, which were printed on a separate sheet of paper so that it could be preserved for reference. He had also to mention the receipt of a donation of ten guineas from the Pharmacy Club to the Benevolent Fund, for which they were grateful.

The report was adopted unanimously.

Benevolent Fund Committee.

The Vice-President moved the adoption of the report of this Committee, which included a recommendation of grants amounting to £68 in the following cases :—

A registered chemist and druggist (74), who had a grant last year and is unable to undertake regular employment, owing to rheumatism. (Surbiton.)

The widow of a former associate (55), who has five children depending on her efforts, and who had an unsuccessful season with her lodging-house last year. (Bangor.)

The widow of a chemist and druggist (39), who died in January practically penniless. She has thirteen children, the eldest 20 and the youngest 3, all but three being unable to help. (Liverpool.)

A registered chemist and druggist (82), who had a grant last year. He is a paralytic and practically helpless, and has no relatives to afford adequate help. (Leicester.)

A member and subscriber and former local officer of the Society (71) who can no longer do anything for his own support, and is entirely dependent upon charitable aid. (London.)

One case was deferred for further inquiry, and two cases were not entertained.

Mr. Newsholme said he would only draw attention to the case of one gentleman, who had unfortunately come to grief in later life. That gentleman had for a great number of years taken the liveliest interest, not only in the affairs of the Pharmaceutical Society, but also in the Benevolent Fund. He was well-known to many members of the Council, and in his movements up and down the country he had always had in his mind the Benevolent Fund of the Society. It was a matter of regret that this gentleman should have come to relief, but it showed the great benefit that the Fund was to the Society.

The report was adopted unanimously.

Library, School, and House Committee.

The President moved the adoption of the report of this Committee, which stated that the Librarian had presented his usual report, including the following particulars regarding attendance at the Library :—

Attendance.	Total.	Highest.	Lowest.	Average.
January	398	25	6	15

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
January	172	87	85	18*s.* 1½*d.*

The Committee recommended that the undermentioned books be purchased :—

For the Library in London :—
Scott's Botany, Part II.
Squire's Companion, 17th Edition.
For the Library in Edinburgh :—
Squire's Companion, 17th Edition.

The Curator's report had also been received, and included the following particulars :—

Attendance.	Total.	Highest	Lowest.	Average.
January ..... Day	744	44	18	24

Several donations to the Library and Museum had been received (see *P. J.*, February 11, p. 127), and the Committee had directed that the usual letters of thanks be sent to the respective donors. Mr. Thomas Hanbury had placed at the disposal of the Society further copies of 'Science Papers,' for which the Secretary had been instructed to send him a special letter of thanks. It was recommended that in future the evening meetings be held on the second Tuesdays of February, March, April, November, and December.

The President, said the Council was much indebted to Mr. Thomas Hanbury for a further proof of his interest in the Society. With regard to the evening meetings, it had been thought better to fix the date definitely for the second Tuesday in the month, instead of leaving it, as at present, to follow the Council meeting, when it generally fell on the second Tuesday, but sometimes on the third.

The report was adopted unanimously.

Annual Meeting.

The President moved that the fifty-eighth Annual General Meeting be held on Wednesday, May 17, to receive the report of the Council, and that was agreed to.

Local Secretaries.

The President said it was proposed that Mr. Robert Gledhill (Dewsbury) and Mr. Frank Stanton (Brecon) be appointed local secretaries for their respective districts. There was evidence of a considerable amount of enthusiasm for the work of the Society in the districts of Dewsbury and Heckmondwike. The Council was always glad to appoint those who were considered by their neighbours to be the best representatives for their district.

The Vice-President also thought it was very gratifying to see the interest that was taken in the affairs of the Pharmaceutical Society. At a meeting at Bradford, where he had the pleasure of being last week, he was pleased to find a large number of men were present from all parts of Yorkshire. Dewsbury was particularly well represented, there being as many as ten representatives. He found that the members of the craft were exceedingly pleased at the action the Society took last year in extending the franchise. There was a real living interest now in the Pharmaceutical Society : he hoped they were now at the commencement of much better times and that, in future, the Society would stand better with the country than it has done hitherto.

The President said he had to announce that Mr. Crook, of Eastbourne, who had acted as local secretary for the past eighteen years, was retiring from business and leaving the town, and therefore had to resign his office. He was sure the Council would concur in thanking Mr. Crook for his long and valuable services to the Society.

The suggested appointments and the proposed vote of thanks were unanimously agreed to.

Law and Parliamentary Committee.

The President said this Committee had held a meeting, but there was nothing to report which would be of advantage to publish.

Resolutions from Local Associations.

The President announced that a number of letters had been received from various local associations, enclosing copies of resolutions which had been passed at meetings. The resolutions referred to had been sent by the Liverpool Chemists' Association, the Bournemouth Pharmaceutical Association, the Dewsbury District Chemists' Association, the Exeter Association of Chemists and Druggists, the Midland Chemists' Assistants' Association, the Sunderland Chemists' Association, the Derby and District Chemists' Association, the Midland Pharmaceutical Association, the North Staffordshire and District Association, the Glasgow and West of Scotland Pharmaceutical Association, and the Sheffield Pharmaceutical and Chemical Society. The majority of the resolutions expressed general approval of the suggested draft Pharmacy Bill, but some of them took exception to the proposed alteration of the "Widows' Clause," and several suggested that dispensaries and surgeries should be brought under the provisions of the Pharmacy Act, with regard to the dispensing of poisons. In moving that all those communications be referred to the Law and Parliamentary Committee, he was very glad to see such indications of interest in the affairs of the Society evinced by different local associations. He would only say that the suggestions which had been forwarded to the Lord Chancellor covered great principles, which the Council thought, in the interest of the public, should be recognised in any future legislation affecting pharmacy.

The proposition was agreed to unanimously.

The Chelsea Physic Garden.

The President said a letter had been received from the Charity Commissioners stating that the scheme for the management of the Chelsea Physic Garden became operative on the 21st inst., and reminding the Pharmaceutical Society that under Clause 10 of the scheme the Society was empowered to appoint a representative as a member of the Council. It was satisfactory to find that the Society held such a good position in this scheme, having to appoint a member of the Committee for four years. He would suggest that the matter be referred to the Library and Museum Committee for consideration and report.

Mr. Harrison asked if the appointment had to be made by the Society or by the Council.

The President said the scheme said the Society, but he apprehended in such a case the Council could act for the Society However, the Committee would look into that point.

Dr. Symes pointed out that in the Pharmacy Act itself the word Society was defined to mean the Council, except in the first clause.

After a little further discussion on this point the proposition was agreed to.

Pharmacy in British Guiana.

The President then said that a letter had also been received from Mr. G. H. Hawtayne, C.M.G., Administrator of British Guiana, enclosing a Bill introduced into the Legislature of that colony, and he wished to acknowledge the courtesy of Mr. Hawtayne in sending it. It appeared to be a very thorough Bill, dealing not only with the examination and registration of chemists, the regulation of the practice of pharmacy, and the sale of poisonous or dangerous drugs, but also covering adulteration and the offering for sale of "stale" or spent drugs or medicines. It would exempt chemists from jury service and give power to erase the names of registered persons guilty of unprofessional conduct. The "company" trouble would be avoided by requiring every shop to be in charge of a registered manager, who is to be made directly responsible for the pharmacy; trading in assumed names was to be prohibited, and, in short, the proposed Ordinance would do a variety of things which are considered by some to be very badly wanted in Great Britain. But it also proposes to do a great many things that British pharmacists would regard as somewhat objectionable. For instance, a power of search was to be given to the civil authority, and particular lines of conduct were laid down for dealing with abnormal doses.

General Purposes Committee.

The report of this Committee was read and considered in Committee as usual. On resuming, the recommendations were adopted, and a special resolution was passed authorising the Registrar to take proceedings against the persons named therein.

NOTES ON THE B.P. (1898) GALENICALS.

BY R. GLODE GUYER.

(*Concluded from page 145*).

Syrupus Limonis.—The instructions to clarify the lemon juice by deposition is an impracticable instruction, for, if allowed to stand until clear, the juice will become mouldy, unless some preservative has been added. A simple method of overcoming this trouble is to use the juice without clarification, and add to it the tincture, subsequently percolating the sugar with this menstruum in the American fashion. By this process the use of heat is obviated, and if the percolation be conducted slowly and through flannel a nice bright syrup will be the result.

Syrupus Sennæ.—This new formula is in some respects an unfortunate one. It is an established fact that senna yields all its virtues to water, and the substitution of an alcoholic menstruum was hardly necessary. The process of maceration followed by pressure is a roundabout method for exhausting senna. If the repercolation process had been adopted the subsequent evaporation of the expressed liquor would have been reduced to a minimum. The remarks made in connection with liquor sennæ concentratus are applicable here; but, naturally, care must be taken to avoid any undue loss of spirit by the action of heat. The increased quantity of oil of coriander is unnecessary; it makes the finished article too pungent, and the oil is also liable to separate unless thoroughly incorporated.

Syrupus Zingiberis.—Owing to the deletion of the stronger tincture of ginger, the formulæ for this preparation now contains directions for the production of a strong tincture. The amount of tincture used is slightly increased, otherwise the syrup is practically the same, and might be prepared by diluting 1 oz. of stronger tincture of ginger, B.P., 1885, with syrup to 20 fl. ozs.

Tincturæ.—It will be unnecessary to consider the tinctures at length, for the *modus operandi* is restricted to three processes. The formulæ themselves have undergone a complete revolution, which has taken effect in two directions. The introduction of five different strengths of alcohol, and the deletion of the two classic and unscientific ones, rectified and proof, is one of the important changes. Owing to this innovation, the compilers have had greater freedom in selecting that strength of alcohol which is the most suitable for the requirements of the various drugs. The second important change is that involving readjustment of the strengths of the tinctures. The laborious task which Farr and Wright have so successfully carried out has had much influence upon this section, which is, without doubt, the most complete and scientific in the whole book. The minute instructions appended in each case may perhaps be considered superfluous. To those who never prepare a tincture, and never intend to do so, they are useless, whilst to those who are accustomed to make their own they are in most cases unnecessary. The introduction of the two chief processes applicable to tinctur making, in the

appendix, might have been sufficient except in two or three cases. Out of a total of sixty-seven tinctures only eighteen are ordered to be prepared by one or other of those two processes, without modification; in all the others some deviation has been thought necessary.

Tinctura Aurantii.—The deletion of the old form made from the dried peel and the retention of that but rarely used preparation tinctura aurantii recentis, has caused some surprise, but it is a praiseworthy change, for the aroma and flavour of the present form is infinitely superior to that of the abandoned one.

Tinctura Belladonnæ.—Owing to the fact that this tincture is made from the liquid extract it now can be prepared off-hand when required by simple dilution of the liquid extract. The remarks made in connection with the variableness of extractive value of the liquid extract also apply here, for the colour of this tincture will depend greatly upon the nature of the extract used.

Tinctura Benzoini Composita.—Any uncertainty as to the correct interpretation of the instructions given in the former edition, as to whether the product should measure 20 fl. oz. or be macerated with 20 fl. oz. of rectified spirit, is now set at rest, for the present instructions admit of no doubt.

Tinctura Camphoræ Composita et Tinctura Opii Ammoniata.—Both these tinctures are directed to be prepared with the standardised tincture of opium, and so admit of ready preparation.

Tinctura Chloroformi et Morphinæ Composita.—This new formula produces an article worthy of our craft, which the former syrupy mess was not.

Tinctura Cinchonæ must now be made to a given standard of alkaloid, and it also forms the basis of the compound tincture. Except for this fact the two preparations are similar to the old ones in every way, except that they are now a trifle stronger. Formerly 1 pint of the simple tincture was made to contain the value of 4 ozs. of cinchona bark, but now that it is adjusted to contain 1 per cent. of alkaloids it will be almost impossible to produce 20 ozs. of the tincture from 4 ozs. of bark, considering that it only contains 5 to 6 per cent. of total alkaloids. The product will more nearly measure 18 ozs. than 20 ozs.

Tinctura Digitalis attracts attention because it has not been suffered to undergo any alteration in strength, being still of the strength of 2½ ozs. leaves to each pint, with 60 per cent. alcohol substituted for proof spirit. This conservatism is obviously due to the fact that it is too potent and variable a preparation to be changed, in view of our scanty knowledge of the active principles which it contains, and the difficulties there are in making an accurate determination of them.

Tinctura Guaiaci Ammoniata et Tinctura Valerianæ Ammoniata are now directed to be prepared with an alcoholic ammonia menstruum instead of aromatic spirit of ammonia with oleum myristicæ and oleum limonis. The oils, in the case of tincture guaiaci, are added at the end of the process.

Tinctura Nucis Vomicæ is apt to vary in its degree of colour like tincture of belladonna, as it is prepared from the liquid extract. It is also liable occasionally to develop a dimness on standing awhile, owing to the deposition of fat, especially in cold weather.

Tinctura Rhei Composita.—The omission of the saffron is commendable, as formerly this preparation was overloaded with aromatic adjuncts, besides adding considerably to the cost. The addition of glycerin to the percolate prevents deposition on keeping.

Tinctura Strophanti is prepared from the seeds without previously washing them with ether. The necessity for washing is obviated by the use of a weaker alcohol which, whilst it is capable of exhausting the seeds, scarcely abstracts any of the fixed oil.

Unguenta.—The alterations which are noticeable in this group are very numerous, more so than either the additions or deletions. The definite way in which white soft paraffin is directed to be used is a most distinct advantage to all classes, for the previous conflicting opinions were most perplexing to anyone who was desirous of producing uniformity. The introduction of the decimal system is also advantageous, and will greatly facilitate the impromptu preparation of these galenicals at the dispensing counter.

Unguentum Aquæ Rosæ.—This is not a happy formula, as it requires but little disturbance to separate the rose water. The ointment may, perhaps, be efficient as a toilet preparation, but as a galenical which has to be used as the basis of several other ointments it is certainly not a success. The quantity of rose water is excessive and should be reduced by at least a seventh part, and the proportion of otto slightly increased so as to compensate for the loss of aroma.

Unguentum Capsici is a feeble imitation of a well-known proprietary article. The directions for its preparation are contrary to the principles of the art of pharmacy. The instruction to heat the spermaceti with the powder and oil is unnecessary, and not conducive to the appearance of the finished article. The capsicum powder should be macerated with the oil alone and, after filtration, the spermaceti should be added to the filtrate. This modification produces a much better preparation. Evidently it was the intention to make this a crystalline preparation, but the result is not satisfactory. The addition of white beeswax, and instructions to stir till cold, would have helped to produce a more serviceable preparation.

Unguentum Chrysarobini.—The introduction of chrysarobin, or purified Goa powder, has been the means of making this preparation more definite in its value.

Unguentum Hydrargyri Nitratis.—This historic and famous preparation still offers plenty of scope for investigation. The heating of the oil and lard to 290° F. is somewhat severe treatment, and the addition of the acid solution of mercury at that temperature is open to criticism. From practical experience in working upon fairly large quantities of this ointment I find it is very prone to become a dull brownish-yellow after a lapse of a very short period. Judging from the discussion which took place at Belfast last year it appears that experts are inclined to differ as to the utility of the present process. Apparently those who are likely to make this ointment in small quantities find the formula works fairly well, but those who have to handle larger quantities find it is a troublesome one to use. If this ointment loses its original yellow colour it can be restored in great measure by warming slightly and adding a small quantity of nitric acid. That seems to indicate that loss in colour is probably due to the reduction of the acid nitrate of mercury.

Unguentum Zinci Oleatis.—At first sight this appears to be a somewhat formidabl preparation, but on analysis it resolves tself into two separate operations, first the production of zinc oleo-palmitate and, second, dilution of that preparation with white soft paraffin. The ointment can easily be prepared when required by diluting the normal oleate of zinc with soft paraffin. Soft brown paraffin produces a much brighter looking preparation than the white.

Note.—A few obvious errors were overlooked in revising the proof of some of the notes already published. Thus, in the note on "Extractum Ipecacuanhæ Liquidum" (see p. 143), the word "belladonna" in line seven should read "ipecacuanha," and in the last line of the note on "Spiritus" (see p. 145), "56° F." should read "56 o. p."

REVIEWS AND NOTICES OF BOOKS.

Commercial Organic Analysis (Volume II., Part 1). By A. H. Allen, F.I.C., F.C.S. With revisions and addenda by the author and Henry Leffmann, M.A., M.D. Pp. 387. Price 14*s*. London: J. and A. Churchill. 1899.

A reissue of the earlier volumes of Mr. Allen's work has long been desired, and in this edition the author has been fortunate in obtaining for revisional purposes the assistance of Dr. Henry Leffmann, of Philadelphia, U.S.A. The matter present in the earlier volume has now been distributed into two parts, this part dealing with fats, fixed oils, waxes, glycerin, nitroglycerin, etc., leaving the hydrocarbons and immediate derivatives, including the terpenes, for a subsequent volume. In addition to sectional amendments and extensions, this volume contains much new matter. It now comprises methods for the examination of glycerin, nitroglycerin, dynamite, smokeless powders, wool-fat, and of dègras and cloth oils. An improvement over the earlier edition consists in some hundred pages, as a preliminary to the special part, on the physical and chemical properties and physical constants of the oils and fats, with methods of determination. This general description thus saves needless repetition in the body of the work. As an example of the care taken in revision, it may be stated that the article on soap is extended to thirty-two pages, and contains more detailed information than in the former edition. Many analyses are given of soap, and these would have been more valuable if an expression had been given as to the ratio of the fatty acid to the alkali, which is a factor of more importance in judging of the suitability of a soap for toilet purposes than to be informed that one soap contains so much water and 71·2 per cent. fatty acid and 8·98 per cent. Na_2O, and another soap 20·02 per cent. fatty acid and 3·11 per cent. Na_2O. There is an interesting table of analyses of "Carbolic Acid Soap," and the various results obtained by the author show the necessity of pharmacists examining carbolic soaps, inasmuch as one sample contained only 0·16 per cent. of phenol, and in no case out of seventeen samples examined was the amount of phenol found equal to that claimed by the makers. In the article on glycerin it may be noted that is it hardly correct to say that arsenic in glycerin may often be detected by Reinsch's test, at all events in the case of glycerin of English manufacture, considering that the amount of arsenic in glycerin for general use has been shown (*P.J.* [3], 24, 685) seldom to exceed one part in a million, which can only be detected by a modification of Gutzeit's test.

The different methods for the determination of glycerin are such as obtain in practice, but a word of caution is necessary to those pharmacists who might be desirous of determining the value of a sample of glycerin for the manufacture of nitroglycerin, that the method here described, official as it may be, could not be carried out by a non-expert without a risk of increasing the bills of mortality. The sections on nitroglycerin, dynamite, cholesterin, woolfat, and dègras have been compiled with care, and are full of interest. Now and again the revision by the author is somewhat missed by English readers. Mr. Allen no doubt would have written a more elaborate article on Butter, comparable with that on Milk in Volume IV., lately published, and have submitted a suitable criticism, probably unfavourable, of the B.P. methods dealing with oils and wax, more especially of the B.P. determination of paraffin in beeswax, a method ignored in this work, and of cottonseed oil in olive oil, pointing out that a reduction of the silver nitrate solution is not necessarily an indication of the presence of cottonseed oil. Be that as it may, this issue of Part I. Vol. II. is to be commended to chemists and pharmacists as being a valuable contribution to the new edition of Allen.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—II.

Protozoa.

The phylum Protozoa contains all the unicellular animals. They are simple masses of protoplasm, sometimes wholly granular in character, and sometimes having an internal granular part surrounded by a clear layer, and may occur simply and independent of each other, or in colonies of attached individuals, or in plasmodia of fused cells. They may exist naked, or the protoplasm may secrete a complete coat of chitin (encystment), or a shell (open protective covering) of chitin, lime, silica, or gelatinous matter which cements small particles of sand and other foreign bodies, which may become attached. The phylum is divided into five classes according to the form of the organism, whether amœboid, *i.e.*, simples masses protruding temporary pseudopodia (Rhizopoda), or flagellated, *i.e.*, when part of the cell is produced into one or more long tail-like lashes (Mastigophora), or plasmodial (Mycetozoa), or encysted, spore-forming and parasitic (Sporozoa), or forms where the protoplasm is more clearly differentiated into cortex, cuticle, and medulla, where ingestion and excretion take place always at definite points, and the animal is ciliated, *i.e.*, surrounded by fine minute prolongations of the cortex (Infusoria).

Besides the nucleus or nuclei characteristic of all living cells, the protozoon possesses a peculiar organ called the "contractile vacuole," a clear space within the protoplasm continually contracting and expanding, and generally considered to have some connection with the excretion of useless material. In some forms the vacuoles are numerous.

In the Rhizopoda the cell takes in food at any exposed part of its body, but in the Mastigophora and Infusoria occur forms in which a mouth-like groove and short, gullet-like passage lead into the mass of the protoplasm. Reproduction may take place by binary fission or by spore formation, either with or without conjugation.

Throughout the Protozoa many parasitic forms occur frequently associated with diseases of the higher animals, as *Amœba coli*, a Rhizopod, and *Balantidium coli*, an Infusorian, occurring in forms of dysentery. One class—the Sporozoa—consists entirely of parasites. They are, as a rule, encysted forms, and generally appear in the intestines of various animals. Coccidiidea, an order of this class, are very minute, and infest the cells themselves, even blood corpuscles. To species of this order many diseases are due.

The Sporozoa are all spore-forming organisms, and many young are developed from a single spore.

One order of the Rhizopoda, the Foraminifera, are of peculiar interest, their calcareous shells forming a large portion of the mud in some seas and white chalk deposits of the Cretaceous period. These shells are perforated, and the protoplasm of the organism is protruded through the perforations in attenuated radiating pseudopodia. The shell may be a simple single-chambered one, or it may be complex and many-chambered, caused by the secretion of new shells by protruded masses of protoplasm, which shells remain attached to the parent shell.

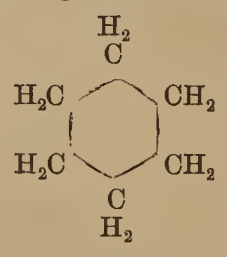
The connection between the unicellular and multicellular groups of animals lies somewhere in the colonial phase of protozoan life. In most cases these colonies consist of attached cells, each leading a physiologically independent existence, but in one or two cases, as *Zoothamnium* (a colonial Infusorian), some cells or zooids are occupied in feeding the colony, and others are engaged in reproduction.

EXPLANATORY NOTES ON THE B.P. 1898.

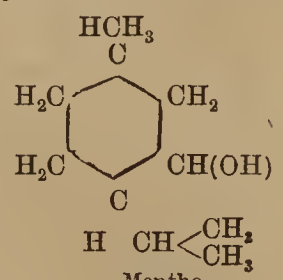
Oleum Juniperi.—This is composed of terpenes and a solid camphor-like body.

Oleum Limonis.—The most important constituent of this is citral or geranial, the aldehyde of the unsaturated fatty acid, geraniol. Another closely allied aldehyde, citronellal, is also present, and possibly traces of esters of the two corresponding alcohols. The bulk of the oil is, however, composed of the terpene limonene. The sp. gr. and optical rotation are good criteria of purity. The fractional distillation test is intended to detect adulteration with turpentine. Pinene, the chief constituent of both French and American turpentines, boils about 20° C. lower than limonene. Hence the pinene, if present, will be contained largely in the first fraction. Now pinene from American turpentine is only slightly dextrorotatory, while that from French turpentine is lævorotatory; the first fraction will, therefore, exhibit a marked deviation from the observed strongly dextrorotation of the original oil in the case of adulteration with turpentine. For terpeneless oil of lemon see Students' Page, *P.J.*, August 28, 1897.

Oleum Menthæ Piperitæ.—The characters and tests now given recognise both English and American oil. Japanese oil, which is the product of a variety of *Mentha arvensis*, is obviously excluded. The Japanese oil is the source of most of the menthol used, and oil from which a part of the menthol has been separated by cooling is sold and known as "dementholised" or "partly dementholised" peppermint oil. Oil of peppermint has been shown to contain a large number of constituents, the most important being menthol, which constitutes, broadly speaking, about 50 per cent. It occurs chiefly as free menthol, but partly also as menthyl acetate and valerianate. The menthol occurring as esters may be determined by saponification with alcoholic potash, while total menthol is found by acetylating the oil and determining the amount of ester formed. A description of these two processes will be found in the previous article on essential oils (*P.J.*, August 28, 1897). Menthol is interesting on account of its behaviour as an alcohol, although it is believed to contain a hydroxyl group linked to a six-carbon closed chain or nucleus. It might therefore be expected to behave like phenols, which are hardly converted into esters by treatment with acetic anhydride. (Compare in your text-book the properties and reactions of alcohols and phenols.) Menthol is, however, regarded as a derivative of hexamethylene, C_6H_{12}: such bodies, as was mentioned last week in describing the terpenes, do not exhibit the behaviour characteristic of true aromatic compounds derived from benzene, C_6H_6. The addition of the six hydrogen atoms or other monovalent atoms or groups has in some way modified the relationship of the six carbon atoms in the hexamethylene ring, so that its derivatives approach in their behaviour to the aliphatic or open-chain compounds. The following formulæ represent what is accepted as the relationship of menthol to hexamethylene.



Hexamethylene.



Mentho

It will be observed that menthol contains the hydroxyl group replacing a hydrogen atom in one of the CH_2 or methylene groups of the hexa-methylene ring, which is sometimes described as a "reduced" benzene nucleus, because it contains more hydrogen. Inspection also shows that menthol is closely related to cymene (para-methyl-isopropyl benzene), into which it may readily be converted. Another constituent of peppermint oil is a ketone corresponding to menthol, and called menthone. It may consequently be converted into menthol by reduction, while menthol may be converted into menthone by oxidation. Japanese oil usually contains much more menthol than English or American, but the value of English oil, due to its finer flavour and aroma, cannot be referred to its percentage of menthol.

Oleum Menthæ Viridis and **Oleum Myristicæ.**—Very little is known of the constituents of these two oils. The physical characters and tests given are those with which oils of known purity are found to comply.

Oleum Pimento.—The chief constituent of this is the phenol, eugenol, which has been already referred to under oil of cloves. The high density of pimento oil is due to this eugenol, and if the specific gravity falls below 1·040, it may be considered that some of the eugenol has been removed or the oil adulterated by the addition of substances having a lower specific gravity than eugenol.

Oleum Pini.—The characteristic constituent of this oil, in addition to several varieties of terpenes, is bornyl acetate, which occurs to the extent of about 5 per cent. Borneol, also known as Borneo camphor, is closely related to ordinary official camphor. Camphor is a ketone probably belonging to the hexamethylene group, and borneol is the corresponding alcohol. Hence, for the reason mentioned under peppermint oil in the case of menthol, borneol easily forms esters, and does not behave like a phenol. Addition of turpentine is detected by the fractional distillation test. When this adulterant is present, a large fraction will be obtained below 165° C., since pinene (the chief constituent of turpentine) boils at 156° C.

Oleum Rosæ.—This consists of two alcohols, geraniol and citronellol, belonging to the olefinic or unsaturated aliphatic series (compare linalool under oleum lavandulæ), and constituting together about 80 per cent. of the oil. Rose oil also contains a solid hydrocarbon, which crystallises out at about 20° C. This hydrocarbon is practically inodorous, and it is not at present known to what the difference between the odour of oil of roses and a mixture of geraniol and citronellol is due. A great deal of Bulgarian rose oil is adulterated with geranium oil. This adulteration is obviously difficult, if not impossible to detect, since geraniol and citronellol also constitute the major portion of geranium oil.

Oleum Rosmarini.—This oil contains pinene, cineol, borneol and bornyl acetate, and camphor. The solubility and rotatory effect described in the Pharmacopœia are intended to exclude adulteration with oil of turpentine.

Oleum Santali.—This consists chiefly of an alcohol called santalol, the proportion of which may be determined by the acetylation and saponification process already described. The official tests refer only to the East Indian oil from *Santalum album*, and exclude both the West Indian and Australian oils, which are obtained from various other species of *Santalum*. These West Indian and Australian oils have a lower specific gravity than the official oil and have, moreover, a dextro-rotatory action on polarised light.

Oleum Sinapis Volatile.—The high gravity of this oil is due to its chief constituent—allyl iso-sulphocyanate, $CH_2{:}CH{\cdot}CH_2{\cdot}NCS$.

Correction.—At page 182, column 1, line 19, for "strychnine" read "emetine."

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THE QUESTION OF TITLE.

In the Leith Depôt case, very briefly referred to last week (see page 184), the problem presented to the judges for solution was, whether the individuals constituting corporations, such as joint-stock companies, are as free from the restrictions imposed by the first fifteen sections of the Pharmacy Act, 1868, as the corporate bodies themselves are assumed to be. The result in the case of the London and Provincial Supply Association, heard seven years earlier, was that, a corporation not being a "person" within the meaning of the Act, that measure failed to prevent corporations consisting of unqualified persons from carrying on the business and assuming the title of a chemist and druggist. Lord Justice Thesiger, however, stated in his judgment in the last-mentioned case that he, at least, was by no means satisfied that the individual members of a corporation might not be liable although the corporation as a separate entity was not liable

Acting on that suggestion, when a suitable opportunity offered, the Council of the Pharmaceutical Society authorised proceedings to be taken against the individual shareholders of the Leith Depôt, Limited, for illegally assuming the title "chemist and druggist" and other offences under the Pharmacy Act, 1868. The action in the Summary Court resulted in the Society's favour: but, on appeal, the High Court of Justiciary found that the decision of the House of Lords, in the case of the London and Provincial Supply Association, covered the case, and that neither as an association nor as individuals, could the shareholders of the Leith Depôt, Limited, be held to have contravened Section 15 of the Pharmacy Act, 1868. That judgment was final, there being no appeal from the High Court of Justiciary, and so far as Scotland, at least, is concerned, the use of the title "chemist and druggist," has since been as free to all corporate bodies as the sale of poisons was previously held to be judicially.

No similar case has ever been brought before the English Courts, though it is far from certain that the result would be the same if such a case were tried. If, however, the title "chemist and druggist" may freely be used by any corporation of unqualified persons, a further question arises as to the titles "pharmacist" and "pharmaceutical chemist," the use of which is restricted by the Pharmacy Act of 1852. Unfortunately, however, the same weak point —the word "person"—is found in Section 12 of the 1852 Act, as in Section 15 of the 1868 Act, and a judgment covering a case under one might not unnaturally be expected to cover a similar case under the other. But in that event nothing whatever may be left to the registered chemist who is the proprietor of a business, beyond his special training and his qualification. Is such a condition of affairs to be tolerated?—if not, what is to prevent registered chemists in Great Britain from sinking all petty differences of opinion and fighting together for their common good? As Mr. Gardiner so clearly points out (see p. 207), it is impossible to imagine that Parliament will permit the continuance of the existing anomalous state of affairs when properly confronted with the facts of the case. The public and their parliamentary representatives only require enlightenment upon the points at issue, and a reform of the law will be inevitable.

THE COUNCIL MEETING.

The proceedings at the meeting last Wednesday were almost exclusively matters of routine. The additions to the membership of the Society amounted to four hundred and eighty-two, and forty-two persons are elected Student-Associates.

Several persons were restored to connection with the Society, and satisfactory evidence is being given that the importance of acquiring that position is obtaining recognition in spite of all hostile influences.

A letter from the Privy Council Office, formally communicating the approval of the poison regulations adopted at the Special General Meeting of the Society last January, was read and entered on the minutes.

The report and recommendations of the Finance Committee were of the usual character, and were adopted without comment.

On the recommendation of the Benevolent Fund Committee, five grants, amounting in all to sixty-eight pounds, were ordered to be paid. One of the cases that had been under consideration by the Committee was referred to by the Vice-President, in moving the adoption of the report, as being of especial interest, as showing the beneficial influence of the Fund, since the applicant was well known to have taken an active part in pharmaceutical affairs, but has at an advanced age met with misfortune.

The President announced that the anniversary meeting is to be held on Wednesday, May 17 next.

The appointment of Mr. Robert Gledhill as local secretary for Dewsbury, and Mr. Frank Stanton for Brecon, gave Mr. Newsholme opportunity to remark that on a recent visit to Bradford he noticed with pleasure the real interest now taken in the Society throughout Yorkshire, and the promise it gave of better times in the future.

ANNOTATIONS.

The Sale of Food and Drugs is dealt with in two Bills which have been introduced into the House of Commons. One is Mr. Kearley's Bill of last year, re-introduced; the other, and more important, is a Government measure, introduced by Mr. W. Long, President of the Local Government Board. Two Government Bills were introduced last year, but it is now proposed to deal with the whole subject in one Bill. It is, however, divided into two chief parts, the first dealing with certain dairy products, and its operation extending to cheese as well as to butter and milk. It provides for the imposition of penalties upon conviction, and power is taken to deal with imported food products at the port by means of inspection. The authorities also propose to take powers to make rules for the regulation of analysis. It is proposed to extend the Margarine Act, and to impose a limitation upon the admixture of butter and margarine; in respect of food and drugs, the Bill imposes cumulative penalties for the second and third offences, whilst also making it obligatory that no foreign warranty shall be admitted as an excuse unless all reasonable steps have been taken to ascertain that the facts are as stated. Mr. Long has also adopted, and embodied in a third part of the Bill, certain other minor recommendations of the Select Committee, which sat for four years and inquired exhaustively into the subject, and to whose labours he has expressed indebtedness for valuable help. Having expressed a hope that the House would be willing to grant leave for the introduction of the Bill, the measure was duly read a first time, and now awaits second reading.

This Sale of Food and Drugs Bill, though prepared and backed by Mr. Long, Mr. Solicitor-General, and Mr. T. W. Russell, is an exceedingly colourless affair so far as the sale of food and drugs is concerned. The clauses of the Bill, as stated above, are arranged in three parts—the first dealing with agricultural products, the second with the sale of food and drugs, and the third with supplementary matters. The second part alone is of interest to our readers, if anything can be said to possess interest from which that quality is almost entirely lacking. The first of the eight clauses in this part provides that the notice of mixture on the written or printed label referred to in section eight of the 1875 Act, must not be obscured. The next clause makes it imperative on the person purchasing any article with the intention of submitting the same to analysis, to divide the article purchased into three parts, mark and seal up each part, and deliver one part to the seller or his agent. When a person guilty of an offence under the 1875 Act is liable to a fine not exceeding twenty pounds, the new Bill would make him liable to a fine not exceeding fifty pounds for a second offence and one hundred pounds for any subsequent breach of the law. Any drug or article of food exposed for sale in a tin or packet duly labelled need not, according to another clause, be sold except in the unopened tin or packet. It is further provided that the limit of time for the service of any summons under the Sale of Food and Drugs Acts shall not in any case exceed twenty-eight days, that a summons shall not be made returnable in less than fourteen days from the day on which it is served, and that a copy of any analyst's certificate obtained on behalf of the prosecutor must be served with the summons. The certificate must be in a form prescribed by the Commissioners of Inland Revenue. A warranty or invoice is not to be available as a defence to any proceedings under the Acts unless written notice of intention to rely on the warranty or invoice, specifying the name and address of the person from whom it was received, be sent to the purchaser within seven days, whilst a warranty or invoice given by a person resident outside the United Kingdom will only be available as a means of defence, if the defendant can prove that he has taken reasonabl steps to ascertain the accuracy of the statement contained in the document. Drugs or articles of food are to be sent to the Commissioners of the Inland Revenue by the Court on the request of either party, and the production by a defendant of a certificate of analysis by a public analyst is to be sufficient evidence of the facts stated therein, unless the prosecutor requires that the analyst be called as a witness. There is nothing in the Bill about a Board of Reference or about many other points regarding which we have been led to expect so much, and the measure as it stands is not likely to please public analysts or anyone else.

The Poison Regulations continue to be the subject of comment in the lay press, and it is satisfactory to note that more rational ideas on the subject prevail in some newspaper offices than in others which we have previously had occasion to refer to. Thus, the *Yorkshire Herald*, after expressing satisfaction at the adoption of the regulations, rightly observes that the extra care of the chemist and the druggist will require to be supplemented by the exercise of greater discrimination in the household. "No bottle or vessel containing poison should ever be put away, even for a short time, without being labelled, and such things should always be kept in a place where children, servants, and persons of ill-regulated mind cannot reach them. Certain it is that sad poisoning accidents occur more frequently from injudicious household management than from any want of care on the part of dispensers." This is distinctly to the point and reveals a clear grasp of the matter under consideration. Again, in the *Queen*, it is remarked that so many poisonous articles are used in almost every household that personal supervision is essential. Oxalic acid and Epsom salts, it is pointed out, are both to be found in a very large number of households, and the fact that they so closely resemble one another naturally tends to cause accidents, fatal effects having ensued, which might have been prevented by greater care. Oil of vitriol and spirit of salt are both used for cleaning metals, and are frequently kept in ordinary wine bottles without labels; rat-poisons containing fatal doses of strychnine are often left about in an accessible position; arsenical fly-papers may be fatal by accident or design; lead lotions and poisonous local applications are frequently left carelessly about and, if mistaken for internal applications, are necessarily injurious, if not fatal, in their effects. But the accidents arising from the articles mentioned may be entirely prevented by the adoption of a few strict rules in every household, the most important being "that no bottles or vessels containing poison be put away even for a short time without being labelled, and that such vessels be kept in a secure place by themselves, and out of the reach of children, servants, and ignorant persons."

The University Degrees Bill is a most useful little measure in its way, but whether all professing graduates will rejoice equally at the prospect it holds forth is quite another matter. The preamble states that it is desirable to distinguish between persons who have taken degrees in the various faculties at the Universities of the United Kingdom, or who have had degrees conferred upon them *honoris causâ* by due authority in the United Kingdom, and those persons who have received degrees from other sources. It is proposed, therefore, that any person who attaches to, or who is

responsible for the attachment to, his name of letters or abbreviations indicating the degree of bachelor, master, or doctor of any faculty in which degrees are granted, shall, unless such degree has been received from a University or other properly constituted authority in the United Kingdom, clearly indicate after such degree the source from which it has been received. The proposed penalty for neglecting so to do is a fine not exceeding forty shillings, recoverable on summary conviction. The names of Mr. J. W. Sidebotham, Mr. Carson, Dr. Farquharson, Sir William Houldsworth, Sir John Lubbock, Mr. MacNeil, and Sir William Priestley are associated with this Bill.

The Registration of Firms Bill—prepared and brought in by Sir Stafford Northcote, Mr. Oldroyd, Sir James Rankin, and Mr. Philip Stanhope—is intended, as its name implies, to provide for the registration of firms and of persons carrying on business under names or styles other than their own. A "firm" is construed in the Bill to mean any two or more persons lawfully associated for the purpose of carrying on any business, but the term is not intended to include an incorporated company. Whether or not the converse of this will also hold good—*i.e.*, for a firm in any part of the United Kingdom to he held not to be a corporate body—is not stated in the Bill, but such would presumably be the case. The object of the Bill, however, is to secure the registration of firm-names, and it is proposed that every firm carrying on business, or having any place of business in the United Kingdom, under a firm-name which does not consist of the full or usual names of all the partners, shall register the name under which the business is intended to be carried on and other particulars. Any person carrying on business under a firm-name differing from the full or usual name of that person will be under the same necessity. The particulars to be registered will be the firm-name, the nature of the business, the place or places of business, the full name, usual residence, and other occupation (if any) of the person or persons carrying on or intending to carry on the business. If the business is commenced or any new place of business established after the Bill has become law, the date of commencement or establishment must also be registered. The penalty for default in registration is to be a fine not exceeding £1 for every day during which the default continues, and the amount is to be recoverable on summary conviction before two justices of the peace. Any false statement knowingly made for the purpose of registration will be regarded as a misdemeanor, punishable by imprisonment with hard labour for a term not exceeding two years. The registrar under the Act is to be the registrar of joint-stock companies, and any person will be at liberty to inspect or make extracts from, or copies of, the statements filed by the registrar, on payment of fees not exceeding one shilling for each inspection.

The Royal Botanic Society has completed the erection of club buildings in its gardens, and they have been leased to a club limited to Fellows of the Society. This has been established under the title of the Royal Botanic Gardens Club, and a committee of management, consisting of both ladies and gentlemen, has been elected. The club is intended to provide all the facilities usually found in London clubs, in addition to the great advantages to be derived from its position in the gardens. Ladies as well as gentlemen will be eligible for membership. At present the subscription to the club is small, but it is proposed that from March 31 it shall be raised, and probably an entrance fee will then be imposed in addition. Three hundred Fellows, including a large proportion of ladies, have been elected to the club, and the number is rapidly increasing, but, as space is limited, the committee has taken power under its rules to restrict the number of members.

The Report on Acetylene Generators of the committee appointed by the Council of the Society of Arts to inquire into the requisite conditions of safety in acetylene gas generators has just been issued. The generators are classified by the committee into three groups (1) those in which the gas is generated by water being allowed to drip or flow on to the carbide; (2) those in which the water is allowed to rise in contact with the carbide, the rise being regulated by the increase of pressure in the generating chamber; (3) those in which the carbide drops into the water. These are again subdivided into automatic generators—whose storage capacity is less than the total volume which the charge of carbide is capable of generating, so that they require automatic regulation—and non-automatic ones, whose holders can receive all the gas produced by the charge of carbide. It is considered that the tests have clearly demonstrated that many types of acetylene gas apparatus can be so constructed as to be absolutely safe with ordinary precautions, and that lighting by acetylene need be no more fraught with danger than any other form of artificial lighting in general use. Safe, however, as acetylene gas is considered to be, when generated in a properl y-constructed apparatus outside the building to be lighted, and in accordance with the rules and suggestions contained in the report, the generation of gas within the house, and the use of hand lamps, cycle lamps, etc., is shown to be not unattended by danger, except in skilled hands. With regard to the storage of the carbide, of which the Home Office regulations allow 5 lbs. to be kept without a licence in 1-lb. packages, it is recommended that however small the quantity, it should always be kept in a dry place and under lock and key.

The Anti-Toxin Treatment of Diphtheria has the sympathy of the Goldsmiths' Company, and that body made a grant of £1000 in 1894 to the conjoint board of the Royal Colleges of Physicians and Surgeons, for the purpose of further experiments with anti-toxin, the stipulation being made that a supply of the best possible serum should be supplied for the gratuitous treatment of poor patients, especially children, suffering from diphtheria. The gift was accepted by the conjoint board, and on April 22, 1896, a report was furnished by that body containing the results of the work so far done by Dr. Sydney Martin and Dr. Wood in prosecuting the several lines of investigation which had been committed to their care. During 1896 and the first three months of 1897, 844 doses of anti-toxin at a strength of 4000 units each, and 299 doses at a strength of 1000 units each, had been supplied free to fifteen general and children's hospitals in London; and, in addition, 398 doses of 4000 units each, and 50 doses of 1000 units each, had been supplied to medical practitioners in various parts of London without charge for special and urgent cases amongst the poorer classes. The third and last report of the conjoint board, dated November 3, 1898, states that of the Company's grant of £1000, made in 1894, about £100 only remains. The need for further scientific researches in the laboratory, and for the continued provision of the best possible serum for those patients who are unable to purchase it, remains, he says, much the same as when the grant was entrusted to the colleges, and the board trust that when the residue in their hands is exhausted a further grant may be, in the words of the report, "a witness to the wise gencrosity of a great historical company and the instrument of further benefit to science

and humanity." Recognising that the grant made in 1894 has proved not only of much importance to science, but has also been of great value to suffering humanity amongst the poorer classes, upon consideration of the report, the Goldsmiths' Company has made a further grant of £500 to the conjoint board, making the same stipulation as before, that a supply of the best possible serum shall be supplied for the gratuitous treatment of poor patients.

The Institute of Chemistry now boasts of having on its register the names of 849 Fellows and 120 Associates, the total increase for the year being 24. The number of registered students at recognised colleges and under Fellows of the Institute is 159. The Council of the Institute, in its annual report, acknowledges the kindness of the Pharmaceutical Society in lending apparatus for examination purposes; of the Society of Apothecaries for a valuable gift of specimens of drugs; and of several Fellows of the Institute for providing accurately analysed and reliable samples of materials for use in the examinations. The Council has received the reports of the examiners on two examinations in therapeutics, pharmacology and microscopy, established to enable those Fellows and Associates who are desirous of obtaining appointments under the Sale of Food and Drugs Acts to produce evidence of a sufficient knowledge in these subjects. At the first examination nine candidates presented themselves, of whom six passed; and at the second four candidates were examined and three passed. The examinations were practical, written, and oral, and included the recognition of specimens of poisonous chemicals and crude drugs having well-marked physical characters, ordinarily found in commerce; the detection, by inspection and by means of the microscope, of adulterations, substitutions, and impurities in such substances. Candidates were required to show a general knowledge of the therapeutic effect of such chemicals and drugs, and of the quantities which, taken internally, would be injurious or fatal to man.

This Examination is open only to (1) Fellows and Associates of the Institute of Chemistry; (2) Candidates who have passed the examinations for the Associateship but are under the age requisite for election; and (3) Candidates entering in branch "E" of the final examination. Certificates have been granted to successful candidates, but it has been decided that the certificate in therapeutics, pharmacology and microscopy will not be issued to any successful candidate until he has been elected a Fellow or an Associate of the Institute of Chemistry. Few alterations have been made in the regulations for admission to the Institute, and those chiefly relate to the examination in therapeutics, etc., referred to above. The Council, however, is desirous that the remaining students registered under the old regulations should present themselves for examination without delay, and, in accordance with a resolution of Council, formal notice has been sent to all such candidates, that, unless they present themselves for examination before March, 1900, their names will be removed from the register, and that no candidate will be examined under those regulations after July, 1901. The Council has continued to watch appointments made under the Sale of Food and Drugs Act, and, where necessary, has made communications to the authorities, drawing their attention to the training and examinations required for the Associateship and Fellowship of the Institute, and urging them to appoint only such candidates as are fully qualified in analytical chemistry, more especially in the analysis of food and drugs. The financial statement of the Institute for the year 1898, we are glad to note, is in many respects the most satisfactory that the Council has been able to present since the Institute has occupied its present premises.

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACTS.

Pharmaceutical Society *v.* Howard Hogben.

In this case, reported in the *Pharmaceutical Journal* of November 26 last, the defendant having failed to pay anything under the judgment obtained against him, a judgment summons was issued against him, which came before His Honour Judge Lumley Smith at the Westminster County Court on February 28 for hearing.

Mr. C. W. Langley Flux, representing the Society, shortly drew his Honour's attention to the facts of the case, and pointed out that—as the defendant had confessed judgment on the terms of the particulars of claim which were both in respect of having sold and kept open shop for the retailing, dispensing, and compounding of poison contrary to the Pharmacy Act—it was naturally assumed that the defendant was the proprietor of the shop.

It now appeared that the defendant was not the proprietor of the shop, and the defendant (who appeared in person) admitted he was not the proprietor but only an unqualified assistant to Mr. H. Preston, the proprietor.

His Honour said that in his opinion the proprietor should pay the penalties incurred.

Mr. Flux said he was informed that the defendant had obtained his situation by holding himself out to the proprietor as being a qualified person, giving, as his own name, the name of one H. Hayward, who is now deceased.

The defendant, in reply to his Honour, said that his salary was now only 30*s.* per week, and he had a wife and five children to keep.

A representative on behalf of the solicitor to the proprietor produced the lease of the shop in his favour.

His Honour ultimately made an order committing the defendant for twelve days; the order to be suspended for so long as the defendant paid instalments of 10*s.* per month.

NEW REMEDIES.

Alpha- and Beta-Eunol.—These two preparations, employed in the antiseptic treatment of wounds, are combinations of eucalyptol and alpha- and beta-naphthol respectively. They are obtained by dissolving the naphthols in equal weight of eucalyptol. Alpha-eunol crystallises well, and may be purified by solvents.—*Pharm. Post*, **31**, 617.

Triphenetol-Guanidine Hydrochloride has been introduced as an anæsthetic. It is stated to be very powerful in its action, for a solution 1:1000 dropped into a rabbit's eye produces absolute anæsthesia in less than two minutes; no inflammation, no affection of the iris, or poisonous results are observed to follow its use.—*Pharm. Cent.*, **39**, 826, after *Jahresber. d. Ges. f. natur. Heil. in Dresden*, 1897-98.

Tincture of Iodine in Acute Disease of the Intestines.—Tincture of iodine has already been recommended as a remedy for vomiting, especially in pregnancy. Groech, however, now states that it is specially valuable in all cases where septic processes are present in the intestines, and has found it useful in typhoid and in infectious catarrh and in diarrhœa. He prescribes it thus:—Tinct. iodi. simp, Ph. G., 15 to 18 Mn.; syrup simpl., 20 grms.; aq. dest. ad 150 grms. One tablespoonful every few hours or three times in twelve hours. In small doses, iodine seems to act as an efficient and harmless intestinal disinfectant.—*Therap. Monats.*, **12**, 630.

PRESTON CHEMISTS' ASSOCIATION.

There was an important gathering of chemists at the Bull Hotel, Preston, on Thursday, February 23, on the occasion of the first annual dinner arranged by the Preston chemists.—The chair was occupied by Mr. F. Hackforth, of Leyland, and among those present were Messrs. R. Lord Gifford (Hon. Secretary North-East Lancs. Chemists' Association), Grimshaw, and Pickworth, Blackburn; Arkle, Stuart, Freeman, Patterson, and Williamson (Hon. Secretary), Preston.

Mr. Arkle, in responding to the toast—

Success to Pharmacy,

proposed by Mr. Stuart (Preston), said chemists were now in the unfortunate position of having a Pharmacy Act, and yet were unable to enforce it. When the Pharmacy Act was passed neither chemists and druggists nor the Legislature contemplated that such a state of affairs as that with which they were now confronted, would ever come to pass. Clauses 1 to 15 of the Pharmacy Act of 1868 were almost useless, and the seventeenth had been crippled in Scotland. The Council of the Pharmaceutical Society has therefore drafted suggestions for a new Pharmacy Bill containing some seven clauses, and in his opinion they contained all that chemists want. There must be some alteration in the "Widows' Clause," and it was only fair that should take place. Although chemists were their own enemies, there was still another enemy whom they desired to win over to their side, viz., the editor of the *Chemist and Druggist*. They wished he would join them, but it was to be feared that would never come to pass, and for the reason, that if the present agitation was successful in persuading chemists to become members of the Pharmaceutical Society, they would then receive their own Journal free. The editor of the *Chemist and Druggist* could see the force of that argument, and so it was to his advantage to keep the Society and its would-be members apart. It was ridiculous to keep advancing the argument about "hunting after guineas," for it was nothing of the kind. They were members of a chartered Society, and to become members of a chartered Society they were obliged to give a subscription. If the bricklayers could give their trifle once a week towards their trade union why could not a chemist hand in his subscription and become a member of the Pharmaceutical Society? Those outside the pale of membership had no right to criticise the Society; they were not members and had, therefore, no standing at all. Then, again, he did not think the Pharmaceutical Society could be charged with hunting after guineas, for its work for the general benefit has been carried on many years with the contributions of its loyal supporters. The *Chemist and Druggist* has certainly laid the foundation of dissatisfaction and disloyalty, and is still doing its best to fan the flame. The editor of that paper says very hard things about the Society, as well as about chemists, and it behoves them in self-defence to retaliate. The Bill which had been suggested was not in the interests of the trade only, but chiefly in the public interest. The public had no protection now against the limited company shop, and therefore the proposed legislation would be to the advantage of everybody.

Mr. Patterson proposed the toast of

The Pharmaceutical Society,

observing that many of them had perhaps grumbled and asked what the Society had done, but, on the other hand, a great many chemists were not associated with it at all, and therefore did not deserve to reap any benefit. Some of them, perhaps, expected impossible things, but they must not forget that trade questions were entirely outside the limits of the Pharmaceutical Society. It was their duty as chemists to support the Society in its desire to secure fresh legislation. He coupled with the toast the name of Mr. Williamson.

Mr. Williamson, in reply, said the Society could do much if registered men would join its ranks. How could they expect the Society to achieve anything great when it included only one-third of the registered men of the country? The Society was one of the most democratic bodies that could be imagined, especially since the passing of the Act of 1898, which gave to registered men equal power in the conduct of affairs. Any member was eligible for election to the Council, and only need be nominated by one other member, therefore, if those not connected with the Society were not satisfied with the work of the Council let them join and elect a new Council. With regard to the suggestions for a draft Pharmacy Bill, which were encountering so much unfair and strongly biased criticism, he certainly looked forward to some of the suggestions becoming law if everything proposed should not pass the House of Commons. Surely, if the public of Belfast or Dublin needed protection in the dispensing of medicines, the public of Great Britain was equally worthy to be protected in that respect. Then, with regard to the abolition of the "Widows' Cluse" and the substitution of a limit for the disposal of a business of a deceased chemist, he could not see in it any special hardship. In the majority of cases it would be to the widow's advantage and benefit that the business should be sold as early as possible. But there would be very little chance of obtaining any reform of the law or anything else, unless there was a further accession of new members. This year the members elected raised the proportion to about one-third of the registered men, but they should include at least 90 per cent.

Mr. Lord Gifford, in replying to the toast of

The Visitors,

proposed by Mr. Freeman, said the editor of an organ of free trade in pharmacy, already referred to that evening, had recently criticised the North-East Lancashire chemists, and distinguished himself, to quote his own words, by avoiding the issue, trailing red herrings across the scent, and inventing wild fictions about his opponents, with a view to prejudicing them in the eyes of the public and making personal passion usurp the place of sober controversy. People who object to pharmacy legislation know full well that the only way to make their opposition effective is the old subterfuge of trailing red herrings across the scent. If they would face the great question, the essential justice of the chemists' position was bound to be acknowledged. Chemists throughout the country ought by this time to recognise fully what the Pharmaceutical Society was really fighting for. He took it the Society was striving to attain a recognition of the professional character of what should be their work, and that such work required the responsibility of the individual and the recognition of the principle of the qualification of the proprietor. It was hopeless to think they could attack company pharmacy except on the ground of necessary proprietary qualification, and until chemists convinced the Legislature of the justice of their claim to professional recognition they would be liable to be met by arguments on free trade principles. A bold advocacy and united demand were alone needed at the present moment, because the issue is so simple. He failed to see how a just Legislature could deny the claims of chemists in the face of their present position. It was a matter of regret to him that many chemists in the country did not seem to grasp the essential feature of the agitation; at Exeter, for instance, he noticed a resolution had been passed to the effect that chemists must not sacrifice the "Widows' Clause," but if the people at Exeter would only look at what the Pharmaceutical Society was really asking for, viz., the institution of a professional standing, it must follow that the qualification went with the death of the individual, and that if they would be logical, they must abandon the exemption of widows. At Nottingham, Mr. Gascoyne began splitting straws about the use of the term "medical prescriptions" in place of "medicine." Quibbles like these chemists must surely see came within the category of side issues, and side issues should be religiously avoided. Then again Mr. Bolton asserted that the Pharmaceutical Society was between the devil and the deep sea, but for his part he could not see the relevancy of that observation. The Council had put forward a clear, substantial, straightforward proposition and asked that a direct answer should be given. Let them only get the main principle allowed, and all the side issues and quibbles would be settled on a fair, equitable, rational, and sound basis. At the Western Chemists' Association the other day Mr. Parker asserted that what was needed were figures and statistics in order to ascertain whether it was better for widows to sell or not, but really he could not appreciate the state of mind which asked a question of that character. Then Mr. Glyn-Jones, who was exercising great activity, did not seem to appreciate the difference between trade issues and professional issues. He had addressed the Lord Chancellor on the question of medical dispensing, but he ought to see, and pharmacists ought to realise, that if once a sound footing were secured, all side questions would naturally tend to settlement. If chemists would only combine in the attack nothing in the world could stop them. Their case had never been better put than in the editorial entitled "Pharmacy for the Pharmacist," which appeared in the

Pharmaceutical Journal of February 18 last, and if those words had been uttered by a Gladstone or a Beaconsfield the chemists of the country would be roused to a pitch of enthusiasm unknown in the history of pharmacy.

Mr. Grimshaw, Blackburn, said that in the battle for fresh legislation chemists must drop all side issues. He did not think the people at Exeter or Nottingham really appreciated the objects of the proposed Bill. If they could secure the necessary personal qualification of the proprietor it would give chemists a status which would compare favourably with that of the members of the medical profession.

Mr. Pickworth said that what was really needed was a stronger Society, and that could only be attained by every chemist in the country joining the ranks. He agreed with Mr. Gifford that chemists must let side issues alone and make the personal qualification of the proprietor the main point of attack.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting of this Association held on Wednesday, February 22, at 9.15 p.m., Mr. G. H. C. Rowland, President, in the chair, Mr. Fraser McDiarmid read a paper on

The Pharmacy of the British Pharmacopœia, 1898.

The opinion was expressed that there is still evidence in the Pharmacopœia of too much "arm-chair" or scissors and paste pharmacy. The directions for liquor caoutchouc are less satisfactory than those suggested by Catford, who mixes the indiarubber with the carbon bisulphide first, and after an hour or two adds the benzol. The assay process for ext. ipecac. liq. should be varied by putting the lead subacetate magma upon a filter at the week-end, in the hope that the liquid might get through the paper before Monday. In assaying ext. nucis vom. liq., if the precipitate of the alkaloidal ferrocyanides be washed as directed till free from bitterness, there will be an appreciable, if not a total, loss of strychnine. Again, one of the tests for the purity of castor oil has been copied from some other Pharmacopœia without due examination. Now, before inclusion in the Pharmacopœia, all those things should have been carefully worked out. The number of alterations in the B.P., 1898, is appalling, almost everything having been tampered with. It would take considerably less time to enumerate the unaltered galenicals than those that have been in some way or other changed. The introduction of the metric system side by side with the Imperial system in the formulæ for the preparation of galenicals may cause some temporary confusion, but it is to be welcomed as the thin end of a wedge, soon, it is hoped, to be fully inserted. The two general processes for maceration and percolation are distinctly more rational than those of the 1885 B.P., the percolation process being particularly good. Another novelty is the appearance of concentrated liquors, which may be used in place of the corresponding infusions. The processes are extremely tedious, as it takes about eight days to make a pint, or any larger or smaller quantity. In the cases of chirata and rhubarb, the drugs do not seem to be, possibly are not intended to be, exhausted, and the products have a great tendency to deposit, while other faults in method might be mentioned. All but one are made by slow percolation (or re-percolation) with weak spirits. The exception, calumba, serves for the introduction of another pharmaceutical process, viz.—exhaustion (more or less) of the drug by maceration and pressure, without evaporation. Calumba is rather an unfortunate drug to select as a herald of this method, and the product is rather an unsightly one, taking months to clarify. A better method is to exhaust the calumba by cold percolation, evaporate the liquid at a low temperature, preferably *in vacuo*, and add the right amount of spirit. The introduction of the repercolation process should be welcomed, and its application might be widely extended. Ext. sarsæ liq. thus prepared (the directions as to No. 40 powder being modified to "crushed") is all that could be wished. Objection has been taken to the process in the case of ext. bellad. liq., as the drug is by no means exhausted, and suggestions have been made that percolation should be continued to exhaustion, and the weaker percolate sufficiently evaporated. Any employment of heat makes a vast difference in the colour of the extract, and, as some change is caused in the alkaloid by heat, the B.P. method should be adhered to. Improved methods of standardisation are not apparent. The eager tendency of chloroform to emulsification tests the patience of every manipulator. Any pharmacist anxious to guarantee his drugs and preparations must now be prepared for the expenditure of large sums in the purchase of the paraphernalia of a thoroughly equipped laboratory. Amongst the ointments, ung. hyd. nit. suffers from the craze for novelty. The temperature, 290° F., indicated for its preparation is a dangerous one, for Squire has shown that a water-bath is amply sufficient for the production of a fine and permanent ointment. Bird has suggested an alternative method in which the mercurial solution is added to the lard only, melted over a water-bath, and when the reaction is nearly over, the oil is added and the whole stirred till cold. Liquor bismuthi now demands different treatment, but the ultimate strength should be the same. Manufacturers should be left to produce in their own way a bismuth citrate of definite purity, as in the case of other chemicals. The process for Easton's syrup is probably the best that can be produced. The syrup should be kept in full bottles, and not unduly exposed to light. Taken as a whole, the B.P., 1898, is a book to be proud of, with its careful elaboration and simplification of processes; but all the elaboration of detail, admirable as it may be, has one great tendency, viz., to make the book a manufacturers' treatise. The retail pharmacist, as a rule, through lack of time, means, inclination, is scarcely likely to set about the preparation of his galenicals. The B.P. Committee has now deleted most of the processes for making chemicals, leaving it to manufacturers to work out methods for themselves, at the same time demanding a certain standard of strength and purity. A similar fate appears to await the galenicals. If that should ever befall, then at last retail pharmacy would be a mere profession.

Mr. Rutherford Hill said, notwithstanding the defence of the pharmacopœial test for castor oil by Lucas and Umney, he thought it was of very little practical value. With the samples of oil to which he had applied it the sulphuric acid gave a distinct reaction, which most people would call blackish-brown. The addition of 5 per cent. of another seed oil make no appreciable difference. The idea of an Imperial Pharmacopœia was a good deal of a fad. The drugs now official could all be procured with reasonable facility in all parts of the Empire, and there was no sufficient reason for any supplementary list which would only cause needless complication and confusion. He strongly advocated the general adoption of the metric system for all purposes. Our slowness to adopt it placed Britain at a distinct disadvantage in competing with other nations for the commerce of the world. In the cases of ipecacuanha and nux vomica, he thought the Pharmacopœia had erred in setting too high an alkaloidal standard. The figures seemed based on certain published research results, in which the drugs were very completely extracted with great care and the alkaloidal content of a high quality was fixed as the official standard. It was not at all uncommon to meet with good samples which gave a smaller yield, and it was very difficult indeed to work the official process for fluid extract when these were encountered. With ipecacuanha, as Mr. McDiarmid had pointed out, it was sometimes necessary to evaporate rather than dilute. In the case of nux vomica it seemed that the seeds richest in alkaloid were purchased by the alkaloid makers, and those available for galenicals were frequently of a lower standard though of good quality, and it would have been better had a slightly lower official alkaloidal standard been adopted. He had seen a sample of fluid extract of nux vomica, in which there was a very considerable dirty looking deposit, and the sides of the bottle were dotted all over with yellowish-white masses, which seemed to be of a resinous nature. As to making the maceration up to one pint, if that was to be regarded as correct, then it followed that tinctures of orange and lemon should be made down to one pint. On this point it had been said that the portion of tincture removed by pressing was stronger than the other portion. This was contrary to the theory on which this process was based, that the tincture remaining in the marc was of similar strength to that filtered off. It was said, particularly in the case of tincture of opium, that the pressed tincture was always darker and stronger than the portion filtered off. It would be interesting to determine this point by experiment.

Mr. Rowland said he could confirm the point as to the unsightly deposit in fluid extract of nux vomica, and he had also observed that the last portions of tincture of opium from the press were darker than the bulk of the tincture.

Mr. McDiarmid, in replying, said he did not see why the

macerated tincture should not be all of the same strength if the marc were frequently and thoroughly shaken up during maceration. He agreed that fluid extract of nux vomica became very unsightly. The same happened with tincture of opium. He had recently examined a sample which contained in the bottom of a Winchester about one inch of deposit. Tincture of opium also varied greatly in colour, from the fact that the Pharmacopœia allowed the use of any opium containing not less than 7½ per cent. of morphine. If a rich opium was used the tincture was very light compared with a tincture made from a poorer opium. This caused much dissatisfaction on the part of purchasers, and it seemed almost as if a uniform colour should not be fixed and attained by the employment of the requisite proportion of saccharum ustum. This, of course, was not permissible without official sanction.

On the motion of the Chairman, Mr. McDiarmid was cordially thanked for his interesting and racy paper. The Chairman then presented the diplomas and certificates of the St. Andrews Ambulance Association to the members of the ambulance class as follows:—Diplomas, J. S. Henderson, 93 per cent.; G. H. C. Rowland, 87 per cent. Certificates, W. Seatter, 99 per cent.; G. Somerville, 91 per cent.; A. J. Dey and J. Tait, 90 per cent.; J. G. Nicolson, 88 per cent.; R. Corson, 86 per cent.; W. Anderson, 85 per cent.; A. McCutcheon, 79 per cent.; J. T. Harley, 78 per cent.—The meeting then closed.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

At a meeting of this Association, held on Friday, February 24, Mr. H. Finnemore in the chair, a paper was read by Miss Blundell and Miss Cable, entitled

A History of Six of the Febrifuges.

They chose the following six: cinchona, aconite, salicine, antipyrine, antifebrin, and phenacetin. At the outset of the paper it was claimed that nothing new must be expected, but a desire to bring forward a few interesting details respecting these drugs was the excuse for writing it. Of the discovery of the most important of these, cinchona, little is known; it was probably introduced by the Spaniards who founded the town of Loxa in 1739. The Jesuit missionaries did much to spread the use of the bark, hence its name Jesuits' bark. The wife of the Spanish viceroy of Peru, who was cured of fever by the bark, bought large quantities for distribution. after her it was called Countess bark and cinchona bark. On this occasion, at least, a woman did real service to mankind. The first cinchona plants seen in Europe were some calisaya plants raised from seed in the Jardin des Plantes at Paris in 1846. They briefly referred to the alkaloids and their discovery, remarking on the unfortunate neglect of all but quinine. The next febrifuge, salicine, has been in use since the thirteenth century or earlier, a reference to the Welsh physicians of Myddvai showing that willow leaves were among the remedies they employed. Some of their prescriptions caused considerable amusement. The glucoside principle, salicine, was obtained in 1829 by Leroux. The history of aconite extends even further back than that of salicine, some species being known to the Greeks as early as 250 B C Stoërk, of Vienna, introduced aconite into regular practice in 1762. Aconitine was isolated in 1833, and Groves obtained it in crystalline form in 1862. The other three drugs—antipyrine, antifebrin, and phenacetine—have been introduced so short a time that they can scarcely be said to have any history. It is amusing to notice that as each appeared it was extolled as the safest, best, and most efficacious febrifuge, soon, however, being found inferior to quinine.

At the conclusion of the paper, the Chairman, in expressing the pleasure they had felt at hearing the paper, made a few remarks on the extreme interest which attaches itself to the history of drugs.

Several members having thanked the contributors of the paper, the meeting adjourned.

Homocresol.—Homocresol, $C_6H_3 \cdot C_2H_5OCH_3OH$, one of the constituents of creosote, is a liquid having a clove-like odour, which is stated by Richaud (*Sem. Méd.*) to be less toxic than creosol or guaiacol, not caustic, and, when applied locally, equal in antithermic action to guaiacol.—*Bullet. de Pharm. du Sud-Est*, 3, 444.

CHEMISTS' ASSISTANTS' ASSOCIATION.

At a meeting of this Association, held on Thursday, February 23, Messrs. A. H. Mitchell Muter and P. R. Hill read a paper, supplemented by a practical demonstration, on the

Analysis of Dairy Produce.

At the outset of their paper, they proposed to give an account of the methods employed in the examination of milk and butter to separate genuine from adulterated. They pointed out that the composition of milk was water, fat, milk sugar or lactose, proteids and mineral matters, the last three being grouped together as non-fatty solids, and that milk fat consisted of glyceride of butyric acid, which distinguishes it from all other fats—both animal and vegetable. The most constant constituents in milk are the non-fatty solids, which average 8·75, and are rarely below 8 5 per cent., this latter figure being taken as the standard on which to calculate any added water. The standard of fat is usually taken at 2·75 per cent., and this, together with the non-fatty solids, are known as the total solids, the amount of which may be obtained in the following manner:—5 grammes of the sample are weighed into a tared shallow platinum crucible, one drop of a mixture of acetic acid and alcohol is added, and the whole heated on a water bath for three hours and then placed in a water oven till the weight is constant—about three hours being requisite. It is then weighed; the weight × 20 gives the percentage of total solids. The lecturers then demonstrated by means of the Leffmann-Beam centrifugal machine the method of obtaining the percentage of fat. For this purpose a bottle of 30 C.c. capacity is taken, the neck of which is graduated into eighty divisions, each of which corresponds to 0·1 per cent. of fat when operating on 15 C c. of the sample. The 15 C.c. are placed in the bottle together with 3 C.c. of a mixture in equal parts of amylic alcohol and fuming hydrochloric acid; then 9 C c. of strong sulphuric acid are gradually added, and the bottle filled to the zero mark with a hot mixture of sulphuric acid and water. It is then placed in the machine, which is revolved for about a minute, when the fat will have separated into the neck of the bottle. The reason for this process is as follows: the hydrochloric acid and amylic alcohol cause the separation of the casein, which is dissolved by the sulphuric acid. The fat being no longer held in solution the casein rises to the surface by the centrifugal force of the machine. They then determined the amount of fat present in a sample and found it to be 3 7. The specific gravity was then taken by the lactometer and corrected for temperature, and then, knowing the specific gravity and the amount of fat, they calculated by the amount of total solids by means of Richmond's milk scale. This was found to be 12·63 per cent. Subtracting the amount of fat from this gives the quantity of non-fatty solids. Thus:—

Total solids	12·63
Fats	3·7
Non-fatty solids	8·93

If formalin has been used as a preservative, it is detected when the above process is carried out, as the casein does not dissolve in the sulphuric acid and a blue colour is produced. If the proportion of fat be too low, it must be accurately determined by some suitable test. Adams' is a very good one. This consists in soaking up 10 C.c. of the sample in fat-free blotting paper, drying in the water oven, extracting with ether in a Soxhlet extraction apparatus and the percentage calculated. The percentage of fats in unsweetened condensed milk or in cream may be determined by the centrifugal machine. About 2 grammes is taken and diluted to 15 C c., and then proceeding as in the case of milk. The result is multiplied by 15·45 (which is the weight of 15 C.c. of average milk), and divided by the weight taken. For sweetened condensed milk, which would char with the sulphuric acid, 25 grammes is taken and diluted to 100 C.c. Ten C c. of this solution is mixed with 30 grammes of plaster of Paris and allowed to dry spontaneously. This is extracted with 100 grammes of ether, set aside to settle, as much as possible of the ether poured off into a weighed flask, and the bottle re-weighed. The ether is distilled off, the flask weighed, and the percentage of fat calculated.

Butter consists of 85 per cent. of fat, water, casein, or curd. Margarine is prepared from beef or mutton fat by churning with skim milk, and when carefully prepared can scarcely be distinguished from butter. Butter contains the gly-

cerides of butyric acid, which are soluble in water, whereas the animal fats consist of palmitic and stearic acids, which are insoluble. Reichert's method was then alluded to, a modification devised by Leffmann-Beam being now generally used. This consists in placing the sample in a beaker on a water bath, when the water and curd settle at the bottom; the fat is filtered in a water oven. Five grammes of the fat is weighed into a flask marked at 150 C c. and 25 C.c. of a normal solution of potassium hydrate in glycerin added. The flask is heated over a low flame until the moisture is dissipated and the contents have saponified. Water is then carefully added, and 30 C.c. of a 5 per cent. solution of sulphuric acid and water added to the mark. Fragments of pipe clay are added, and 100 C.c. distilled off. The distillate is titrated with a decinormal solution of sodium hydrate, phenol-phthalein being used as an indicator. Pure butter should take 24·32 C.c. for neutralisation, corresponding to an amount of 4 per cent. of butyric and other volatile acids. The percentage is calculated on 25 C.c., and a sample requiring 12·5 C c. of N/10 sodium hydrate would contain 50 per cent. of butter. Recently boiled distilled water must be used to ensure absence of carbon dioxide. The purity of cheese may be determined in the same way. The instrument known as the butro-refractometer was then shown, and samples of butter and margarine exhibited on it to the members.

At the conclusion of the paper, the President, Mr. F. W. Gamble, in expressing the pleasure he had felt in listening to the paper, thought the work of the analyst was fast becoming mechanical, for they seemed to have machines for every process. He referred to the importance of purity of dairy produce, as recent research in bacteriology showed that milk was a fruitful source of tubercle bacilli. It had also been found that the creamy layer was even more impure than the milk.

Mr. H. Hymans doubted whether Richmond's tables were to be depended on; his experience being that they were not.

Mr. C. J. Strother spoke at some length on the foreign accent on the names of the processes mentioned, and considered that the reason other nations seemed to be ahead of us was that science there was assisted by the State.

Mr. Latreille proposed a hearty vote of thanks to the authors for their interesting paper, which was therewith accorded to them.

Mr. Muter, replying to Mr. Hymans' criticisms of Richmond's tables, thought they did not apply to the new ones.—The meeting then adjourned.

LIVERPOOL CHEMISTS' ASSOCIATION.

The usual monthly meeting was held on Thursday evening, tho 23rd ultimo, at the Royal Institution, Mr. H. Wyatt, jun., Vice-President, in the chair. In view of the discussion on the

Suggestions for a Draft Pharmacy Bill

there was a large attendance of the chief members of the pharmaceutical community, who evidently appreciated to the full the drastic changes contemplated in this latest attempt to obtain for the pharmacist that measure of protection to which his training entitles him.

Mr. A. C. Abraham inaugurated the discussion in a pithy and concise speech, in which he sketched the causes leading up to the present anomalies in the practice of pharmacy which the Council's suggestions were calculated to remove. Taking them as a whole the suggestions were such as would meet with pretty general approval, though it might be as well to give a period of grace—say fifteen years—to those individuals who would be immediately affected by the enforcing of the second clause. The condition of affairs at present existing was the growth of years, and the attempt to enforce this clause without some term of grace to enable offenders to so alter their business as to put themselves beyond its pains and penalties would raise an amount of opposition which might be difficult to cope with. The definition of the seller was not difficult, for he held that the seller was undoubtedly the person who took the profit of a transaction.

Following up the discussion, Dr. Symes, who spoke as a member of the Pharmaceutical Society and not as one of its councillors, drew attention to the fact that these were merely suggestions, and, therefore, the more they were criticised the better it would be for the correct wording of the future Bill. They were drawn up as embodying the alterations wished for by the bulk of the trade, and were the ideas of the majority put into definite shape. It must be borne in mind also that they had been already submitted to the Lord Chancellor in the form of a letter, to which the reply had been received to put these desires into form for a Bill and send them for approval. As to whether these arrangements dealt entirely with "company pharmacy" was open to discussion; however, he quite agreed that a personal responsibility should be fixed on the dircctor or other individual in charge of the pharmacy business in stores and such-like places. The fifth clause was rather a blessing in disguise to widows than a hardship, for in most cases businesses when kept on over a year after the decease of the proprietor depreciated in value. He as an individual did not agree with the fourth clause, as he thought a medical practitioner should be under control just as any pharmacist should, especially when he kept open shop. The principle of the suggestions had good chance of being adopted, and he hoped no fractious opposition would be started against it by individuals who might not care for one or other provision, but that chemists generally would work for the object aimed at in its entirety.

Mr. T. F. Abraham thought that it was by illegalities being winked at in the past, when committed by the chemists themselves, that a firm hold had been obtained by limited companies, who had since been strengthened in their position by various judicial pronouncements. When shops were conducted by unqualified men, and a widow was allowed by special provision in the Pharmacy Act to run a business on her own account, chemists could not logically ask for the suppression of those carried on by limited companies. Now, however, chemists had assumed their responsibilities, thrown over the "Widows' Clause," and with a free sheet were about to ask for their rights.

Mr. J. Smith, the local secretary of the Society, said he thought chemists would do by no means badly if they carried Clause 1 of the suggestions alone. As to Clause 2, it was asking what they would have great trouble in obtaining, whilst Clause 4 might raise a storm from the medical profession endangering the whole. The fifth clause, however, should be firmly insisted on, or other unqualified proprietors could not be, in fairness, proceeded against. The insinuation had been thrown out that the Council of the Pharmaceutical Society was just issuing these "suggestions" as a means of getting more subscribers, or in other words, making money out of them. That unworthy view needed no comment. In his opinion it was mistaken policy on the part of the Pharmaceutical Society of Great Britain not working closer with the Irish Pharmaceutical Society, for the latter had great influence in the House of Commons, and together they would have a better chance against the opposition of the limited companies than each would have if acting alone.

Mr. P. H. Marsden thought it would be as well to leave the medical men severely alone—pharmacy could only gain by allowing them to work out their own destruction. When one considered that the amount of pharmacy required of a medical student was supposed to be learnt in about thirty hours of lectures, the result of their competing with a properly trained pharmacist could certainly be regarded with equanimity.

Mr. R. C. Cowley was not so sure that the medical men should be let alone. He rather thought the friends on the other side of the Tweed, who knew what the competition of doctors' shops managed by unqualified assistants meant, would have something to say on the subject, and that that something would be very much to the point. Legislation should affect the whole body of chemists and not have any exclusive application. Those whose lot lay among the workers and the lower class should have just as much consideration as others more favourably situated. In Clause 4 the words "interfere with" should be deleted, for their ambiguity would cause trouble, he was certain. He sincerely trusted that this time the Council did mean work, and that these measures were not a sop to satisfy the trade without any chance of their ultimately becoming law. The Privy Council allowed all this illegal competition, and yet at the same time was continually adding to the stringency of an already stiff enough Minor examination. If increased education was demanded from the chemist it was loyally responded to, and should, therefore, be requited by the Privy Council doing its utmost for the men educated to perform certain duties, duties which in many cases were at present too often relegated to total unqualified individuals.

After remarks from Messrs. Pearson and Hornblower, Dr. Symes asked permission to repudiate, on the part of the Council of the Pharmaceutical Society, the unworthy motives which had been

ascribed to it. The sole idea animating that body was that of promoting the general good of the trade.

The Chairman urged upon the members the desirability of according to the suggestions their united support. For his own part he was willing to take them as they stood, the most satisfactory he had ever had the opportunity of reading. The clause affecting medical practitioners should be pushed to the fullest, for the reason that it was only claiming that to which a pharmacist had an undoubted right, namely, the performance of such work as his technical skill entitled him to.

Mr. A. C. Abraham then moved the following resolution :—

> That this meeting hails with satisfaction the general terms of the suggested Draft Pharmacy Bill, and will use its best endeavours to promote its passage through Parliament if introduced.

Mr. J. Smith seconded this resolution which, on being put to the meeting, was passed unanimously.

In consequence of the lateness of the hour, a note on "Tinctura Aurantii, B.P., 1898," which should have been read by Mr. Harold Wyatt, jun., was postponed to the next meeting.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

At a meeting of the Committee of the above Association held on February 28, it was unanimously decided to earnestly support the candidature of Mr. C. J. Park for re-election on the Council of the Pharmaceutical Society. A feeling of assurance was expressed that the satisfactory manner in which he has carried out the duties in the past will ensure the warm support of all by whom he is known. A meeting of the members of the Association will be held on March 15, ensuing, to confirm this resolution and to take such action as may be thought desirable.

TUNBRIDGE WELLS AND DISTRICT CHEMISTS' ASSOCIATION.

The annual general meeting of this Association was held on February 23, the following members being present: Messrs. Booth, Chatterton, Dunkley, Gough, Green, Gower, Hobbs, Johns, Ogle, Robinson, Rogers, Tute, and Wardley.—The chief business of the evening was the election of officers for the ensuing year. Mr. E. Dunkley was unanimously elected President, and Mr. Gower, of Tonbridge, Vice-President. Mr. R. A. Robinson, the retiring President, was made an *ex-officio* member of Committee, Mr. Rogers and Mr. A. E. Hobbs being re-elected Treasurer and Secretary respectively, and Messrs. Gough, Green, and Ogle chosen for the Committee.—A resolution was passed in favour of joining the Federation of Local Pharmaceutical Associations, and the Secretary was instructed to communicate with Mr. Cowley, the Secretary of the Federation.—Mr. Johns was elected a member of the Association.

The President, in a few kind words, proposed a vote of sympathy with their Secretary, Mr. A. E. Hobbs, coupled with congratulations on his recovery from the accident he met with in November last (see last volume, page 562*f*).

The annual dinner of the Association was announced to take place on March 2 at the Mount Ephraim Hotel, Tunbridge Wells.

Salophen for Headache and Influenza.—The decomposition of salophen in the body takes place in a similar manner to that of salol, the products of decomposition being salicylic acid and acetyl paramido-phenol, both components being excreted in the urine. The action of salophen on headache, migraines, facial neuralgia, nervous toothache and influenza, is usually rapid. For nervous headaches 1 gramme is prescribed, and an hour later another gramme, suspended in water or in cachets. For influenza it is preferable to give doses of 0·5 gramme at intervals of two to three hours. Aërated water aids the action. On amelioration of the pain, the doses are decreased, small doses being finally given to prevent a recurrence of the attack. Small doses have also been found to afford protection against influenza.—*Pharm. Centralh.*, 39, 101.

ROYAL INSTITUTION.

On Thursday, February 16, the second of a course of lectures was delivered by Allan Macfadyen, M.D., B.Sc., on

Toxins and Antitoxins.

The class of ptomaines or cadaveric alkaloids first received consideration. They occur in the putrefaction of organic animal matter, and are, as a rule, highly poisonous. They may be extracted by methods similar to those employed in the extraction of plant alkaloids, and many of them give alkaloidal reactions. Their toxic effects so often closely resemble those of certain well-known plant alkaloids that on many occasions cases of poisoning by ptomaines have been attributed to the action of plant alkaloids. As an example of this, it was mentioned that some years ago an Italian general died suddenly, and a post-mortem examination showed every indication of delphinine poisoning. A basic substance was extracted from the body of the dead general that gave reactions for ptomaines, which delphinine does not give. Moreover, the physiological action on the frog was very different. Another poisoning case at Cremona, at first attributed to morphine, was likewise eventually traced to ptomaines. These compounds are generally extracted by one of three methods: (1) By the Stas-Otto method, in which tartaric acid is used to take up the basic substance; (2) by means of Dragendorff's method, employing sulphuric acid; this is not so good as (1) because another basic substance is produced; (3) Braeger's precipitation method by means of metallic salts, *e.g.*, mercuric chloride; the resulting compound is decomposed by sulphuretted hydrogen, and the free base fixed by platinum in the form of a soluble salt.

These ptomaines are closely allied to the toxins that are produced in the animal body by disease-bearing bacteria, and their chemical constitution is being better understood now than formerly. Just as by taking the elements of water from the formula of choline another basic body—neurine—is produced, so certain relations may be noticed between some ptomaines. From cultures of the typhoid bacillus a crystalline body—typhotoxin—has been obtained, whilst cultures of the bacteria of Asiatic cholera yield two basic bodies, one non-poisonous, the other toxic, producing diarrhœa. From the cultures of the tetanus bacillus no less than five basic bodies are obtainable. Some of these basic bodies are not of a specific nature or produced by specific bacteria; others, the poisonous bases, are, on the contrary, of a specific nature, and associated with specific diseases. Dr. Macfadyen went on to speak of the methods of obtaining pure strain cultures of bacteria. Thus, in the case of the bacteria of diphtheria a sterilised platinum wire, to which is attached a plug of sterilised cotton wool, is applied directly to the back of the throat of an infected person, and at once transferred to a test-tube containing some blood serum.

Some of the bacteria are dislodged in this way, and, after plugging the test-tube, it is placed in an incubator at blood heat. After a period of from eight to twelve hours there may be seen distinct colonies of bacteria, so rapid is the multiplication. To get a pure strain, all that is necessary is to dislodge a portion of one of these colonies by means of a platinum wire and transfer it to a fresh nutrient medium. By repeating this process other strains of bacteria are eliminated. In all bacteriological work it is of the highest importance to sterilise everything that is used. This method is daily employed at the Jenner Institute and elsewhere, helping medical practitioners in the early diagnosis of diphtheria, enteric fever and tuberculosis. By growing pure bacteria in beef broth and peptone, solutions of toxins may be prepared. The broth must not contain sugar, which substance, by passing to acids, hinders their formation. Since aëration is favourable to the growth of certain bacteria and prejudicial to that of others, it follows that this must be taken into consideration in attempting to prepare toxins. Aëration may be effected by means of an aspirator, the air passing through a flat wide bottom flask, to allow of a good surface for active growth. Different strains vary in their power of producing toxins, the latter vary in potency. After a week's incubation the culture is filtered through a Berkefeld filter to remove the bodies of the bacteria, and toluol or some other antiseptic liquid is placed over the solution of the toxin, *e.g.*, that of diphtheria. The tetanus bacillus may likewise be taken direct from the body that is infected. It is an example of the class of anaërobic bacteria, requiring no air; those that must have air are aërobic, whilst those that can thrive under either condition are known as facultative bacteria.

Air may be excluded mechanically by plunging the bacteria deep into the medium, or chemically by absorbing it in a Buchner's tube with the aid of alkaline pyrogallol or, thirdly, by driving out the air and replacing it by hydrogen. The great necessity in the case of anaërobic bacteria is the exclusion of the oxygen of the air. Toxins are precipitated by alcohol, and by some salts, *e g.*, ammonium sulphate. The dried precipitate forms a powder, consisting chiefly of a proteid substance which has entangled the toxin. Toxins are not peptones, are not dialysable, and are sensitive to heat, being destroyed at 100° C. Tetano-toxin is precipitated from solutions by zinc chloride. These toxins are neither genuine tox-albumins nor proteids, nor are they formed of proteid matter. The specific toxins are synthetic products, formed in and secreted by the bacterial cell. The substance of the bodies of the bacteria is known as protein, and what is known as an intracellular poison is produced therein. In order to obtain a solution of protein the bacterial substance is removed from the medium, emulsified in water, and mixed with a half per cent. solution of potash. After clarifying by filtration add an acid to precipitate the protein, which may be well washed and taken into solution by an alkali. This soluble protein produces fever, local inflammation and suppuration. The lecturer concluded by briefly describing a method for preparing tuberculin.

On Saturday, February 18, at 3 p.m., the second of a course of lectures was delivered by the Right Hon. Lord Rayleigh, M.A., D.C.L., LL.D., F.R.S., on

The Mechanical Properties of Bodies.

Certain hydrostatic principles were demonstrated, notably the method of taking specific gravities of solids by means of a hydrostatic balance. After this Newton's three laws of motion received consideration, these and other dynamical theories being well illustrated experimentally. Thus the old guinea and feather experiment was performed, by which these two objects, though of widely different weight, are seen to fall at the same rate in a vacuum. Formulæ were given for determining the velocity, acceleration, and so forth of moving bodies, both falling and otherwise. In throwing a ball long distances the greatest range is attained by projecting it at an angle of 45°. It is calculated that a ball so thrown to a distance of 100 yards travels at the rate of 100 miles per hour. Consequently the hand must move at that rate at the moment of propulsion, because the hand must press the ball to propel it, and therefore move as fast. The principles of the stability of bodies were next discussed. The time of vibration of a pendulum was shown to depend on its length, and not on the material of which it is made. Thus, a pendulum made of wood vibrated in equal times with one of the same length made of lead. The tendency in all bodies is to lower the centre of gravity. Models of boats were floated on water that was set in motion. It was shown that a raft lies flat on the water, partakes of its motion, will take a big sail, and stand rough weather, because of its stability. Vessels that do not take the motion of the water are less stable. The time of rolling of a ship must be that of the waves which it encounters. It is not well for a vessel to be too steady, else the waves dash over the decks in a heavy sea. Great stability is very undesirable on board ship, there being much less rolling in a model whose centre of gravity was raised by means of a leaden weight attached to the top of the mast than was observed in the same vessel when the weight was removed, and the centre of gravity consequently lowered. Lord Rayleigh passed on to the question of bodies moving in a circular path, and discussed at some length the theory of centrifugal force, giving formulæ for working out problems dealing with the subject. Next he dealt with gyroscopes, and explained their application on board ship, where it is required to have a steady platform for a searchlight or for guns. By means of this clever adaptation of a scientific toy it is possible to fix a steady platform on a violently moving ship. An interesting experiment was then performed, proving that, as Torricelli first demonstrated, the velocity of an escaping jet of water is equal to the height of the reservoir. This led the way to the description of the hydraulic ram, a working model of which was in operation. Water flows down a pipe from a considerable height; a self-acting valve at the bottom by suddenly closing sets up a hammer-like action in the pipe, whereby a part of the water is made to escape through a side valve with much force. The height of the water so forced out is ten times that through which it dropped.

LETTERS TO THE EDITOR.

The Modern Pharmacist.

Sir,—I am not going to discuss the advantages and disadvantages "of committing the awful crime of qualifying as a pharmacist," but I venture to say that your correspondent who signs himself "Miserably Poor" has displayed very bad taste by inditing such an epistle as that which disgraced the pages of your Journal. Does he think that because a man is a chemist the public are going to support him whether he shows any aptitude for getting on in life or not! In every profession, trade, and calling there are the good and the bad, the strong and the weak. I should say your correspondent belongs to the miserably weak, and as such must go to the wall. As an outsider I have always believed there to be chemists and chemists, just as there are men and men of all callings. Where "Miserably Poor" shows his vindictiveness and lack of manners is in that part of his letter, where he refers to a chemist being classed with some "herbalist quack." Again, I must remind him that even in the honourable calling of herbalists there are the usual two sorts. As a medical herbalist I strongly resent such insulting remarks. I have been here about eight years, and I do not think there is a Major or Minor man who would complain of my existence near them. My place of business is recognised by all people as a herbalist's. I do not go in for carboys with brilliant colours. I vend herbs and display herbs, and conduct my business as a medical herbalist. I do not ape the chemist or his shop style—and I am disgusted with those herbalists who do. If I were to deal with the subject of quackery I should enter an extensive field of argument, and I commend to your correspondent that very old and wise proverb: "That people who live in glass houses should never throw stones." Personally, I may say that prescribing for slight ailments is one thing, and tampering with serious symptoms is quite another matter. I hope my friend will realise this. I will go this far and say that no medical herbalist should display show carboys or dress his window after chemists, fashion. I think your members should "go for" the drug stores and leave medical herbalists alone. Coming to the public and protection, I am sure any ratepayer thinks he is protected too much, with quite an army of officials, and if a poor, unsuccessful chemist (?) discovers that he has not mastered the difficult process of making two ends meet, simply because the public do not patronise him, he should not vent his spleen on other successful men who are doing a "living business." The Pharmaceutical Society already possesses very far-reaching powers, but "Miserably Poor" and men of his kidney should not take it for granted that the Council can lay before them "the fat of the land" in driving customers into their shops. No, they must pull themselves together and adapt themselves to the times. Time was when the chemist's customers were really patients. Nowadays we are surrounded with doctors who give advice and medicine for sixpence, and in some cases less than that, and this has no doubt taken a good deal from the chemist, who had turned his shop into a surgery. As a qualified medical herbalist I have to contend with ignorant opposition, though I have spent money in study, and journeyed to London to be examined. Among the examiners I faced was a member of the Pharmaceutical Society, who examined me in botany and materia medica. *Laisser faire* is to-day read as every man for himself and the devil take the hindmost. Thus it follows that the shrewd, honest, and clever man lives and lasts, while the weak, despicable ne'er-do-well goes to the wall and expires. I might, in conclusion, say that I always regret to see a letter to the Press, in which the writer has shielded his identity under a *nom de plume*. I should be very pleased to hear from "Miserably Poor"; I am well known. It may interest him to know that I, only a medical herbalist, when joining our association, had appended to my application form the names of three M.P.S.'s and four chemists. Some day—may it be soon—medical men, dentists, chemists, and medical herbalists may have a specific work to do, each one would know his own and stick to it, and the one would not trespass on the domain of the other. I have passed as a medical herbalist, as such I intend to get my living, notwithstanding the wild vapourings of such men as "Miserably Poor," and I venture to say that there is not a resident in Birmingham, who knows me, who would describe me as other than a medical herbalist; not one could say he had ever had a bottle of medicine from me.

Summer Lane, Birmingham,
February 25, 1899.

James Crisp.
Member National Association Medical Herbalists, Great Britain.

The Suggestions for a Draft Pharmacy Bill.

Sir,—The suggestions for a draft Pharmacy Bill ought to give satisfaction to all chemists. I am sorry to see opposition to the abolition of the "Widows' Clause." The Council deserves credit for suggesting its removal. That Clause panders to a flabby sentiment, and has called forth from the judges the very pertinent remark "that the public are as well protected by a company's qualified manager as by a widow's." This "Widows' Clause" has been utilised as the enabling clause in company pharmacy. There are always plenty of purchasers for a good business, and the widow would act wisely in disposing of it as soon as possible. It is absurd to suppose that purchasers are going to wait twelve months to save a few pounds in the purchase money, the business would also suffer. "Knock out sales" are not likely to occur with a chemists' business. Fancy half a dozen young chemists allowing their capital to lay idle for twelve months, deputing one of their competitors to buy, afterwards adjourning to the "pub" to resell among themselves and dividing the plunder. Mr. Pond's letter implies that lawyers and doctors can take unqualified partners. I think they cannot; they may agree to pay an annuity to the widow. A chemist can do likewise. The same correspondent writes "the doctor, the lawyer, and everybody else can make a will, but if Clause 5 becomes law the poor chemist will not be able to do so." What a merciful relief to the poor chemist; have not the British public and company pharmacy been training him these many years to be thankful for small mercies. In 1864 the Pharmaceutical Council drafted an Act to restrict the dispensing or compounding of all prescriptions of physicians or surgeons to qualified chemists and druggists, and had the support of the General Medical Council, the R.C.P. and R.C.S. Should not we like to have that Bill at the present time? That Bill was opposed by the United Society of Chemists, with the result that the present miserable Poisons Bill was passed by the Government. Let us profit by past experience, sink all our minor differences, endeavour to find as much as possible upon which to agree, and loyally support the Council in its attempt to benefit the craft; the members of it are successful business men possessed of as much common-sense as ourselves: do not disgust them with the pin-prick policy of our Gallic neighbours.

London, February 27, 1899. Jno. Hick.

Sir,—For over thirty years our opponents have succeeded in inducing the public to believe that in our struggle to be free from unqualified competition we were trying to overthrow the principles of free trade in this country. This opinion was accepted by the general public, the journalistic world, and, strangest of all, by many of ourselves. It is almost incredible that so many people should have been led after this red herring for so long. We have never assailed the principles of free trade at all. Our case has nothing whatever to do with free trade, and I think that is rapidly coming to be recognised upon all sides. We are now, however, face to face with an exactly similar position in another connection, and I hope it will not take us thirty years to see through it. Our opponents point in triumph to the fact that half the members of the present administration, nearly all the members of the House of Commons, many of the members of the House of Lords, and many judges are connected in one way or another with public companies. In place of stating to the public that we are trying to overthrow free trade, these men will now blame us for trying to overthrow the principles involved in limited liability law. We must first understand clearly ourselves that we are doing no such thing, then we must take every opportunity to impress upon journalists, and the people generally, correct ideas in regard to this matter. We are in no way assailing public companies of any kind. Just as our case had nothing to do with free trade before, so now it has nothing to do with public companies. We held that when the State required special qualification for the practice of a profession, the confinement of that practice to qualified men followed as a natural corollary, and our position did not touch the very remotest fringe of the principle of free trade. Now we hold that no person who is not qualified has a right—whether as an individual, a partner, or a member of a company—to be concerned in keeping open shop for the discharge of the duties which belong to pharmacy, and our position has no connection whatever with the principles involved in general limited liability companyism. We are not going to take upon our shoulders the whole burden of the fight against limited companies in general, and we are not going to have our case weakened by having any intention of doing such a thing ascribed to us. Those financially interested can fight out the question as to the morality—or immorality—of these companies amongst themselves. In our professional capacity we have nothing to do with public companies; we neither wish to see them mended or ended. The injustice of which we complain consists in this, that certain men who are unqualified are doing what the law practically says can only be done by qualified men, and it is against this and this alone that we are fighting. I hope every chemist in the country will grasp this fact and stick to it. Many men in Parliament will see the justice of our fight viewed from this position, and they will also see that our attitude does not in any way affect their position as shareholders or directors in public companies. I think it very unlikely that many men in Parliament are shareholders in drug companies. I know that the men who have set themselves to obstruct progress, boast of the thousands invested by the public in drug companies, but the boast is an empty one. There is not much public money invested in these companies. A great many of them are bogus one-man companies, many more are practically bogus companies, although they have taken some rudimentary steps to make themselves appear genuine, and even in the companies whose shares are upon the market there is not much public money invested. The drug business does not afford scope for the investment of much money, and it would be interesting to know how many of these companies, the shares of which can be bought in the open market, are over-capitalised. I see that these men entrench themselves behind some ten or twenty thousand of a fighting fund, but we entrench ourselves behind justice, and honour, and moral rights, and I hope every chemist in the country will be able to see which entrenchment is likely to prove the stronger.

Dumfries, February 27, 1899. James Reid.

Sir,—It will be well if all the critics of the suggestions sent to the Lord Chancellor by the Council will bear in mind the remark made by Mr. Reid in your columns recently: "We are not in search of ground on which to plant an opposition tent, but we are in search of ground upon which we can all stand united and strong, with our front to the enemy." It is entirely in the spirit of this remark that I wish to take exception to a sentence in your editorial last week. You say: "Sound reason must be shown for asking that unregistered persons should be prohibited from investing their money in associations for carrying on the practice of pharmacy." Now, sir, does not this take us further than it is reasonable to go? If I am a qualified pharmacist without capital, is there anything wrong in borrowing capital from an unqualified friend? And is the case any worse if I borrow from seven unqualified friends, and, in order to limit their liability, make the business into a limited company, with myself as managing director? Or, if I issue a prospectus to the general public and allow them to take shares, always with the restriction that the direction of the affairs of the company is solely in the hands of qualified chemists? My contention, in short, is that we must be quite contented if it is made compulsory for all the directors of a company engaged in the business of pharmacy to be qualified pharmacists; and this, not because we are not likely to get more, but because more would be unreasonable. Trade of all kinds is passing more and more into the hands of large firms, who, with plenty of capital behind them, and an extensive turnover, can conduct their business far more economically than the small traders they displace, and, in the main, the public is better served. Inasmuch as pharmacy is a trade, it is inevitable that it should be thus invaded by the competition of large firms, either limited companies or otherwise. At present, these large companies have a very unfair advantage over us, owing to the anomaly in the law which we hope to get remedied shortly; but I maintain that it is quite useless to expect that pharmacy is to be isolated from all other trades and the competition of big capitalists with small (with inevitable hardship to the latter) artificially removed from this trade alone. If suggestion No. 1 were embodied in a Bill and passed by Parliament, I should certainly expect to see it maintained that in the case of a company the "association of persons" carrying on the business and using the title of "chemist" were the directors and not the shareholders, and that the requirements of the law would be met if the directors were all qualified chemists. I think if the latter condition were fulfilled the interests of the public would be adequately protected, and the

competition with chemists trading individually would be fair, though severe. I would remark, in conclusion, that the competition of big capitalists with small, which is so prominent a feature in modern business, should injure the small trader less in pharmacy than in any other business, inasmuch as the pharmacist's services to the public are largely personal and of a professional nature; and if he is a sufficiently competent man to make a clear value attach to his personal services, he, better than any grocer, draper, etc, can smile at the competition of big non-personal companies.

Newcastle-on-Tyne, February 27, 1899. . F. Harrison.

Hypophosphites and the B.P. Permanganate Test.

Sir,—In a letter from Mr. Typke on hypophosphites in your last issue, there are some statements regarding the B.P. permanganate test which require modification. It is stated that in this test an excess of permanganate is used, and that even with a pure sodium salt a decided red filtrate is obtained. In the course of some work on the hypophosphites, the results of which were read at the British Pharmaceutical Conference last year, I noticed this apparent mistake, but found that with a pure salt a perfectly colourless filtrate was obtained. The apparent excess of permanganate is required because the reaction takes place in neutral solution, and under these conditions the permanganate does not give up $2\frac{1}{2}$ atoms of oxygen as stated by Mr. Typke, but only $1\frac{1}{2}$ atoms. The reactions may be expressed by the two equations:—

I. In acid solution:—

$$\left.\begin{matrix}5NaPH_2O_2 + 4KMnO_4 \\ 6H_2SO_4\end{matrix}\right\} = \left\{\begin{matrix}2K_2SO_4 + 4MnSO_4 \\ 5NaPH_2O_4 + 6H_2O\end{matrix}\right.$$

II. In neutral solution:—

$$\left.\begin{matrix}3NaPH_2O_2 + 4KMnO_4 \\ 2H_2O\end{matrix}\right\} = \left\{\begin{matrix}4KOH + 4MnO_2 \\ 3NaPH_2O_4\end{matrix}\right.$$

The amounts given in the B.P. agree fairly well with those required for the last equation. 0·5 gramme $NaPH_2O_2$ requires by theory 1·19 grammes $KMnO_4$. B.P. requires 1·15 grammes. This is in accord with an observation of mine that a salt containing about 97 per cent. $NaPH_2O_2$ will pass the permanganate but not the lead acetate test. I have repeated the permanganate test of the B.P. with the following results:—Using a perfectly pure sodium salt which passed the lead acetate test I found:—(1) That 25 C.c. of water as directed in the B.P. is not sufficient, and unless more water is added the paste formed bumps and boils over. (2) The filtrate after ten minutes' boiling is quite colourless. (3) The liquid is alkaline to test paper. (4) The brown precipitate formed evolves chlorine when heated with hydrochloric acid. These facts show that the reaction proceeds according to equation II. Mr. Typke has probably overlooked the fact that an accurate method of assay of hypophosphites was published by me a few months ago, and by the use of that method manufacturers would be able to state the actual amount of hypophosphite contained in each batch. The permanganate method has been shown to be inaccurate and unsatisfactory by Lunan, Moerk, Amat, Tyrer, and myself. If manufacturers are unable to supply pure salts, viz., those that will stand the lead acetate test, it would be desirable that they should indicate the percentage of impurity present.

London, February 28, 1899. H. A. D. Jowett, D.Sc.

The Poison Regulations.

Sir,—You report in this week's issue that a letter from Mr. Bremridge to a dispensers' association states that the new Poison Regulations do not apply to public dispensers. I think there must be some error [None! Ed. *P.J.*], as the word dispensing occurs in the order. Surely there is even greater need for their observance in public dispensaries than in the ordinary pharmacy, the number of persons having access being so much greater, and the observance of such regulations would have the effect of drawing attention to the advisability of confining the dispensing of poisons to the duly qualified chemist, who alone should have charge of such places.

London, February 24, 1899. T. A. Clifford.

Strength of Solution of Strychnine Hydrochloride, B.P.

Sir,—It would be interesting to know how Mr. Squire, in his 'Companion' just published, has calculated that the B.P. solution of strychnine hydrochloride is one-sixth weaker, more especially as he makes no complaint in his monograph on strychnine hydrochloride that the B.P. formula, $C_{21}H_{22}N_2O_{27}HCl,2H_2O$, is incorrect.

Edinburgh, February 20, 1899. George Lunan.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject.*

Lever Top Tins.—Apply to Messrs. Wellen and Co., Sheep Lane, Hackney, N.E. [*Reply to* J. B.—23/22.]

Native Magnesia.—Write to Messrs. Harrington and Co., of Cork, and tell them the purpose for which you require it. [*Reply to* A. W.—23/26.]

Diuretic Mixture.—Potass. acetat., 20 grs.; extract. pareiræ liq., ʒss.; infus. buchu conc. ad ʒii. In cystitis, ammonium benzoate is often used with success. [*Reply to* W. H. D.—23/28.]

Spongio Piline.—The manufacturers are Messrs. R. R. Whitehead and Brothers, Ltd., 10, Endell Street, London, W.C. [*Reply to* G. B. P.—24/16.]

Dispensing on Steamers.—We are not aware that there are any such posts, but inquiries addressed to the secretaries of the leading steamship companies will doubtless elicit the information you require. [*Reply to* E. N.—24/14.]

Substance Igniting on Contact with Water.—The substance you allude to would probably be a composition of calcium phosphide. It is not likely to be sodium, as that body would combine with the moisture of the atmosphere too rapidly to allow it to be prepared in the form you mention. [*Reply to* E. G. C.—24/13.]

Luminous Paint.—See reply to T. T. C. (*P. J.* [4], 8, 94, January 28, 1899). Possibly a saturated solution of phosphorus in linseed oil or olive oil may answer your purpose. A bottle containing such a solution becomes highly luminous on removing the cork. [*Reply to* W. H. B. R.—24/10.]

Fixing the Ammonia of Manure.—To prevent the loss of nitrogen as ammonia in farmyard manure, mix superphosphate with it. This will not only prevent the loss, but will increase the value of the manure as a fertiliser. Commercial superphosphate contains free sulphuric acid as well as calcium acid phosphate, so you will have the ammonia fixed as ammonium phosphate and sulphate. Neither chalk nor gypsum would be likely to suffice for the purpose. [*Reply to* J. A.—23/10.]

Shaving Cream.—(1) Naples white soft soap, 30; oil of sweet almonds, 50; glycerin, 150; rectified spirit, 100; terpineol, 1; oil of sweet orange, ½; oil of bergamot, ¼; water, *q. s.* to produce the desired consistence. (2) Powdered white Castile soap, ½ ounce; lanolin, ½ ounce; glycerin, 1 ounce; otto of rose, 2 minims; oil of petitgrain, 5 minims; oil of bitter almonds, 5 minims; rose water, *q. s.* to produce the desired consistence. (3) White soft soap, 20; spermaceti, 2; jasmin pomade, 1; oil of sweet almonds, 1; melt together and stir until cold. [*Reply to* D. E. L.—24/9.]

Visual Distance for Parallel Rays.—No one insists upon your using six metres for testing the sight for distance, but you should know that it is the nearest point to the eyes at which no convergence is exerted, and therefore, no accommodation induced thereby. The degree of divergence of the light from that distance is also very small. The very first and most simple principles of optics teach us that accommodation and convergence are not relaxed at $1\frac{1}{2}$ metres, for if parallel rays are converged by a + ·66, so as to meet at a distance of $1\frac{1}{2}$ metres, then rays diverging from that distance must require the same power lens to render them parallel and in an emmetropic eye that amount of accommodation must be exerted. As for convergence, the eyes are converged when observing an object at $1\frac{1}{2}$ metres. All scientific test types are made for a 6 metre test. [*Reply to* A. L.—172/40.]

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Eudermol. Under this name nicotine salicylate ($C_{10}H_{14}N_2C_7H_6O_3$) is being manufactured for use in the treatment of skin diseases. It is said to contain 54 per cent. of nicotine, and is in the form of hexagonal, transparent, colourless crystals, which dissolve at a temperature of 117°·5 C., and are soluble in water, alcohol, etc., as also in olive oil and traumaticin. It is claimed not to cause irritation of the skin like naphthalin, naphthol, and some other preparations, nor to produce albuminuria like tar and naphthaline or to cause the symptoms of intoxication like nicotine soap. It is also free from objection on account of its odour, and does not soil the body linen. Eudermol is generally applied in the form of ointment, with yellow paraffinum molle as a basis ; it is also used as a solution in olive oil or in traumaticin, and in the form of soap.

Value of Eucalyptus Oils. W. J. Brownscombe dissents from Dr. Benjafield's statement that oil distilled from other kinds of *Eucalyptus* than *E. globulus* are comparatively useless. Such a statement, he contends, is utterly without foundation in fact, oils on the market from other species frequently answering the tests of the new Pharmacopœia even more closely than the oil of *E. globulus*, as well as containing a larger percentage of eucalyptol. Certain oils from *E. globulus*, in fact, will not respond to all the official tests, and are therefore as certainly excluded by the Pharmacopœia requirements as the oils of other species. The Pharmacopœia Committee has ignored the geographical sources of eucalyptus oil as a matter of importance, and considering the widely differing sources from which the oil is obtained—and the consequent variations of season, soil, and climate—it is little wonder that there should be variation in the product of one and the same species of *Eucalyptus*.—*Lancet*, 3940, 632.

Irritation Movements in Plants. Herr F. Czapek proposes the term "æsthesia" for the capacity of an organ to respond to a definite physical stimulus. It may take the form of "photo-," "geo-" or "chemo-æsthesis." The phenomena of this reaction may then be classed under the following heads :—"Taxis," or movement (photo- or geo-taxis) ; "tropism," or curvature ; "strophism," or twisting ; "trophy," or increase in thickness ; *auxesis*, or a new formation of organs ; "stasis," the acceleration, and "dolichosis," the retardation of growth ; "anisotropy," being a general term for any inequality in the external response to reaction. The author compares the movements of irritation in plants to the reflex movements in animals. The period of impact he defines as the "presentation" period, that between the commencement of irritation and that of the reaction as the "reaction" period ; that during which the organ retains the capacity to react as the "impression" period. As a rule, the geotropic presentation period lasts for about fifteen minutes at 25° C. The heliotropic irritation-period is shorter ; in other words, plants are more sensitive to light than to gravity. The sensitiveness increases with a rise of temperature. Microscopic examination fails to detect any difference between an irritated organ and one not irritated. On the other hand, microchemical examination indicates an increase, under the influence of geotropic stimulus, of aromatic oxidisable substances, and a decrease of oxygen-carrying substances ; but this is not the case with heliotropic stimulus.—*Pringsheim's Jahrbücher*, 32, 175.

Formation of Starch in Chromatophores. According to Herr H. Winkler, the capacity of leaves to produce starch out of nutrient organic substances is not lost even when they are etiolated. In the autumnal decay of foliage it may be retained so long as the stroma of the disorganising chlorophyll grains remains intact. The leucoplasts which are found in the various tissues of leaves, so far as they do not contain starch in the normal condition, with a few exceptions possess this capacity when treated with sugar. The conclusion arrived at is that, at least originally, the formation of starch is a special function of the chromatophores of the higher plants.—*Pringsheim's Jahrbücher*, 32, 525.

Sugar from Albumin. Some time ago Blumenthal reported that he had obtained a sugar from white of egg by treatment with hydrochloric acid, and that it was probably a product of the dissolution of the albumin molecule. Subsequently several other observers obtained similar results, and in following up the inquiry with Paul Meyer a sugar was obtained from the albumin of egg yolk. Analysis showed that both this sugar and that obtained from white of egg albumin was a hexose. Judging from the characters of the osazone it was not mannose or fructose, and the question whether it was galactose or glucose was not positively settled. Moreover, it appeared that other carbohydrates could be eliminated from albumin, forming osazone compounds similar to that of the pentose obtained from nuclein. In regard to the question as to the origin of the carbohydrate obtainable in this way, Blumenthal agrees with Krawkow in thinking that it should not be regarded as an integral part of the albumin molecule, since they were able to ascertain that after the separation of the carbohydrate group a residue remained having the characters of albumin, but no further carbohydrate could be obtained from it by repeating the treatment with acid. Hence they infer that in the elimination of the carbohydrate there is no dissolution of the albumin molecule as in the case of putrefaction or in pancreatic digestion. More probably the albumin molecule, having a varied capacity of combination with other substances, such as acids and alkalies, is capable of entering into combination with carbohydrates and forming compounds analogous to glucosides.—*Berichte*, 32, 274.

Explosive Value of Acetylene. Frederick Grover has conducted a series of experiments in order to determine the value of the application of acetylene gas to internal combustion engines, with the result that fuller information has been obtained as to the explosive properties of acetylene. He found that no weaker mixture than 18 volumes of air to 1 of acetylene gas can be exploded at atmospheric pressure, 15 to 1 being the weakest mixture of coal-gas and air that can be fired under the same conditions. The explosive capabilities of acetylene were tested by admitting a known volume of the acetylene gas to a cylinder, allowing time for its diffusion therein and igniting the mixture by electricity. The pressure developed was measured by means of a Crosby indicator, the pencil of which worked upon a drum revolving at a known speed. In this way the proportions of acetylene and air, the time taken to complete the inflammation, and the pressures developed were observed. The researches point to the usefulness of acetylene in engines where coal-gas is now ordinarily used, and show that it will compete effectually with other methods of obtaining motive power. It is probable that the efficiency of acetylene motors will reach 35 per cent., chiefly by an increase in the speed of revolution.—*Science Gossip*, 58, 294.

THE INFUSIONS OF THE 1898 PHARMACOPŒIA.

BY FREDERICK BASCOMBE, F.I.C.

Although much has been written criticising the changes adopted in making many of the preparations of the new Pharmacopœia, I have not observed any report of a complete examination of the infusions. The object of this paper is to show the amount of extractive yielded by each infusion, and to compare the results with the residues obtained by Martindale and Cripps from infusions of the B.P. 1885, which were published in the *Pharmaceutical Journal* of November 16, 1895, and November 13, 1886.

In the new Pharmacopœia there are twenty-two infusions, six less than in the B.P. 1885, seven of the 1885 Pharmacopœia have been omitted, one new one added, viz., scoparii, presumably to take the place of one of the many deleted decoctions. Twenty infusions are made with boiling water; two—quassia and calumba—with cold. Nineteen are to be infused for fifteen minutes, senega and calumba for half an hour, and cinchona for one hour. It is interesting here to note that the directions for adding the acid in preparing the cinchona infusion are now very explicit, and that this is necessary I have had practical experience, having once seen a candidate for the Minor examination add the acid after straining, his reason for so doing being that it "made a much brighter infusion!" I notice quassia is to be infused in a covered vessel, whereas calumba is not ordered to be treated in such a dignified manner. Why the two infusions prepared with cold water have different directions I am unable to explain, as in 1885 both of these received like attention. Chiretta and cusparia are now made with boiling water instead of at 120° F., and the advantage in extractive as regards chiretta is very marked, but cusparia yields slightly less residue from the No. 20 powder.

Evidently the authorities have been guided to a very great extent by the experiments of Martindale, who, in the paper above alluded to, strongly advocated a much shorter time and greater uniformity in the proportion of ingredients. His suggestion, however, of boiling water for quassia has not been adopted. In my opinion heat is unnecessary, the bitter principle being readily soluble in cold water. Although less quassia is used than in 1885, the new infusion in one ounce doses is sufficiently bitter when given as a vehicle.

Let me state that in every instance the B.P. method has been strictly followed as regards time and comminution; that the drugs used may be considered average specimens—they were purchased at three dispensing establishments in different parts of the metropolis.

The chief alterations in the conditions of the drugs are:—buchu (leaves from *Barosma betulina* only) to be freshly broken; cascarilla, serpentary, and senega to be in No. 10 powder; cusparia and digitalis to be in No. 20 powder; and rhatany to be *bruised* only.

As some pharmacists may use Alexandrian and others East Indian senna leaves, it was thought expedient to make infusions from both, and as the amount of extractive varied from three samples of each kind, the mean is shown in the table. It will be noticed that boiling water extracts about the same amount from each.

Barosma betulina yields a slightly lower extractive than *B. serratifolia*, the figures being:—*B. betulina*, 0·946, *B. serratifolia*, 1 038; but the former gives an infusion with a much stronger aroma and more resembling in odour that of peppermint, this is particularly noticeable in the concentrated form.

The method adopted for estimating the extractive was by taking a given quantity of the infusion after standing for four hours, and evaporating over a water-bath, drying at 100° C., until it ceased to lose weight. Specific gravities were in every case taken at 60° F.

From these experiments it may be deduced that apart from the reduction of time being a great advantage to the dispenser, the extractives in the case of inf. buchu, digitalis, gent. co., lupuli, senegæ, and serpentariæ practically agree with those of the 1885 B.P. Rhatany, however, if only bruised, yields considerably less than when made with No. 40 powder and infused for one hour, and uvæ ursi is also lower in extractive than in the corresponding infusion of 1885.

The foregoing experiments were made in the laboratory of Messrs. Fletcher, Fletcher and Co., and I have to tender my thanks to Mr. J. B. Lloyd for assistance in carrying out many of the details.

Infusion.	Condition of drug.		B.P. 1898.			B.P. 1885.		
	B.P. 1885.	B.P. 1898.	Strength.	Specific Gravity.	Percentage of Extractive at 100° C.	Strength.	Extractive in grains from 100 fl. grains (Martindale).	Solid residue per cent. (Cripps).
Aurantii	—	—	1-20	1·005	1·16	1-20	—	—
Aurantii Co.	—	—	B.P.	1·005	1·138	B.P.	—	—
Buchu	Bruised	Freshly broken leaves from *Barosma betulina*	1-20	1·005	·946	1-20	·825	·984
Calumbæ	Cut small	Thinly sliced	1-20	1 001	·5982	1-20	—	·425
Caryophylli	—	—	1-40	1 006	·882	1-40	·600	—
Cascarillæ	No. 20 powder	No. 10 powder	1-20	1·005	·385	1-10	·800	1·150
Chiratæ	—	—	1-20	1·003	·340	1-40	·050	—
Cinchonæ Acidum	—	—	1-20	1·003	1·140	1-20	—	·696 ·770
Cuspariæ	No. 40 powder	No. 20 powder	1-20	1·005	1 158	1-20	1·275	1·584
Digitalis	Whole leaves	No. 20 powder	60 gr. in 1 pint	1·000+	·240	56 gr. to 1 pint	·200	·253
Ergotæ	Crushed	Freshly crushed	1-20	1·0035	·606	1-40	·600	—
Gentian. Co.	Gentian root sliced	Gentian root thinly sliced	B.P.	1·004	1·080	B.P.	·900	1 094
Krameriæ	No. 40 powder	Bruised	1-20	1·003	·670	1-20	·975	·896
Lupuli	Whole hops	Freshly broken	1-20	1·008	1 368	1-20	1 375	1 059
Quassiæ	Chips	Finely rasped	80 gr. to 1 pint	1·0005	·017	1-80	—	—
Rhei	—	—	1-20	1 006	1·82	1-40	1·225	·538
Rosæ Acidum	Dried petals broken up	Petals, dried and broken	B.P.	1·010	2·008	B.P.	—	—
Scoparii	—	—	1-10	1·003	·526	—	—	—
Senegæ	No. 20 powder	No. 10 powder	1-20	1·005	1·56	1·20	1·525	1 512
Sennæ from Alexandrian leaves	—	—	B.P.	1·019	3·49	B.P.	3·775	2·705
,, ,, Tinnivelly ,,	—	—	B.P.	1·017	3·23			
Serpentariæ	No. 20 powder	No. 10 powder	1-20	1·003	·558	1-40	·325	·381
Uvæ Ursi	—	—	1-20	1 008	1 676	1-20	1·925	2·078

CHEMISTRY OF THE MORE IMPORTANT PROCESSES OF PHOTOGRAPHY.*

BY EDGAR M. CHAPMAN, PH.C.

(*Concluded from page 181.*)

Toning.

This is usually done by depositing metallic gold upon the image; other metals are also used, such as platinum, and mixtures of gold and platinum, gold and lead, and gold and uranium. The gold is used in the form of sodio chloride of gold, $AuCl_3NaCl,2H_2O$, which salt contains just half its weight of metallic gold. The toning solution for gelatino-chloride paper usually consists of a mixture of sodio chloride of gold and sulpho-cyanide of ammonium, or else a mixture of these two salts with the addition of an acetate, carbonate, phosphate, or other salt of a weak acid. The object of which is to combine with any free acid which is liberated from the reduction of the gold chloride, liberating in turn a weaker acid, such as acetic, carbonic, etc.

Now, it is a property of gold salts that they are most readily reducible—almost any reducing agent, organic or inorganic, will precipitate the gold from gold chloride. The toning solution may therefore be looked upon as containing a potential deposit of metallic gold, ready to be deposited on any reducing surface that it may come in contact with. The reduction products of the silver chloride and organic silver salt forming the picture act as reducing agents, and thus become coated with a deposit of gold, which causes the change in colour. The unchanged silver chloride and organic salts cause no reduction, and therefore receive no deposit of gold.

The colour of finely divided gold, precipitated from a solution of one of its salts, depends upon the state of concentration and the rate at which it is deposited. If the deposition take place slowly, we get a red form of gold, but if deposited rapidly the gold particles are blue. In order to get the requisite purple tones it is necessary to obtain the blue form, hence the deposition of gold must be rapid; and to obtain this the bath must be kept neutral, since the presence of any free strong acid prevents the deposition of the gold rapidly. When the print has been toned to the required colour, which is judged by examining it by transmitted light, it is washed and then fixed by placing in a strong solution of sodium thiosulphate. This removes all the unaltered silver chloride and silver organic salt. It decomposes the reduction product of the silver chloride, reducing it to metallic silver, but does not alter the reduction compound of the organic silver salt. Hence in the finished print we have the reduction product of the organic silver salt mixed with varying proportions of metallic gold and silver, all three forming the coloured picture.

Sometimes what is known as a "combined toning and fixing" bath is used. This usually consists of a mixture of gold chloride and ammonium sulphocyanide, to which a large proportion of sodium thiosulphate has been added. By this means the prints are toned and fixed at the same time, but it is doubtful whether there is any advantage gained by this method.

The next printing process which I shall briefly describe is a very simple one, and very well illustrates the forms of paper which require developing after printing. This paper is called

Ferro-Prussiate Paper.

It is very little used now, but is occasionally used to take a proof from a negative. It is also used to a fairly large extent for copying plans, by using a plan drawn upon tracing paper as the negative and exposing to the light. The paper is prepared by coating one side with a solution of a mixture of ammonio-citrate of iron and ferricyanide of potassium, and then allowing to dry in the dark. This paper is exposed in the same manner as gelatino-chloride paper, and for about the same length of time. Wherever the light acts upon the paper the ferric salt in the ammonio-citrate is reduced to the ferrous state, the organic acid and the paper acting as sensitisers. When it is printed the picture is very indistinct, so therefore requires developing to bring out the detail. This is done by placing the print in water, when the ferrous salt dissolves and immediately combines with the ferricyanide of potassium, giving a precipitate of Turnbull's blue, which forms the picture. This is then placed in water containing a little hydrochloric acid, which increases the brilliance of the colour and removes all the unaltered ammonio-citrate of iron and ferricyanide of potassium, and thus it is fixed.

Bromide Printing.

The paper used in this process is coated with an emulsion of the haloids of silver in gelatin, and is practically identical with the emulsion used for dry plates, except that it contains a greater proportion of iodide of silver, and the emulsion is not ripened to the same extent. It is used either for contact printing by means of the printing frame, or for making enlargements by means of the enlarging camera. For contact printing artificial light is generally used, whilst for enlargements daylight is preferable. The time of exposure is very small compared with gelatino-chloride paper, varying from one or two seconds to one or two minutes. The exposure, as in the case of dry plates, causes no visible image to appear, but the latent image produced requires developing. The manipulation of developing and fixing are practically the same as for dry plates, and the reactions and developers are the same. Therefore it would be superfluous for me to say anything further about the chemistry of this process, as these principles have been already dealt with in describing the development and fixing of the gelatino bromide plates. The picture therefore is composed of metallic silver.

The developer most universally used is the ferrous oxalate developer, which I have already described, but any of the others, such as hydroquinone, metol, etc., can be used. By means of a toning process introduced by the Eastman Photographic Company, the delicate grey or greyish-black tone obtained with bromide papers can be converted into sepia or rich-brown tones. This process consists of treating the print with a hot solution of alum and sodium thiosulphate, and then well washing to free from the thiosulphate. The next process, to which I must devote a little time, is the

Platinotype Process.

The paper used in this process is first sized with a solution of gelatin, then it is sensitised by immersion in a solution containing a mixture of ferric oxalate and chloroplatinite of potassium, and then dried in the dark. After being dried the paper must be kept perfectly free from moisture, otherwise it will be spoilt. For this reason the Platinotype Company send out the paper in hermetically sealed tins, which contain chloride of calcium. The exposure is made in a similar manner to the ordinary gelatino-chloride paper, but requires only about one-third of the time. It is printed till the outlines of the picture can be seen, but no details are apparent. There are two kinds of paper sold, the one requiring a hot developer, and the other can be developed in a cold one. The developer used is a solution of potassium oxalate. In the case of the hot developer the temperature should be about 170° to 180° F.

The chemistry of the process is comparatively simple. The ferric oxalate in the paper is reduced by the action of light to

* Read before the School of Pharmacy Students' Association.

ferrous oxalate. This slightly reacts with the chloroplatinite of potassium, reducing a small portion of it to the metallic state, which gives the faint image seen in the undeveloped print. Now, since ferrous oxalate is soluble in potassium oxalate, on immersing the print in the developer, the ferrous oxalate which has been formed by the action of light is dissolved, and at the moment of its solution reacts with the chloroplatinite of potassium, reducing an equivalent quantity to the metallic state, according to the following equation :—

$$3K_2PtCl_4 + 6FeC_2O_4 = 3Pt + 2Fe_2(C_2O_4)_3 + Fe_2Cl_6 + 6KCl$$

The print is finally fixed by repeated washing in water containing dilute hydrochloric acid, which removes all the unaltered ferric oxalate and chloroplatinite of potassium. There is another form of platinotype paper, called

Pizzighelli's Printing-Out Platinotype Paper.

It is prepared in a similar manner to the ordinary platinotype paper, but with slight modifications, and when dry it is such that the ferrous oxalate formed when the print is exposed reduces the chloro-platinite immediately to metallic platinum. By this means it is only necessary to remove the print, when printed deep enough, from the printing frame, and to fix it by immersion in dilute solution of hydrochloric acid.

There still remains one more printing process which I must mention, and that is the

Carbon or Autotype Process.

It is called the carbon process, on account of carbon being used as the pigment for making black and white prints. The paper used in this process is coated on one surface with a mixture of gelatin and some pigment (the colour of which depends upon the colour the required print is to be), and then allowed to dry. When required for printing upon, it is sensitised by floating the paper upon a solution of bichromate of potassium, and then again drying, in the dark this time. The process is based upon the action of light upon this film of chromatised gelatin; wherever the light reaches, the gelatin is rendered insoluble, even in hot water.

The paper is exposed in the usual way. But as the appearance of the paper before and after printing is precisely the same, it is impossible to tell when it is printed by examining the print. This is usually accomplished by exposing a piece of gelatino-chloride paper under a negative of about the same density, and placing it alongside of the carbon print. When the gelatino chloride paper is printed the carbon will be finished. The paper is then removed from the printing frame and immersed in cold water, which removes a great deal of the bichromate of potassium, and also makes the print lay out flat. It is then floated on to what is known as a support, and pressed firmly upon it, face downwards, and allowed to remain for five or ten minutes. Then the support, together with the print, is placed in hot water for a short time, and when the gelatin commences to ooze out at the edges the print is removed by stripping from the support, thereby leaving the greater quantity of the gelatin and pigment upon the support. The gelatin and pigment are then treated with hot water by running the hot water over the face of the support by means of a sponge. This removes the soluble gelatin, and leaves the gelatin, together with the pigment it contains, which was acted upon by light; this then constitutes the picture.

The reason for transferring the gelatin film is quite apparent, since the greater portion of the unacted upon gelatin will be at the back of the film, and in order to get at it to remove it, it is necessary to transfer it to a support. In this condition the print can be dried and mounted, but on consideration it will be seen that the picture is in a reversed position, that is to say, that the right-hand side of the original has become the left, and *vice versâ*.

If the picture be finished in this condition, it is said to have been done by the "single transfer method." In some instances this reversal would be of no consequence, such as some portraits, but with views which are known this would never do. In order to remedy this state of affairs, the picture is transferred once more, by pressing, whilst wet, upon another support, and allowed to dry upon it; when separated, the picture remains upon the latter support, and is in its right position. This is what is known as the "double transfer method." When the double transfer method is used, the first support consists of a specially prepared support, which has been waxed in order to prevent the picture from adhering permanently to it; this is then known as a "temporary support." The paper upon which the print is finally received is prepared with a coating of gelatin, and is known as the "final support."

UGANDA ALOES.

BY E. M. HOLMES, F.L.S.

Curator of the Museums of the Pharmaceutical Society of Great Britain.

Specimens of a new variety of aloes recently imported from Uganda have been presented to the Museum of the Society by Messrs. Hearon, Squire and Francis, and as the article appears to be most carefully prepared, and has come over in commercial quantity, a brief notice of its distinctive characters and appearance may be of use to pharmacists. According to information supplied by the donors, the present importation consists of twenty packages of about 40 lbs. each, of which the contents present five forms :— (1) 4-lb. bags of coarse powder; (2) 4-lb. bags of fine grains; (3) 4-lb. bags of coarse grains; (4) 1-lb. bricks wrapped in red paper, and (5) chips. The powder and grains are in canvas bags with the Crown stamp on them. The red paper in which the "bricks" are wrapped bears the inscription "all 'Crown' aloes is sundried, and is guaranteed absolutely pure," and is signed by the manager of the Crown Aloes Works. The bricks are of a hepatic brown colour, externally dusted over with a brownish-orange powder, and the surface is marked with numerous slender, oblique cracks. The transverse surface where broken presents a resinous fracture, with a bronzy-gold lustre by reflected light, due to an immense number of minute cracks, visible only under a powerful lens. Splinters are translucent, as in Socotrine and the best Zanzibar aloes, but have not the garnet-red tint present in good samples of those aloes. The odour is very aromatic, and intermediate between Cape and Socotrine aloes. The taste is aromatic, but very bitter. If a little of the powder is touched with strong nitric acid it forms at first a brown solution, which gradually becomes changed through a dull brownish-yellow to a deep green colour, in which respect it resembles some samples of Cape aloes. Under the microscope, whether examined in water or alcohol, it does not show a crystalline structure, but in oil of cloves a number of extremely minute crystals can be seen by careful focussing. It therefore more nearly approaches Cape aloes in chemical and microscopical characters, but differs from that drug in its colour and opacity, from Natal aloes in not giving a crimson colour with nitric acid, and from hepatic aloes in not presenting numerous minute masses of crystals when examined in water or alcohol. Its activity as a medicine has not yet been determined, but so far as its purity and appearance go, it is apparently one of the purest and most carefully prepared aloes in the market. It has been sold at five pounds per hundredweight.

PHARMACY IN BRITISH GUIANA.

The following is the text of the proposed Ordinance—referred to by the President of the Pharmaceutical Society at the meeting of the Council last week—for regulating the practice of pharmacy and the sale of poisons in British Guiana :—

A Bill entitled An Ordinance to provide for the Examination and Registration of Chemists and Druggists and to Regulate the Sale of Drugs and Poisons.

WHEREAS it is expedient for the safety of the Public that Persons keeping open shop, for the Retailing, Dispensing, or Compounding of Drugs, or Poisons, and Persons known as Chemists and Druggists should possess a competent and practical knowledge of their business.

Be it therefore enacted by the Governor of British Guiana, with the advice and consent of the Court of Policy thereof, as follows:—

Preliminary.

1. Short Title.—This Ordinance may be cited as the Pharmacy and Poisons Ordinance, 1899.

2. Commencement of Ordinance.—This Ordinance shall come into operation on April 1, 1899.

3. Interpretation of Terms.—In this Ordinance, unless the context otherwise requires,—

"The Association" means the Chemists and Druggists' Association of British Guiana.

"Drug" includes medicine, compound medicine and medicinal preparation.

"Poison" includes the articles named or described in Schedule I. to this Ordinance and any other articles which the Governor, on the recommendation of the Council of the Association or on being otherwise satisfied of the expediency of so doing, may, by notice in the Gazette, declare to be included in either part of the said schedule.

Examination.

4. Examining Board.—(1.) For the purpose of this Ordinance a Board of Examiners shall be appointed, which shall consist of the Surgeon-General and two duly registered Medical Practitioners, to be appointed by the Governor, and of three members of the Association, to be selected as hereinafter provided. The Surgeon-General shall be Chairman of the Board.

(2) The Council of the Association shall without delay after the commencement of this Ordinance select three members of the Association to be Examiners, and submit their names to the Governor for approval, and shall from time to time thereafter, when any vacancy by death, resignation or otherwise occurs, select and submit, for the Governor's approval, some other member of the Association to be an Examiner in the place of any one of the three Examiners previously selected and approved of as aforesaid.

5. Its Duties.—The Board of Examiners appointed under this Ordinance shall examine all such persons as tender themselves for examination, in compliance with this Ordinance and any regulations affecting examinations which may be made by the Association.

6. Examinations.—The examinations to be passed by persons desiring to be registered under this Ordinance shall be such as are from time to time required by the Bye-laws of the Association, and the Association shall make Bye-laws regulating the subjects, time, method, and conduct of examinations, and the certificates as to character and previous training to be required from persons desiring to be examined.

Registration.

7. Right of Successful Candidates to be Registered.—(1.) Every person who is examined by the Board of Examiners and obtains from them a certificate of competent skill, knowledge, and qualification shall on payment of the prescribed fee be entitled to be registered as a Chemist and Druggist under this Ordinance.

(2.) The Board of Examiners shall on the application of any person who has successfully passed the examination hereinbefore mentioned give to him a certificate in the following form :—

No.
British Guiana.

The Board of Examiners of Chemists and Druggists in the Colony of British Guiana hereby certifies that

of

has been duly examined and is duly qualified to be registered as a Chemist and Druggist under the Pharmacy and Drugs Ordinance, 1899.

Given at Georgetown, this day of
18

A. B.
President of the Board of Examiners.
C. D.
Member of the Board of Examiners.

8. Persons Entitled to be Registered Without Being so Examined.—(1.) (*a.*) All persons who at the commencement of this Ordinance are legally qualified to practise as Druggists in dispensing and compounding of drugs ;

(*b.*) All persons who have continuously been practising as druggists in dispensing and compounding drugs since the 1st of April, 1890, and of whose competency to dispense and compound drugs the Board of Examiners is satisfied by the certificate of two duly qualified medical practitioners each of ten years' standing ;

(*c.*) All persons holding certificates of competency as Chemists or Dispensers granted by the Medical Board under the Medical Ordinance, 1886 ; and

(*d.*) All persons entitled to practise in Great Britain as Apothecaries or Pharmaceutical Chemists, or holding a certificate of competency given by any person or body authorised, by the law of any British possession, to give such certificate,

shall be exempted from the obligation of passing the examination hereinbefore mentioned, and shall be entitled on obtaining the certificate hereinafter mentioned, and on paying the prescribed fee, to be registered under this Ordinance :

Provided always that any Person of the first, or second or third of the classes just mentioned who desires to register under this section must obtain from the Board of Examiners the certificate hereinafter mentioned and apply for registration within one year after the commencement of this Ordinance.

(2.) The Board of Examiners shall on the application of any Person desiring to be registered under this section and on being satisfied that he is exempted from the obligation of passing the examination hereinbefore mentioned give to him a certificate in the following form :—

No.
British Guiana.

The Board of Examiners of Chemists and Druggists in the Colony of British Guiana hereby certifies that

of

is exempted from the obligation of passing the examination prescribed by the Pharmacy and Drugs Ordinance, 189 , on the following ground (namely) that he
and is duly qualified to be registered as a Chemist and Druggist under the said Ordinance.

A. B., President of the Board of Examiners.
C. D., Member of the Board of Examiners.

9. Appointment of Registrar, etc.—The Council of the Association shall, within two months after the commencement of this Ordinance, and thereafter as occasion may require, appoint a fit and proper person as Registrar and may remove any Registrar from office, and may appoint and remove a Deputy Registrar, and such Clerks and other subordinate Officers as may be requisite for carrying out the purposes of this Ordinance, and may pay such salaries as it deems suitable to the Registrar, Deputy Registrar, Clerks, and Officers.

10. Registrar's Duties.—The Registrar shall make and keep a correct Register as nearly as may be in accordance with form A, set forth in Schedule II. to this Ordinance, of all persons registered under this Ordinance, and from time to timo erase the names of all registered persons who have died and make all necessary alterations in the addresses of the persons registered. If a registered letter is sent by post to any registered person, according to his address on the Register, to inquire whether he has changed his address, and no answer is returned within three months, and a second letter of similar purport is sent in like manner and no answer is given thereto within one month from date thereof, the name of such persons may be erased from the Register : provided always that the same may be replaced thereon by direction of the Council of the Association should they think fit to make such order.

11. Notification to him of Chemists' Death.—Every Registrar of Deaths on receiving notice of the death of any Chemist and Druggist shall forthwith transmit by post to the Registrar under this Ordinance a Certificate of such death with particulars of time and place, and on receipt of such certificate the Registrar under this Ordinance shall erase the name of such deceased Chemist and Druggist from the Register, and transmit to such Registrar of Deaths the cost of such certificate and transmission and may charge the cost as an expense of his office.

12. Removal of Name from Register.—(1.) The Board of Examiners may on the recommendation of the Court in which the case is tried direct the removal from the Register, for such time as it thinks fit, of the name of any person who is convicted for the first time of any offence against this or any other Ordinance which in its opinion renders such person unfit to be a druggist, and shall on a second conviction of any such offence direct the permanent removal from the Register of the name of the person convicted.

(2.) The Registrar shall without delay comply with any direction of the Board of Examiners under this section.

(3.) Any person whose name has been temporarily removed from the Register shall on the expiration of the period for which such removal was to continue, be entitled, on payment of the prescribed fee, to have his name replaced on the Register.

13. Publication of Register.—The Registrar shall in the month of January in every year cause to be printed and published a correct Register of all persons registered as Chemists and Druggists on the thirty-first day of December preceding, and in such Register the names shall be in alphabetical order according to the surnames, and it shall be in accordance with the form A. set forth in Schedule II. to this Ordinance: such printed Register shall be called the Register of Chemists and Druggists, and a printed copy of such Register for the time being, purporting to be so printed and published as aforesaid, shall be evidence, in all Courts of Law, that the persons therein specified are registered under this Ordinance; and the absence of the name of any person from such printed Register shall be *primâ-facie* evidence that such person is not registered under this Ordinance.

14. Certificate of Registrar.—The Registrar appointed under this Ordinance shall on the application of any person, paying one shilling, certify under his hand whether the name of any person whose name and address is furnished to him appears on the Register or not, and any such certificate purporting to be signed by the Registrar shall be admissible in evidence in all Courts of Law without proof of such signature, and shall be *primâ-facie* evidence of the facts certified.

15. Offences.—Any Registrar who wilfully makes or causes to be made any falsification of the Register, and any person who wilfully procures or attempts to procure himself to be registered under this Ordinance by making or producing or causing to be made or produced any false or fraudulent representation or declaration either verbally or in writing, and any person aiding or assisting him therein shall be deemed guilty of misdemeanour, and on conviction be liable to a penalty not exceeding forty-eight dollars, or imprisonment for a term not exceeding twelve months.

16. Persons not to be Registered.—No person who is a member of the Medical Profession or who is practising under a degree of any University or under a diploma or licence of a Medical or Surgical Corporate Body shall be entitled to be registered under this Ordinance; and if any registered Chemist and Druggist obtains such diploma or licence his name shall not be retained on the Register during the time that he is engaged in such practice.

17. Limit of Effect of Registration.—Registration under this Ordinance shall not entitle any person to practise medicine or surgery or any branch of medicine or surgery.

18. Evidence before Registration, etc.—(1.) No name shall be entered on the Register unless the certificate hereinbefore mentioned is produced and the Registrar is satisfied of the identity of the person named therein and of the person claiming to be registered.

(2.) Any person aggrieved by the decision of the Registrar may appeal therefrom to the Council of the Association.

(3.) Any entry proved to the satisfaction of the Council to have been fraudulently or incorrectly made shall be erased from or amended in the Register.

19. Exemption.—Any person duly registered under this Ordinance shall be exempt from serving on any jury.

20. Fees.—Upon every examination and upon registration such fees as are from time to time fixed and determined by the Bye-Laws of the Association shall be paid by the candidate to its Treasurer for the use of the Association.

Provided always that persons who at the commencement of this Ordinance are Members or Associates of the Association and are entitled to be registered under Section eight shall be registered without paying any fee, and all other persons claiming under the said section to be registered shall pay a fee of one dollar only for being registered.

Sale of Drugs and Poisons.

21. Prohibition of Sale of Drugs, etc., by Unregistered Person.—(1.) From and after the 1st April, 1899, no person shall sell or keep open shop for retailing, dispensing, or compounding drugs or poisons unless he is registered under this Ordinance or employs some person who is so registered to personally superintend and manage his business.

(2.) The name or initials of the registered person by or under whose supervision any drugs or poisons are dispensed or compounded, shall be written on a label on the bottle or other package containing such drug or poison, and any label attached to any such bottle or package, and having the name or initials of any registered person written thereon, shall be *primâ-facie* evidence in any case that such drugs or poison were dispensed or compounded by him.

(3.) The person by or in whose name any such open shop as aforesaid is kept, shall see that the provisions of the preceding sub-section are complied with in respect of all drugs or poisons sent from his shop.

22. Sale of Poison to Person under 12.—It shall be unlawful to sell any poison to any person under twelve years of age unless prescribed by a legally qualified Medical Practitioner: any person acting contrary to this section shall be liable to a penalty not exceeding twenty-four dollars.

23. Restrictions on Sale of Poisons.—(1.) It shall be unlawful to sell any poison either by wholesale or retail unless the box, bottle, vessel, wrapper, or cover in which such poison is contained is distinctly labelled with the name of the article and the word poison, and with the name and address of the seller of the poison; and it shall be unlawful to sell any poison named in part one of Schedule I. of the Ordinance, or hereafter added thereto by the Governor, to any person unknown to the seller unless introduced by some person known to the seller; and on every sale of any such article the seller shall, before delivery, make or cause to be made an entry in a book to be kept for that purpose stating in the form in Schedule the date of sale, name and address of purchaser, name and quantity of the article sold, and the purpose for which it is stated by the purchaser to be required, to which entry the signature of the purchaser and of the introducer, if any, shall be affixed.

(2.) Any person selling poisons otherwise than is herein provided shall be liable to a penalty not exceeding twenty-five dollars for the first offence and fifty dollars for any subsequent offence.

(3.) For the purposes of this section the person on whose behalf any sale is made by an apprentice or servant shall be deemed to be the seller.

(4.) This section shall not apply to sales by wholesale to retail dealers in the ordinary course of wholesale dealing, nor to any article when forming part of the ingredients of any medicine dispensed by or under the supervision of a person registered under this Ordinance: provided such medicine be labelled in the manner aforesaid with name and address of the seller, and the ingredients thereof be entered with the name and address of the person to or for whom it is sold or delivered in a book to be kept for that purpose.

24. Inspection of "Poisons Book."—(1.) Any person authorised in writing by the Governor-in-Council, or any Member of the Association or any Officer of Police, or Police Constable authorised in writing by an Officer of Police, may between the hours of eight a.m. and four p.m., of any day (except Sundays, Christmas-day and Good Friday) in the presence of the Druggist inspect the "Sale of Poisons Book" kept by him, and any Druggist refusing or failing within a reasonable time to produce

such book for inspection shall be liable to a penalty not exceeding twenty-four dollars.

(2.) Any such authority in writing shall if required be produced by the person to whom it has been granted before such person shall be entitled to inspect the "Sale of Poisons Book."

25. Sale, etc., of Poison by non-Certificated Assistant, etc., of Druggist prohibited. Penalty.—(1.) No poison shall be sold, dispensed, or delivered by the assistant, apprentice, or shopman of any Druggist unless such assistant, apprentice, or shopman holds a certificate granted under this Ordinance, or sells, dispenses, or delivers the same under the supervision of some person holding a certificate under this Ordinance.

(2.) Any assistant, apprentice, or shopman contravening this section and any Druggist who permits or suffers such assistant, apprentice, or shopman to contravene this section shall be liable to a penalty not exceeding twenty-four dollars.

26. Sign on Shop for the Sale of drugs, etc. Penalty.—Every person having or keeping open shop for the sale of drugs and poisons shall have over the principal entrance of such shop painted in legible characters, at least one inch in length, the name of the person licensed and the words "Licensed to sell Drugs and Poisons." Any person offending against the provisions of this section shall be liable to a penalty not exceeding fifty dollars.

27. Cases to which Ordinance does not Apply.—(1.) Nothing in this Ordinance contained shall extend or apply to,—

(1.) The sale or supply of medicines by any duly qualified Medical Practitioner to his patient;

(2.) The sale or supply of medicines by any duly qualified Veterinary Surgeon in the course of his practice;

(3.) The sale of any drug not being a poison by wholesale to retail dealers other than Chemists or Druggists in the ordinary course of wholesale dealing;

(4.) The sale of any drug or poison to any person registered as a Chemist and Druggist under this Ordinance;

(5.) The sale by any person of the following articles, namely:

(*a.*) Patent, proprietary or homœopathic medicines (subject to the provisos hereinafter contained) if sold in any box, bottle, vessel, or parcel and under wrapper or cover as imported into this Colony or as prepared by any duly registered Chemist and Druggist therein: Provided that such box, bottle, vessel, or parcel is properly secured and bears the seal, name, or trade-mark of the proprietor, inventor or manufacturer thereof and directions for its use; and provided also that nothing herein contained shall be deemed to authorise the sale by an unregistered person of any such medicine as aforesaid containing a poison if the whole contents of any one box, bottle, vessel or parcel if administered in one dose to an adult person would probably cause the death of such person;

(*b.*) Mineral or artificial waters or the salts or other material employed in their preparation;

(*c.*) Simple medicinal substances mentioned in Schedule III.;

(*d.*) Any herb, vegetable, gum, oil or seed (not being a poison), in its natural state or not specially prepared so as to be fitted for medical use only, though the same may be used in medicine;

(*e.*) Articles not being poisons which are to be used for flavouring foods or drinks or for perfumery, painting, tanning, dyeing, soap making, or any other industrial art or manufacture;

(6.) The sale or supply of drugs to an estate's hospital or the dispensing of drugs and medicines at any estate's hospital by a dispenser duly appointed under the Immigration Ordinance, 1891, to any person on such plantation or to any other person under the directions and in accordance with the prescriptions of the Government Medical Officer of the district within which such hospital is; and

(7.) The sale of opium under and in accordance with the Opium Ordinance, 1889.

(2.) From and after the commencement of this Ordinance no licence to sell drugs issued to any person not registered under this Ordinance shall authorise such person to sell drugs or poisons except in the cases and to the extent mentioned in this section, unless such person employs a person so registered to superintend and manage his business as provided by section 21.

28. Prohibition of Unregistered Persons assuming Title of Chemist, etc.—From and after the 1st of April, 1899, no person shall assume or use the title of Chemist and Druggist, or Chemist or Druggist, or Dispensing Chemist, or any name, title, or sign implying that he is registered under this Ordinance or is entitled to practise as a Chemist or Druggist unless he has been duly registered under this Ordinance: provided always that the use of any such title or sign on any shop kept by any person in conformity with section twenty-one of this Ordinance shall not be deemed a breach of this section.

29. Duty of Chemist where Excessive Dose of Poison is Prescribed.—Every Chemist or Druggist who receives a prescription in which the maximum dose of any poisonous drug as laid down in the British Pharmacopœia has been exceeded shall, unless such dose is specially initialled by the prescriber, without delay refer the prescription to him to be initialled if correct before proceeding to dispense the same.

30. Any copy of the Gazette containing what purported to be a declaration of the Governor that any article is a poison, shall be sufficient evidence that such article has been duly added to the schedule of poisons to this Ordinance.

31. Every person who infringes any of the provisions of this Ordinance for the breach of which no penalty is hereinbefore provided shall be liable to a penalty not exceeding twenty-five dollars.

32. Prohibition as to Stale, Unwholesome, or Adulterated Drugs, etc.—No person having or keeping open shop for the sale of drugs or medicines shall sell, or offer for sale, any drug or medicine in a stale or unwholesome state, or in a state unfit for use, and no person shall sell or expose or offer for sale as unadulterated any drug or medicine that is adulterated.

Any person offending against the provisions of this section shall be liable to a penalty not exceeding fifty dollars in addition to and irrespectively of any penalty to which he may be liable in case he shall not be registered under this Ordinance.

33. Power to Seize and Destroy Such Drugs, etc.—It shall be lawful for the Stipendiary Magistrate by whom any person is convicted under the last preceding section to order the seizure and destruction of the whole of the stale, unwholesome, unfit or adulterated drugs or medicines in the possession of such person, in respect of the selling or offering for sale of which or part of which such person has been convicted.

34. Entry and Search for Stale, etc., Drugs.—(1.) Any person authorised in writing by the Governor-in-Council or any member of the Council of the Association may at all reasonable times enter the shop, store, or house of any person registered under or employing (as provided by section twenty-one) a person registered under this Ordinance, and inspect and search the same, and survey, prove and determine whether the drugs and medicines therein are or are not stale, unwholesome or unfit for use as such, and may take samples for further examination or analysis of any drugs or medicines that he may see reason to believe are not fresh, wholesome or fit for use, paying a fair price for the same.

Proceedings on Taking Samples for Analysis.—(2.) When any sample is so taken as aforesaid it shall be lawful for the person from whose shop, store or house it is taken to require the person taking such sample to put two other samples of any such drug or medicine as aforesaid into secure bottles or vessels, and to seal up or otherwise fasten up in such manner as its nature will permit, and to have one of such samples sent to the Government Analyst for examination and report, and the other samples shall be left securely sealed as aforesaid with the person from whose shop, store or house the sample was taken, in order that he may have the same subjected to such independent examination or analysis as he may see fit, and the said person as aforesaid shall thereupon comply with such request.

(3.) The Goverment Analyst shall make such examination or analysis of the sample sent to him as aforesaid as may be necessary to enable him to determine whether or not the same is stale, unwholesome, adulterated, or unfit for use as aforesaid, and shall send a certificate under his hand of the result of such examination

or analysis to the person from whom he has received the same; and in such certificate he shall describe the state of the package or vessel containing the sample aforesaid, and of the seals thereon or other fastenings thereto.

Certificate of Chemist made Evidence.—(4.) In any proceeding taken under this Ordinance the Certificate of the Government Analyst duly signed by him shall if it appears therefrom that the bottle or vessel containing the sample aforesaid had its seals or other fastenings uninjured at the time that he received the same, be *primâ-facie* evidence in any Court of the matters therein specified, and in the absence of any evidence to the contrary shall be sufficient evidence thereof.

35. Any penalty imposed by this Ordinance may be recovered under the Summary Jurisdiction Ordinances.

36. Bye-laws of the Association.—The Council of the Association may make and establish or alter or amend such Bye-laws as they shall deem proper and necessary for the purposes of this Ordinance: provided always that all such original or altered or amended Bye-laws shall be confirmed and approved by a special general meeting of the Association and by the Governor-in-Council, and be published in the Gazette.

37. Membership in the Association.—(1.) Every person who at the commencement of this Ordinance is or has been in business on his own account as a Chemist and Druggist and who is registered as such shall be eligible to be a member or associate of the Association according to the Bye-laws thereof; and every person admitted as such shall be eligible for election to the Council of the Association.

(2.) Every person who is registered as a Chemist and Druggist by reason of having obtained a Certificate of qualification from the Examiners appointed under this Ordinance shall be eligible to be a member or associate of the Association according to the Bye-laws thereof.

38. Repeal.—Section 28 of the Medical Ordinance, 1886, as far as the same relates to granting certificates to Chemists or Dispensers other than Dispensers at Estate's hospitals, and Section 42, so far as the same relates to Chemists, are hereby repealed.

SCHEDULE I.—Part 1.

Acid, Hydrocyanic, and its preparations.
Acid, Prussic, and its preparations.
Aconite and its preparations.
Amyl Nitrate.
Antimony Tartrated.
Antipyrin, Antifebrin.
Arsenic, its compounds and preparations.
Atropine and its preparations and all poisonous Alkaloids and their Salts.
Belladonna and its preparations, except the Plaster spread.
Bichloride of Methylene.
Brucia.
Butyl Chloral Hydrate.
Calabar Bean and its preparations.
Cantharides.
Chloral Hydrate.
Cocaine and its Salts.
Corrosive Sublimate.
Croton Oil.
Curare.
Cyanide of Potassium and all Cyanides and Sulpho-Cyanides.
Elaterium and its preparations.
Ergot and its preparations.

Jaborandi and its preparations.
Nicotine.
Nitro-Glycerin.
Nux Vomica, its active principles and preparations.
Paraldehyde.
Phosphorus.
Resorcin.
Savin and its preparations.
Strychnine and its preparations.
Vermin Killers, containing any Poison in this part of this Schedule.

SCHEDULE A—Part 2.

Acid Acetic, Glacial.
Acid, Carbolic.
Acid, Chromic, and its Salts
Acid, Hydrochloric, Fort.
Acid, Nitric, Fort.
Acid, Oxalic.
Acid, Pyrogallic.
Acid, Sulphuric.
Alcohol, Absolute.
Almonds, Essential Oil of, unless deprived of its Prussic Acid.
Barium, Salts of.
Bromine.
Caffeine.
Cherry-laurel Water.
Chloroform.
Cocculus Indicus.
Copper, Salts of.
Creosote.
Caustic Potash and all Caustic Alkalics.
Digitalin.
Ether, Anæsthetic.
Felix-mas.
Gelsemium.
Henbane and its preparations.
Iodine
Lead, Salts of.
Lobelia and its preparations.
Mercury, Salts of, except Corrosive Sublimate in Schedule A.
Opium, its active principles and preparations.
Silver, Salts of.
Tartar Emetic.
Zinc, Salts of.
Conium and its preparations.
Vermin Killers, containing any Poison not mentioned in Part I.
Cannabis Indica and its preparations.

SCHEDULE II.

Form A.

Register of Chemists and Druggists.

Name.	Residence.	Qualification.

Form B.

Date.	Name and Address of Purchaser.	Name and Quantity of Poison sold	Purposes for which it is Required.	Signature of Purchaser	Signature of Person introducing Purchaser.	Signature of Seller.

SCHEDULE III.

Asafœtida.
Bark.
Camphor.
Carbonate of Magnesia.
Castor Oil.
Epsom Salts.
Glauber Salts.
Nitre.
Quinine.
Rhubarb
Senna.

Guaiacyl (Calcium Guaiacyl Sulphite).—This calcium salt of guaiacyl sulphurous acid, $Ca(C_7H_7O_2.SO_3)_2$, has been prepared by C. André by the following process:—100 Gm. of pure guaiacol is liquefied by gentle heat in a flask, and an equal weight of pure sulphuric acid is gradually added, avoiding too rapid rise of temperature; the mixture is then left for forty-eight hours, when it assumes a rose tint and acquires a thick syrupy consistence. It is then diluted with six or seven times its weight of water, heated to 80° C. on the water bath, and saturated with calcium carbonate, filtered and evaporated to dryness. The residue is taken up by four or five times its weight of alcohol (90 per cent.), again filtered, evaporated to dryness, and powdered. The resulting powder is guaiacyl, of a greyish mauve tint, very soluble in water and in alcohol, but insoluble in oils. According to Dr. O'Followell, who has made numerous clinical experiments with the new body, it has a useful action in 10 or 5 per cent. aqueous solution as a local anæsthetic. It is anticipated that it may be employed in cases of minor surgery where cocaine is unsuitable.—*Journ. de Pharm.* [6], 7, 324.

FORMULÆ, METHODS, AND REACTIONS.
KNOWN BY THE NAMES OF THEIR AUTHORS.
(Supplementary List).*

Eboli (Alkaloids).—Distinctive colour reactions are produced on adding diluted sulphuric acid (1 : 1) and potassium bichromate (see *Am. Journ. Pharm.*, **29**, 369).

Ehrlich-Biondi-Heidenhain (Triple Stain).—See Ehrlich-Biondi Mixture (*P.J.* [4], **5**, 9).

Ehrlich-Weigert-Koch (Aniline Water).—Mix 100 C.c. of aniline water (prepared by dissolving aniline in distilled water in the proportion of 1 C.c. to 30 C.c.) with 11 C.c. of concentrated alcoholic solution of gentian violet, methyl violet, or fuchsine, and 10 C.c. of absolute alcohol.

Einbrodt (Ammonia).—A white opalescence indicates the presence of ammonia on adding 100 C c. of water, 1 drop each of test solutions of ammonium chloride, potassium hydroxide, and mercuric chloride.

Eiselt (Melanin in Urine).—Urine containing melanin gives a dark coloration on being treated with oxidising agents such as nitric acid (alone, or mixed with potassium dichromate and sulphuric acid).

Endemann-Prochazka (Copper).—One drop of concentrated hydrobromic acid is added in a watch glass to 1 drop of a solution of a salt (or ash) supposed to contain copper. On standing for some time a distinct rose-red to dark reddish-brown colour will be produced with the most minute trace of copper.

Enell (Gurjun Oil in Copaiba).—Two drops of concentrated sulphuric acid are mixed with 4 C.c. of acetic acid. Eight drops of the balsam to be tested are added to the mixture; no red or violet colour should be visible in 15 minutes, and on the addition of a drop of water and shaking no red precipitate should separate.

Erdmann-Uslar (Alkaloids).—First extract with water containing hydrochloric acid; then mix with sand, treat with ammonia and extract with amylic alcohol, (see *Am. Journ. Pharm.*, **34**, 354).

Erlich (Acidophile Stain for Bacteria; "Mixture C").—Saturated solution of fuchsine—S, 150; saturated aqueous solution of methyl orange—G, 125; saturated aqueous solution of methyl green, 125. Distilled water, 300; glycerin, 100; alcohol, 200 The mixture should be kept in orange glass bottles.

Ermengem, Van (Staining Cilia of Bacteria).—The cultivation, spread thinly on a clean glass cover, is placed in a fixing solution for half an hour if cold, or for 5 minutes at 50° C. This solution consists of 2 p.c. osmic acid solution, 1 pt., 10 to 25 p.c. tannin solution, 2 pts. (to the latter is added 4 or 5 drops of acetic acid in each 100 C.c.). After this immersion, the preparation is washed with water and alcohol, put into a sensitising bath consisting of gallic acid, 0·5; tannin, 3; fused sodium acetate, 10; water, 350. Finally it is washed with plenty of water and dried between filter paper. The bacteria appear blackish-brown; the cilia pure black.

Eschka (Mercury).—A white stain is left on heating a substance containing mercury in a crucible and allowing the vapour to condense on a cold gold plate.

Everitt (Opium).—The red colour produced upon the addition to opium preparations of solution of ferric chloride is not affected by mercuric chloride. Iron sulphocyanide solution is bleached under similar conditions.

Ewald (Hydrochloric Acid in Gastric Juice).—This is Mohr's solution diluted with 3 volumes of water. A few drops are placed in a porcelain dish, and 1 or 2 drops of the gastric juice to be tested are added. If hydrochloric acid be present a faint violet colour appears at the point of contact, which, on stirring, changes to brown.

Eyckmann (Phenol).—The red colour produced on adding to 1 C.c. of a liquid containing phenol, 1 to 3 drops of spirit of nitrous ether, and an equal volume of sulphuric acid, is more intense than in the case of salicylic acid or albumin.

Eyckmann (Thymol).—The presence of thymol in menthol is indicated by the production of a blue colour on dissolving a little of the mixture in 1 C.c. of glacial acetic acid, and adding 5 or 6 drops of sulphuric acid, followed by 1 drop of nitric acid.

Fabre-Domergue (Glucose Medium).—Glucose syrup is diluted to 25° of the areometer (s. g. 1·21).

Faby (Codeine).—On rubbing a trace of codeine with 2 drops of chlorinated soda solution, the addition of 4 drops of concentrated sulphuric acid gives a blue colour.

Fairbank (Phosphorus in Iron).—The test solution consists of a filtered mixture of molybdic acid, 100, water, 400, and ammonia, 80, added to a mixture of nitric acid (s. g. 1·42), 300 C.c., and water, 700 C.c.

Fairthorne (Chloral).—A bluo colour is produced on heating chloral with a concentrated solution of potassium bichromate, and adding nitric acid.

Fairthorne (Morphine).—A dark red colour is produced with morphine on adding a solution of chlorinated soda, followed by ammonia.

Falk (Blood).—Alcohol, 20 Gm., chloroform, 20 Gm., turpentine oil containing ozone, 20 Gm., acetic acid, 2 Gm., are mixed together and water added till a permanent turbidity appears, then a trace of guaiacum resin is rubbed with the solution. This gives a blue colouring with blood. Compare Almen's tests.

Faulding (Cineol in Eucalyptus and Cajuput Oils).—Mix 10 or 20 Gm. of the oil with sufficient phosphoric acid (s. g. 1·750), added gradually with constant stirring, until no more solidification takes place and a slight coloration appears. The magma is then strongly pressed between filter paper until no more oil can be drained away. The white dry cake is transferred to a graduated cylinder, water added, and the cineol which separates measured or weighed.

Fenton (Tartaric Acid).—A violet colour is produced with tartaric acid on adding a little solution of ferrous chloride or sulphate, together with 1 or 2 drops of hydrogen peroxide and excess of free alkali.

Field (Bismuth).—Solutions of lead salts in which the merest trace of bismuth is present yield an orange-red or crimson precipitate (in scales) instead of a yellow one, on adding potassium iodide solution.

Filhol (Alkalies).—A blue colour is produced on adding to alkalies a solution of sodium nitroprusside in the presence of sulphuretted hydrogen.

Filhol (Iodine).—After evaporating an iodino solution to dryness with potash, taking up with alcohol, again evaporating and dissolving the residue in water, add a few drops of hydrochloric acid, then chromic acid, and carbon disulphide subsequently added will be coloured violet.

Filsinger (Butter).—Identical with Drouot's test.

Finkle (Chrysammic Acid).—A violet-red colour is produced with chrysammic acid on adding a warm solution of potassium cyanide, potassium carbonate in excess, and water.

Fischer (Platinum).—Stannous chloride imparts a red colour to a solution of platinum chloride in hydrochloric acid.

* After Wilder, Schneider, Altschul, etc. Continued from page 56.

Fischer (HYDROGEN SULPHIDE).—A blue colour is produced on adding to 50 C.c. of a liquid containing hydrogen sulphide 1 C.c. of hydrochloric acid, followed by a few grains of par amido-dimethylamine sulphate, and one or two drops of a dilute solution of ferric chloride.

Fischer (SELENIUM).—On applying to silver a solution of selenious acid, mixed with sulphuric acid, a yellow to brown spot will be produced.

Fischer (STAINS FOR CILIA OF BACTERIA).—See Loeffler's stain.

Fittig (INDICATOR).—An ethereal solution of mesityl-quinone is changed from yellow to violet by alkalies.

Fleischmann (ALCOHOL).—If alcohol be present in essential oils or chloroform, on shaking well with water, evaporating the aqueous liquid, treating with solution of potassium bichromate, and adding an excess of sulphuric acid, a green colour will be produced.

Fleitmann (ARSENIC).—The diluted acid in Marsh's test is replaced by a strong solution of potassium or sodium hydroxide, and the evolved arseniuretted hydrogen produces a black stain on paper impregnated with silver nitrate.

Fleitmann (COPPER).—The copper solution, freed from nitric acid, bismuth, or lead, is precipitated with metallic zinc, collected, washed, and dissolved in a mixture of ferric chloride and hydrochloric acid. The ferrous chloride formed is titrated with potassium permanganate solution. Each atom of ferrous iron (56) = 31·5 of copper. If the original solution contains nitric acid, bismuth, or lead, the reduction by zinc must be made in the ammoniacal filtrate from the precipitates of these metals, the zinc should be in the form of dust and the liquor warmed. When reaction is complete the blue colour will have disappeared. The precipitate is then washed with hot water, then with weak hydrochloric acid to remove the zinc, then dissolved in acid and ferric chloride, and titrated as before.

Flemming (FIXING AND HARDENING FLUID FOR MICROSCOPICAL PREPARATIONS).—Consists of osmic acid, 0·8 ; chromic acid, 1·5 ; glacial acetic acid, 10 ; and water, 180.

Flueckiger (ACIDS).—Free mineral acids decolorise a violet-coloured mixture of ferrous sulphate, gallic acid, and sodium acetate.

Flueckiger (BRUCINE).—A crimson colour is produced on mixing an aqueous solution of brucine with mercurous nitrate solution free from excess of acid and heating.

Flueckiger (COLCHICINE).—A very dilute and almost colourless solution of colchicine is coloured yellow by sulphuric acid, and bluish-violet by nitric acid.

Flueckiger (CREOSOTE : PHENOL).—(1) On mixing 1 volume of ferric chloride solution (s. g. 1·34) with 9 of creosote and adding 5 of alcohol (85 p. c.), a green colour is produced ; the solution becomes cloudy and of a brownish colour on adding 60 volumes of water. Phenol or a mixture of the same in considerable proportion with creosote gives a brown colour with the alcohol, changing to blue on adding water. (2) Creosote gives a brown or dirty green colour on adding one-fourth its bulk of ammonia and exposing to the vapour of bromine ; phenol causes a blue coloration under similar conditions.

Flueckiger (CURARINE).—A dark blue colour is produced on precipitating curarine with potassium bichromate and adding sulphuric acid to the dried precipitate.

Flueckiger (DIGITALIN).—An alcoholic solution of chloral dissolves digitalin with a yellowish-green colour which, on heating, changes first to violet, then to blackish-green.

Flueckiger (ESSENTIAL OILS).—The reaction lasts longer, and its violence is diminished on applying the sulphuric acid test, if the oils be previously diluted with 6 to 10 volumes of carbon bisulphide.

Flueckiger (EUPHORBIUM).—On extracting euphorbium with ether, evaporating, and adding sulphuric acid, a yellowish-brown colour is produced, which changes to violet on adding nitric acid.

Flueckiger (GALLIC ACID).—On adding to gallic acid a freshly prepared aqueous solution of ferrous sulphate (1 : 100), and adding sodium acetate, the mixture turns violet.

Flueckiger (GURJUN OIL).—On dissolving 15 drops of copaiba containing gurjun oil in twenty times its bulk of carbon disulphide, and adding 1 drop of a cooled mixture of equal volumes of sulphuric and nitric acids, a violet colour will be produced.

Flueckiger (PEPPERMINT OIL).—(1) A bluish-green colour is developed on adding fused salicylic acid to peppermint oil, and the addition of alcohol gives a solution which is blue by transmitted light, red by reflected light. (2) The addition of 1 drop of nitric acid (s. g. 1·20) to 50 drops of peppermint oil causes fluorescence after several hours. (3) The reddish colour produced on adding chloral hydrate to peppermint oil is intensified by the addition of sulphuric acid, and changed to dark violet on adding chloroform.

Flueckiger (PHENOL IN CLOVE OIL).—The oil is shaken with fifty times its volume of hot water, the mixture cooled, the oil decanted, and the aqueous liquid concentrated by evaporation. On adding to the residue a drop of ammonia solution and sprinkling on the surface a little chlorinated lime, a green to blue colour is produced if phenol be present.

Flueckiger (QUININE).—(1) The chlorine water in the thalleioquin reaction is replaced by bromine water ; (2) Chlorine water, potassium ferricyanide and ammonia produce a red colour with quinine ; (3) A ray of light passing through an acid solution of quinine has a bluish colour.

Flueckiger (VALERIAN OIL).—A blue colour is produced on dissolving 1 drop of valerian oil in 15 drops of carbon disulphide, and adding 1 drop of sulphuric acid, followed by 1 drop of nitric acid (s.g. 1·20).

Fol (FIXING AND HARDENING MICRO PREPARATIONS.—Osmic acid, 0·04; chromic acid, 0·05 ; glacial acetic acid, 10 ; water, 180.

Fordos (LEAD).—Tin containing lead is stained yellow on applying a drop of nitric acid, heating, then cooling and applying a drop of potassium iodide solution (5 p. c.).

Forney (ALCOHOL IN ESSENTIAL OILS).—See McClellan-Forney.

Fourcroy (PHOSPHORIC ACID).—A white crystalline precipitate is thrown down on adding to phosphoric acid ammonium chloride and ammonia, followed by magnesium sulphate.

Fraenkel-Voge (CULTURE SOLUTION FOR BACTERIA).—Sodium chloride, 5 ; neutral sodium phosphate, 2 ; ammonium lactate, 6 ; asparagin, 4 ; dissolved in distilled water, 1000.

Frankenstein (ANIMAL AND VEGETABLE FIBRES).—When moistened with olive oil and then dried between filter paper, animal fibres and cotton remain unaltered, whilst flax becomes transparent.

Frankland (NITROUS ACID).—A faintly acid solution of sulfanilic acid, and phenol. The reagent is mixed with the fluid to be tested, then ammonia is added, when if nitrous acid is present, a red colour appears. Compare Kiegler's test for phenol.

Franqui-Van de Vyvere (GLUCOSE).—Reduction occurs on heating urine containing glucose with a solution of bismuth hydroxide in potassium hydroxide.

Frébault (Indicator).—Potassium or sodium picramate (dinitramido-phenate) is changed from bright red to greenish-yellow by acids.

Frederking (Alcohol in Ether).—On shaking a mixture of ether and alcohol with an equal bulk of glycerin the volume of the latter will be increased.

Fresenius-Babo (Arsenic).—Arsenates and arsenic sulphide are reduced on fusing with 12 parts of a mixture of sodium carbonate, 3, and potassium cyanide, 1, in a stream of carbonic acid, the substance being heated in a porcelain boat placed in a reduction tube. The arsenic may be identified by the formation of a mirror.

Friedenwald-Ehrlich (Diazo Reaction for Typhoid and Tubercule).—This is a modification of Ehrlich's reaction, in which the sulfanilic acid is replaced by *p*-amido-acetophenone. With this reagent the diazo reaction is obtained in *Bacillus typhus abdominalis* and *B. tuberculosis miliaris*.

Frisch (Creosote : Phenol).—An alcoholic solution of creosote is coloured emerald green by an alcoholic solution of ferric chloride ; phenol is coloured blue.

Fuerbringer (Mercury). — Urine suspected to contain mercury is acidified and "brass-wool" immersed in it, then rinsed with water, absolute alcohol, and ether in turn. On heating the brass to redness in a combusion tube containing a little iodine at one end, the mercury vaporises and combines with the iodine to form the red iodide.

Fuge (Ferrum Redactum).—Dissolve 4 Gm. of pure copper sulphate in 100 C.c. of hot water, and add 1 Gm. of the sample. Shake in a corked flask for 10 minutes, then filter, and titrate with decinormal potassium bichromate solution.

PHARMACEUTICAL SOCIETY.

DONATIONS TO THE LIBRARY AND MUSEUM.

At a meeting of the Library, Museum, School and House Committee, on Wednesday, March 8, the Librarian and Curator presented the following reports of donations :—

To the Library (London).

Colonial Pharmacy Board, Cape Town :—Medical and Pharmacy Register, 1898.

Professor A. L. Herrera, Mexico :—Artificial Formation of a Rudimentary Nervous System, 1898.

Mr. H. N. Ridley, M.A., F.L.S., Straits Settlements :—Agricultural Bulletin of the Malay Peninsula, December, 1898.

Proprietors of the *Chemist and Druggist* :—The *Chemist and Druggist*, 1898 ; The "Chemist's and Druggist's Diary," 1899.

Dr. Louis Planchon, Montpellier :—Expériences sur la Conservation des Plantes Les Drogues Récemment Inscrites au Codex.

Ecole Supérieure de Pharmacie de Paris :—Theses par MM. Bauge et Lebeau.

Professor E. Schaer, Strassburg :—Blutnachweis mittelst der Guajakprobe, 1898 ; Untersuchungen über Oxydationsfermente, 1898.

Pharmaceutical Society of Ireland :—Calendar, 1899.

To the Library (Edinburgh).

Pharmaceutical Society of Ireland :—Calendar, 1899.

Mr. James Smiles, Edinburgh :—Watts's Dictionary of Chemistry, 1894. 4 vols.

To the Museum (London).

Mr. T. Wardleworth, F.L.S., Liverpool :—Specimens of Mulungu bark (*Erythrina corallodendron*) and of *Ionidium ipecacuanha*.

Messrs. Woolley and Co., Manchester :—Specimens of the root of *Frasera carolinensis*.

Mr. Mellor, Hemel Hempstead :—Living specimen of *Juniperus communis*.

Commendatore Thos. Hanbury, F.L.S., Ventimiglia :—Living specimens of *Citrus limonum*, *Peumus boldus*, *Amygdalus communis*, *Umbellularia californica*, *Elæodendron capense*.

To the Museum (Edinburgh).

Messrs. Hodgkinson, Clarke and Ward :—Specimen of Opaque Bdellium.

THE STUDENTS' COLUMNS.

HINTS ON ANALYTICAL PROCESSES.

Separation of Iron, Aluminium, and Chromium.—In the separation of Fe, Al, Cr by the KOH or NaOH plan (Attfield's 'Manual,' page 279, 17th edition) it will be found better to add the triple solution to the cold alkaline solution, tho latter being finally in excess, but not greatly so. Fe is easily removed tolerably free from Cr, which can be separated by warming and filtration, then Al detected in filtrate by strong solution AmCl.

Detection of Nitrogen.—In the qualitative detection of N in an organic compound by the metallic Na process (K is too dangerous for "heroic" students) it should be observed that if the nitrogenous compound contains sulphur (albumin of egg, etc.), the product will not be NaCN but NaCNS, which will produce with the ferric chloride solution not Prussian blue but the well-known red solution of ferric sulphocyanide.

Detection of Borates.—The detection of a borate in a complex solution or powder is often difficult. It can readily be detected by adding to the powder or evaporated solution methylated spirit and H_2SO_4, and warming in a test-tube, applying a light to the vaporised methyl borate, which burns with a characteristic green flame.

Reagent for Tannin.—The solution of gelatin or albumin for detecting tannin, metaphosphoric acid, and other substances does not keep well. Glycerin suppositories of the B.P. can be used as a substitute, for they are easily softened and dissolved in the warm water required to make the solution.

ZOOLOGICAL NOTES FOR PHARMACISTS.—III.

Porifera.

The Porifera, or sponges, form a separate phylum and class. A simple typical sponge is a multicellular body of a somewhat cylindrical shape, having a central "paragastric" cavity communicating externally by means of a more or less complicated system of channels in the tissue of the animal. This tissue is differentiated into three layers—ectoderm, or outer layer, mesoderm, or middle layer, and endoderm, or inner layer. The channels are of three kinds, incurrent, flagellated, and exurrent. The openings of the incurrent channels are microscopically visible on the surface as minute numerous pores, situated locally or extended over the whole surface. These incurrent passages, whose surface is of the same character as the outer coat or ectoderm, communicate with second passages, which may, in simple forms, lie parallel with the first, and connected by minute openings (prosopyles), or may be expansions or chambers of the incurrent passages. In both cases these second forms of channel are lined with an endoderm of peculiar flagellated cells, each flagella being surrounded by a collar, or cup-shaped expansion of the protoplasm, cells identical with certain forms of flagellated Protozoa. The flagellated passages are connected by the exurrent canals with the internal cavity, which in some forms is also lined with flagellated cells, and the cavity communicates with the surface at a large aperture, the osculum.

In one order, the Myxospongiæ, the mass of tissue exists without any supporting framework, but in other cases it is supported by a skeleton of fibres (spongin) or of calcareous or siliceous spicules of various forms, or a combination of spongin and spicules. The sponges are divided into two sub-classes—Calcarea and Non-Calcarea, the first containing all those having spicules of calcium

carbonate, the second including all remaining sponges. The skeletal framework is secreted by the mesoderm, or middle layer of tissue. In the case of spicules each is developed from a single cell, and may, if siliceous, be shaped like a needle, a tuft, an anchor, a dumb-bell, or, as is most common, a star of three radial spikes : calcareous spicules are also of this form. Some varieties, as the rough round Cuban sponge, although not developing spicules of their own, take up into their mass spicules, sand, or minute shells from other sources, and so increase their solidarity.

Reproduction may take place by an asexual process of external budding, which results in a colony of attached simple sponges, or an internal formation of gemmules, which gemmules become detached and are washed away to grow into new sponges. But, besides these, all sponges have a sexual reproductive process, certain cells of the mesoderm immediately beneath the endoderm producing ova and spermatozoa. From the union of these, embryos are formed which remain closed in the parent sponge until partly developed, and are then washed out by the current.

Sponges show great individual variability in their mode of growth, according to their position of attachment and surrounding influences. They may form cylindrical, branched, cone or cup-shaped masses, or flat plates, or solid rounded bodies. The common toilet sponge is the fibrous skeleton of species of *Euspongia*, natural order, Ceratosa, which contains no true spicules.

The sponges, with the exception of one order, are all marine, and live at all depths. Some species are always found associated with another animal zoophyte or crustacean. Cases where two animals live together for mutual benefit are known as instances of "Commensalism."

Coelenterata.

This phylum includes polypes, zoophytes (tree-shaped colonies of polypes), jelly fishes, sea anemones, and coral polypes, amongst which there is no form of any particular interest to pharmacists. The peculiarity of the animals forming this group is the symmetrical radial arrangement round a central axis. They present examples of two types, the "polype" and the "medusa," these two, in many cases, being alternate generations of the same animal. A polype is a multicellular animal of cylindrical shape, the cells being of two kinds, ectoderm and endoderm, separated by a thin non-cellular plate, the mesoglæa, and forming a mass of tissue which surrounds a central gastric cavity. The gastric cavity (enteron) has a mouth at the top of a conical extension of the body, and this extension (manubrium) is surrounded by a number of tentacles. The polypes occur in colonies as branches of a common stem, which consists of soft core (cænosarc), which secretes a protective layer of chitin (perisarc), or, in the coral building order, a skeleton of calcium carbonate.

FLORAL CALENDAR FOR MARCH.

Nearly all the plants are still in blossom that were mentioned in the February list (see p. 128), to which reference may be made. The following will probably be found in flower during the latter half of March :—

Amaryllidaceæ.—*Clivia miniata.* F. (better known as *Imantophyllum miniatum*). *Leucojum vernum.* B.G. *Galanthus.* F. *Eucharis.* F. *Narcissus.* F.

Aristolochiaceæ.—*Asarum europæum.*

Berberidaceæ.—*Berberis aquifolium.* F. *B. aristata.* B.G. *B. asiatica.* B.G. *Jeffersonia diphylla* (*P. J.* [2], 8, p. 765).

Boraginaceæ.—*Anchusa sempervirens.* B.G. *Pulmonaria angustifolia.* B.G. (*P. J.* [3], 8, p. 765).

Caprifoliaceæ.—*Adoxa moschatellina* (*P.J.* [3], 8, p. 765). *Lonicera standishii.* B.G. *L. fragrantissima.* B.G.

Caryophyllaceæ.—*Cerastium glomeratum. Stellaria media.*

Compositæ (Asteraceæ).—*Petasites vulgaris. Taraxacum officinale* (*P.J.* [3], 7, 789).

Coniferæ.—*Juniperus communis.*

Cruciferæ (Brassicaceæ).—*Alliaria officinalis. Alyssum saxatile.* F. *Aubrietia.* F. *Cardamine hirsuta. Cheiranthus cheiri.* F. *Draba aizoides.* F. *D. verna. Hutchinsia petræa. Teesdalia nudicaulis* (see *P.J.* [4], 4, p. 254).

Cupuliferæ.—*Alnus glutinosa.*

Equisetaceæ.—*Equisetum arvense* (*P.J.* [3], 9, p. 793).

Ericaceæ.—*Arbutus unedo.* F. *Azalea.* F. *Erica carnea.* F.

Euphorbiaceæ.—*Buxus sempervirens* (*P.J.* [3], 7, p. 789-790). *Euphorbia amygdaloides* (*P.J.* [3],7, p. 789).

Fumariaceæ.—*Corydalis bulbosa.* B.G. *Dielytra spectabilis.* F.

Gentianaceæ.—*Gentiana acaulis.* F. (*P.J.* [4], 4, p. 254).

Geraniaceæ.—*Oxalis.* F. *Pelargonium.* F.

Iridaceæ.—*Iris persica.* F. *I. reticulata.* F. *Romulea columnæ*, (*P. J.* [3], 15, p. 792).

Juncaceæ.—*Luzula pilosa.*

Labiatæ.—*Lamium purpureum. L. album. L. galeobdolon.*

Liliaceæ.—*Aloe vulgaris.* B.G. *Muscari.* B.G. *Tritelia uniflora.* F. *Lachenalia.* F.

Linaceæ.—*Erythroxylum coca.* B.G.

Loranthaceæ.—*Viscum album* (*P. J.* [3], 15, p. 792).

Orobanchaceæ.—*Lathræa squamaria.*

Primulaceæ.—*Erythronium dens-canis.* F. *E. revolutum.* F.

Ranunculaceæ.—*Anemone pulsatilla* (*P. J.* [4], 4, p. 179). *A. nemorosa, Caltha palustris, Helleborus viridis* (*P. J.* [3], 7, p. 789).

Rubiaceæ.—*Cephaelis ipecacuanha.* B.G.

Salicaceæ.—*Populus alba, P. nigra, P. balsamifera* (*P. J.* [3], 9, p. 789).

Rutaceæ.—*Citrus aurantium.* B.G. (*P.J.* [3], 7, p. 790).

Saxifragaceæ.—*Chrysosplenium oppositifolium.*

Scrophulariaceæ.—*Linaria cymbalaria, Veronica hederæfolia.*

Solanaceæ.—*Hyoscyamus orientalis.* B.G. *Mandragora officinalis* (*P.J.* [3], 7, p. 790). B.G. *Scopolia carniolica.* B.G.

Sterculiaceæ.—*Cola acuminata.* B.G.

Styraceæ.—*Styrax officinale.* B.G.

Thymelæaceæ.—*Daphne blagayana.* B.G. *D. mezereum.* *P.J.* [4], 4, p. 254.

Umbelliferæ (Apiaceæ).—*Hacquetia epipactis. Chærophyllum sylvestre.*

Violaceæ.—*V. hirta* (*P.J.* [3], 9, p. 793).

Students who are interested in the examination of the different groups of Cryptogams will find during the next two months an abundance of material. A great number of hepaticæ will be in fructification, indeed no other period of the year will afford so many. As a rule these grow intermixed with each other or with mosses in damp or dripping places in woods or on rocks in streams or on moors, and may be recognised, as a rule, when in fructification by the slender, transparent, glass-like fruitstalk with a small black or green capsule at the top of it, which splits when ripe into four valves (see *P. J.* [4], 4, p. 276). Freshwater algæ also may be found in abundance in ponds and ditches and streams. When in fructification, as a rule, their green colour merges into yellow. This, however, is not the case with *Vaucheria* (*P. J.* [4], 4, p. 296), which may commonly be found in fruit on damp ground. By the seaside the *Laminaria* or oar-weed may be found in fructification, which occurs on the older fronds that are gradually detached from the top of the growing ones, and several species of red algæ fruiting only in winter. *Equisetum arvense*, of which the fructification occurs on a leafless frond, serves to illustrate the reproductive organs of the Equisetaceæ, and is common now by roadsides. Many mosses also are now in good condition for examination.

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SETTING THE HOUSE IN ORDER.

One satisfactory feature of the poisoning case which has recently stirred the length and breadth of the land, on account of the eminent position occupied by the unfortunate victim, is that the registered chemist concerned in the affair appears to have taken precautions far in excess of what the law required him to do in supplying the medicines referred to at the inquest at Bournemouth. So far as can be judged from the newspaper reports of the inquest false economy and carelessness on the part of the patient were the only causes of the mishap which resulted in his death. Stated briefly, the facts of the case show that, before leaving his home in Scotland, Dr. Boyd procured from a registered chemist six bottles containing paraldehyde draughts and six bottles of similar size containing liquefied carbolic acid, the intention being that the contents of the latter should be diluted as required to purify a surgical appliance. It is in regard to the latter point that the false economy came in, the obvious reasons for the method of procedure adopted being to save space in packing and, perhaps, also to minimise the charge for dispensing. Had the carbolic acid been properly diluted by a chemist, either at St. Andrews or Bournemouth, the accident could not possibly have occurred. The case is a forcible illustration of the fact, too often overlooked, that the price of medicine is not to be measured by the intrinsic value of its ingredients, but by the skill required for its proper preparation. But, even as matters were, the risk was slight if a proper degree of caution had been observed. The bottles containing the carbolic acid differed in colour from those containing the draughts; they were as fully labelled as could be desired; each bottle was enclosed in a separate wrapper, and the six containing the poison were packed in a separate case.

But none of the precautions availed and, though the daily papers during the past few days have abounded with suggestions for obviating the risk of such accidents, it is questionable, as the *Pall Mall Gazette* observes, whether any further precautions would have saved Dr. Boyd's life. The evidence shows that he drank in the dark out of a bottle from which the wrapper had not been removed, and "the moral is rather that old gentlemen of seventy-two should not be allowed to take medicine except at the hands of their nurses." The chemist had been careful to provide against a confusion of the bottles in this case, and an ordinary observer looking at them, would have detected which was which at a glance, but, in his over-anxiety to save expense and trouble, Dr. Boyd chose to do for himself what others, better qualified, were prepared to do for him, and his life has paid the penalty. Meanwhile, however, registered chemists should draw another obvious moral: the necessity of losing no time in satisfying themselves that they have done everything requisite to carry out the recently adopted poison regulations in their entirety. Carbolic acid not being yet a scheduled poison, it is not in the least degree incumbent on those who dispense or sell that article to take steps to indicate its dangerous properties. Still no registered chemist is ever likely to send out carbolic acid or anything of a similarly dangerous nature without indicating its character, whether it be a scheduled poison or not. Supposing, however, that carbolic acid had been a scheduled poison, it must have been supplied "in bottles rendered distinguishable by touch from ordinary medicine bottles." But had the well-known fluted bottles been used the calamity might not have been averted, under the circumstances already referred to, though the chemist would have done all that the law required of him, and no blame could possibly have attached to him. With the regulations now compulsory, it is imperative that chemists should consult their own interests, whilst also doing their utmost to protect the public safety, by taking immediate steps to remove any ground for reproach in their arrangements for keeping, dispensing, and selling poisons.

It is true, as some correspondents have pointed out, that medical practitioners and public dispensaries are under no obligation to adopt regulations similar to those now compulsory in the case of registered chemists, but that simply affords another argument in favour of the chemist carrying out the regulations to the utmost. What better evidence can duly registered persons advance in favour of distinctive treatment as professional men than the fact that they have voluntarily submitted to restrictions from which all other dispensers of medicine are exempt? Let medical practitioners and public dispensers scatter poisons broadcast if they will, without taking proper precautions, and the public will soon learn that safety lies in depending upon the trained and examined pharmacist for the supply of all medicines. With regard to the details involved in carrying out the regulations, there is not much to be said that has not been said before, but with a view to securing uniformity of procedure we strongly recommend all the registered chemists in Great Britain to meet at the recognised centres and discuss the means whereby such uniformity may best be ensured. In many, perhaps most, instances no serious alterations in the fittings of the pharmacy will be needed to meet the requirements of the second regulation—that which refers to the manner of keeping poisons—but if such alterations are indicated as desirable no motives of economy should be allowed to stand in the way of effecting any essential reform. Expense should be no object to the registere chemist who wishes to do his duty to himself, to his craft, and to the public, for it is better to disburse a few pounds on what is, after all, a first-class advertisement, than to risk the loss of professional reputation at one fell stroke. The Western Chemists' Association of London, we are glad to see, has decided to discuss this extremely important matter on Wednesday next, and we hope to see every other local association in the country take the subject of practical conformity with the regulations into serious consideration at a very early date.

ANNOTATIONS.

The Annual Dinner of the Members of the Pharmaceutical Society is to be held at the Whitehall Rooms, Hôtel Métropole, on Tuesday, May 16 next, and those who desire to have their names included in the list of Stewards, which will shortly be published, are requested to communicate at once with the Hon. Secretary, Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C. At the meeting held on Wednesday to make the preliminary arrangements, a Committee was duly elected, and it was decided that the price of the dinner tickets should be the same as on previous occasions, other details being left to the discretion of the Committee.

Evening Meetings of the Pharmaceutical Society are again to be held both in London and Edinburgh during the same week. At Bloomsbury Square, Professor J. Reynolds Green is announced to deliver the lecture postponed from last month on "Adverse Conditions and their Remedies in the Life of Plants." The date is Tuesday next, March 14, the time eight o'clock, and the chair is to be taken by the President, Mr. Walter Hills. The meeting at York Place, Edinburgh, will be on the following evening at half-past eight, when Mr. J. Laidlaw Ewing, Chairman of the Executive of the North British Branch, is expected to take the chair, and the following papers will be communicated:—"Pharmacists and Urine Analysis," by Mr. Archibald Currie; "The Temperature at which Sodium Bicarbonate Decomposes," by Mr. W. B. Cowie; "Insoluble Pessaries of Ichthyol," "Linimentum Terebinthinæ, B.P.," and "A Bismuth Mixture," by the indefatigable Assistant Secretary, Mr. J. Rutherford Hill.

That the Dispensers' Certificate issued by the Apothecaries' Society is becoming of little, if any, value to the possessors thereof is shown by the fact that whenever public appointments for dispensers are advertised, the real qualification held by persons registered under the Pharmacy Acts is now almost invariably asked for. According to a local correspondent, the authorities of the General Dispensary, Birmingham, last week passed a resolution to the effect that the Apothecaries' Hall certificate should not be held sufficient qualification for dispensers, but that they must possess the legal qualification held by those who have passed the Minor examination. This is as it should be, and registered chemists ought to neglect no opportunity of educating hospital and other public authorities upon the point.

Secret Commissions have engaged the attention of a special committee of the London Chamber of Commerce, and the report of that Committee, of which Mr. David Howard is chairman, has just been issued. In an appendix are printed excerpts from statements made by, and letters received from, members of the Chamber and others, in response to public invitation to supply information on the subject. The greatest care is stated to have been taken to ensure that the statements have been made on reliable authority, but the Committee and the Chamber decline to accept responsibility for their absolute accuracy. At the same time there is, unfortunately, no reason to doubt that the practices disclosed do actually prevail, and from the secrecy observed in regard to them, the inference may be drawn that the persons taking part in such practices are conscious of their fraudulent nature. A pharmaceutical chemist stated that "secret commissions are given by chemists to medical men on their prescriptions supplied to patients, in some cases amounting to from twenty-five to fifty per cent. on the price charged by the dispensing chemist." This is bad, but probably true to some extent. An optician, jeweller, and silversmith wrote: "Recently a man of scientific eminence in Scotland received very large commissions for recommending a certain make of microscope. It is an open secret that hospital doctors receive commissions from makers of surgical instruments." If this be true, it is distinctly worse than the former case. Again, a cutlery manufacturer in Sheffield wrote: "The mischievous practice has done a great deal of harm to the proprietors of houses in London especially. The mode of levying blackmail goes right through in some houses, even to the boy who takes in the manufacturer's card to the buyer, their civility and attention having to be paid for by the unfortunate traveller. The mischief is very far spread."

Evidence to the Same Effect has been tendered by the representatives of nearly every trade, wholesale and retail, in the country. To meet the difficulty the Committee suggests that all professional and trade bodies (such as those representing the medical, legal, artistic, and other professions and trades) be recommended to make an emphatic declaration on the subject of secret commissions, and adopt the course already taken by the Royal Institute of British Architects, the Institution of Civil Engineers, and other bodies, by inserting into their bye-laws a stipulation that any member guilty of the pernicious practice will be expelled the Society by the Council. In order to make such a provision effective this would require the aid of the general public, as well as of the members of the several professions and trades. It is also suggested that traders should make with all with whom they deal a definite agreement, similar to that entered into by the members of the Calico Printers' Association, undertaking that nothing in the form of a bribe, commission, or present shall be offered or given by them to anyone. It is thought that the existence of a great system of technical education throughout the country should be utilised as a means of disseminating clearer views than often exist of the immorality of the giving and receiving of bribes, since the managers of those institutions would no doubt give the necessary permission and allow influence in the right direction to be brought home to the young people in their schools, whether by means of written papers or of oral addresses. Finally, the Committee recommends the holding of a public meeting to call the attention of the public and all concerned to the heinousness of the system of secret commissions, and its detrimental effect upon morals and business.

Proprietary Medicinal Preparations do not appear to commend themselves to Irish members of Parliament. In the House of Commons, on Monday last, Mr. M'Cartan asked the Chief Secretary to the Lord-Lieutenant of Ireland, whether his attention had been called to a paragraph published in the Dublin *Freeman's Journal* of the 2nd instant, under the heading "Local Government Board Medicine Tender Forms," and whether he was aware that the paragraph contained a copy of a resolution adopted unanimously by a board of guardians protesting most emphatically against the use of those forms as prejudicial to the purchase of certain medicines in Ireland. He also asked whether the forms included quotations from the price lists of English firms and in certain cases contained the fancy trade mark of English firms; whether, also, in the encouragement of Irish industries, those forms would be discontinued, and boards of guardians and district councils be allowed to purchase with Irish money the drugs, medicines, and instruments required from Irish firms, in Ireland. Mr. Gerald Balfour said the answer to the first and second paragraphs was in the affirmative. In the Local Government Board's prescribed list of medicines eleven out of the total of 416 articles given therein were quoted from the price list of an English firm (Messrs. Burroughs, Wellcome and Co.), the strength

of the preparation being stated in each case. Those few articles had been added to the 405 preparations of the British Pharmacopœia included in the list, as being articles of well-established reputation. There was no foundation, he asserted, for the complaint contained in the resolution that the inclusion of the few preparations referred to, in the Board's authorised list, would be prejudicial to Irish manufacturers, and the Local Government Board had reason to believe that any list which excluded those eleven preparations would be considered incomplete by the medical profession. The articles had received the approval of the Royal College of Physicians in Ireland, and no objection had been received from the Irish drug trade respecting the Local Government Board's prescribed list of medicines.

The Object of the Petroleum Bill now before the House of Commons is to give legislative effect to the intentions of Parliament as expressed in the Petroleum Act, 1871. That Act placed legislative restrictions on the sale, keeping, and carriage of petroleum with a flash point under 100° Fahrenheit. The flash point of petroleum is the lowest temperature at which it begins to give off inflammable vapours. The Act of 1871 prescribed a test, known as the "open test," by which the flash point was to be determined. That test was, subsequent to the date of the 1871 Act, found to be fallacious. Unless it was applied with extreme care and scientific accuracy, the "open test" was found to be incorrect to the extent of approximately 27°. In other words, if the flash point of any particular oil was in reality 73° Fahrenheit, the open test, as usually applied, showed its flash point to be 100°. To correct the errors incident to the use of the open test, the "close test" was devised by Sir Frederick Abel. The close test was made compulsory and the open test was abolished by the Act of 1879. But by that Act the restrictive legislation prescribed by the Act of 1871 with regard to petroleum with a flash point under 100° Fahrenheit, was applied to petroleum with a flash point under 73° Fahrenheit. All petroleum with a flash point above 73° Fahrenheit was thus, contrary to the 1871 Act, freed from legislative restrictions. The purpose of this Bill is to substitute the accurate or close test for the inaccurate or open test in the Act of 1871, and to restore the 100° flash point prescribed by that Act. Whether or not that purpose will be accomplished, remains to be seen, but the outlook is not promising, the vested interests involved being apparently almost too powerful to allow of the matter being properly considered from the point of view of the public interest.

The Fixation of Nitrogen by Algæ is the subject of an interesting note in the *Times*, in which it is stated that M. Bouilhac has extended the inquiry originated by MM. Schlœsing and Laurent, employing fresh-water algæ for the purpose. He appears to have isolated several distinct species of algæ, which he placed in various solutions all having the same mineral ingredients, but differing according to the presence or absence of calcium nitrate. In the solutions containing the nitrate the algæ vegetated normally, but no growth took place in the solutions free from nitrate. Into the latter a little earth was introduced, inoculating them with the bacteria of the soil. With some of the algæ this inoculation had no effect, and it is concluded that such algæ, like most of the more highly organised green plants, are capable of growth only when they find at their disposal assimilable nitrogenous compounds such as calcium nitrate. But in the case of one species, *Nostoc punctiforme*, a different result was obtained, for it began to grow vigorously after inoculation of the solution with the bacteria of the soil. It is explained that the cell-walls of this plant are enveloped in a gelatinous sheath upon which the bacteria rapidly multiply, and in the course of their development they place nitrogen at the disposal of the plant which, in virtue of its green colouring matter, is capable of forming starch out of the elements contained in carbon dioxide and water. The nitrogen-content of *Nostoc* is found to be as much as 3·4 per cent. of the dry matter. For all practical purposes, then, this plant may be regarded as possessing the same nitrogen-fixing power, through its symbiotic relationship with the bacteria, as pertains to peas, clovers, and other plants of the leguminous order.

The Presence of Boric Acid in Milk has not yet, in Sir James Vaughan's opinion, been proved to be attended with injurious results, and he has accordingly dismissed a case in which the fact of the acid being used was beyond question. The point in dispute was whether the boric acid could be considered an adulterant. The complainants—the vestry of St. George's, Hanover Square—called expert evidence to show that it caused indigestion, diarrhœa, and eczema or other skin diseases; the defendants, on the other hand, called experts who denied that it was in any way injurious unless taken in very large quantities. They contended that the acid is no more harmful than common table salt, and that its use in milk is directly beneficial by preventing the decomposition which is liable to take place when milk is sent a long distance by rail. Sir James Vaughan said that he found evidence had been taken before a committee of the House of Commons upon the point, but the only conclusion appeared to be that while the use of substances such as salicylic acid was directly injurious, it remained doubtful whether boric acid was injurious or not. Mr. Munroe, for the prosecution, said his point was that, with an article of the nature of milk, any addition is an adulterant, and he understood that a Bill shortly to be laid before Parliament would deal with that very point. Sir James Vaughan, however, said he was of opinion that the addition must be proved to be to the prejudice of the purchaser, and in the present case there seemed absolutely no definite evidence that the use of boric acid in milk was attended with injurious results, so that he must dismiss the summons.

The Pharmaceutical Society of Ireland has acted in the interests of registered chemists, by sending to urban district councils and other public bodies throughout the country a circular pointing out that the security afforded to the public by a company of unqualified persons carrying on the business of pharmacy, with a qualified assistant in charge, is not equivalent to that of a proprietor who has to bear the responsibility of an oversight and the odium of error. The duly qualified proprietor can and does exercise supervision over and judge the competence and moral rectitude of all his assistants, which a company of unqualified persons is entirely incompetent to gauge. The various public bodies are asked, therefore, to pass resolutions affirming the principle involved in each pharmacy having a duly qualified proprietor. It is alleged to be a scandal that persons fined for a breach of the pharmacy laws may, under cover of the Companies Acts, continue to keep open shop for the practice of pharmacy in contravention of the Statutes requiring that any person keeping open shop shall be qualified by examination, and it is urged that any amendment of the Companies Acts should define that persons may not be incorporated to pursue a calling or use titles which they may not as an individual or firm follow or use. In some instances the matter has been referred to committees for consideration; in others it has been decided by the local authorities to take no action in the matter. The result of the agitation, however, can hardly fail to benefit Irish pharmacists, by enlightening the public with regard to the true position of affairs.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The twenty-first annual dinner of this Association was held at the Holborn Restaurant (King's Hall), on Thursday, March 2, the President, Mr. F. W. Gamble, in the chair. Notwithstanding the fact that many were prevented from attending through indisposition, there was a record attendance, over three hundred sitting down to dinner. Amongst those present were Sir James Crichton Browne, M.D., F.R.S.; Mr. Walter Hills, President of the Pharmaceutical Society; Mr. J. F. Harrington, President of the Western Chemists' Association (of London); Dr. C. Symes, Dr. J. Attfield, and many other well known partners and representatives of wholesale firms, as well as prominent pharmacists and their assistants. An excellent dinner was served, after which the usual loyal toast was proposed by the President, followed by

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proposed by Mr. H. Hymans, who said he was sure all would agree with him that this toast was not a mere formal one, but one which was cordially felt by every chemist present. He could not speak from the point of view of a retail chemist of the friendship and sympathy which exists between medical men and chemists, but in his official capacity as Secretary of the Association he could say that they had many instances of friendly feeling. Several medical men were patrons of the Association, they read papers at the meetings, were present at the social gatherings, and they honoured them with their presence that night. As chemists they owed a great deal to the medical profession in their co-operation and work in the advancement of pharmacy. He had great pleasure in coupling with the toast the name of Sir James Crichton Browne, one of the eminent representatives of the medical profession.

Sir James Crichton Browne responded in a humorous speech, in which he claimed some credit for courage in appearing there that evening, not merely because he had just recovered from an attack of influenza—and he could assure those present that he was certified to be absolutely and entirely free from microbes—but also because immediately after the occasion on which he last addressed a pharmaceutical audience he was made the subject of a coroner's inquest. He did not quite know what the verdict was, but he believed he was accused of being the instigator of murder and suicide. He was not afraid on this occasion of being made the subject of another "coroner's inquest," nor was he going to defend himself against the accusations brought against him, except to state that he thought he could honestly say that in no speech of his —published either in the pharmaceutical press or elsewhere—had he uttered one word that did not tend towards the public safety. On behalf of the medical profession he wished to thank them for the hearty way in which the toast had been proposed and received, and on behalf of that profession he might say that it regards pharmacy as its right hand, and views with cordial approval the efforts pharmacists have made and are making to raise the status of their calling. It had also a sincere regard for the work carried on by the Chemists' Assistants' Association, which was so comprehensive in its programme, including such subjects as antitoxins, dairy produce, and the hygiene of the London streets, and passing from the chemistry of gout to a Cinderella dance. Referring to the way in which chemists faithfully fulfil the behests of the medical profession, Sir James related a good story told by Mr. Brudenell Carter, respecting a man who visited two medical men and obtained a prescription from each, but differing widely in their nature. He then consulted his chemist, who advised him to take a middle course, and it was eventually agreed to make a compound of each. This, he thought, showed that chemists do not automatically dispense the prescriptions of medical men, but that they examine and analyse them, and dispense them intelligently. With regard to the art of prescribing, he felt that there is some danger of its becoming extinct. While recognising the convenience and the advantages of modern methods, he still thought that there are difficulties in their use. The use of tabloids, palatinoids, soloids, and such-like preparations must, he thought, tend towards slovenliness on the part of the medical profession, and must deprive the patient of the treatment most neatly and accurately suited to his case. He was of opinion that every physician should be intimately acquainted with the nature and properties of the drugs he prescribes. If ever the "tabloid period" came to be an established fact, it would most certainly create great havoc in the medical profession as well as amongst chemists by bringing about a system of self-drugging. He was not going to advocate a system of monopharmacy or poly-pharmacy, but he devoutly hoped that as far as his own profession was concerned the art of prescribing elegantly and scientifically would still be kept alive. He then referred to the various systems of advertising, and strongly denounced the scattering abroad of samples of tabloids, etc., giving instances where medical men who were in the habit of throwing such samples in the waste-paper basket as soon as received, subsequently discovered that they were rescued from thence by the maid-servants, who experimented, often with most dangerous preparations, upon themselves and upon their fellow-servants. In conclusion, Sir James said he could assure those present that the medical profession is in entire sympathy with the aims and objects of chemists, and he felt that the better the medical men and chemists worked together the better it would be for both.

There was one curious feature in connection with the foregoing speech which was especially noticeable to those seated near the Presidential chair. It was undoubtedly the speech of the evening, but while loud and prolonged expressions of approval arose on the right hand and on the left, there was a strange calm in the immediate neighbourhood of the speaker, where several representatives of the firms most interested in the sale of such preparations as he had denounced were seated.

Mr. T. Morley Taylor next proposed the toast of the

The Pharmaceutical Society.

He commenced his remarks by giving his experience of the ideas of the man in the street with respect to the Pharmaceutical Society, and went on to describe the views held by many chemists who appear to have a firmly rooted antipathy towards the Society, their idea being that it was founded with the sole object of abstracting guineas from the trade. The founders of the Pharmaceutical Society, he said, could not originally foresee many of the evils and unpleasant things it had subsequently encountered, the idea they had at that time was that a body of men who carried on the responsible business of dispensers of medicines ought to have a special qualification and special privileges attached to that qualification. With regard to the trade interests, restrictions on trade must necessarily be limited in face of the generally liberal commercial policy of Englishmen. The chemist and druggist of the present day who wants to get his own back must prove himself worthy, and must strive shoulder to shoulder with his fellows towards that end, and he thought he could not do that better than by joining the Pharmaceutical Society. He had great pleasure in coupling with the toast the name of the President, Mr. Walter Hills.

Mr. Hills thanked Mr. Taylor for the felicitous way in which he had proposed the toast, and those present for the cordial way in which it had been received. He did not know if it was by accident or design that the song "My Gal is a High-born Lady" immediately preceded the toast of "The Pharmaceutical Society" as a metaphor on the Society, but he did find that there was an opinion abroad that the Society was composed chiefly of West-end chemists, who were in such a position that they could not appreciate the difficulties of their provincial brethren. If that was the reason of the song being so placed, he could assure those holding that opinion that there was nothing in it. Those who lived in the West-end had just the same troubles and the same competition to contend with as those in the provinces. Mr. Hills then referred to the fact that that was the third occasion upon which he had had the honour of dining with the members of the C.A.A. as President of the Pharmaceutical Society, and went on to give a brief history of the progress of the last two years, speaking in high terms of the assistance that and other associations had rendered to the Society. In referring to the question of limited company pharmacy, he feelingly touched upon the recent death of Lord Herschell, remarking that they were all the more sorry in that they would lose his influence when that question again came before Parliament. The question of company pharmacy was not new to the Pharmaceutical Society, for ever since he had been connected with the Council it had been working in conjunction with the medical, dental, and veterinary professions in respect to the laws that affect limited companies. Hitherto they had not succeeded in accomplishing their object, but, acting on the remarks of the Lord Chancellor, made when the Pharmacy Acts Amendment Bill was before the House of Lords, coupled with what had recently taken place before the General Medical Council, the Council drafted the suggestions for a Bill now under consideration. The principle underlying those suggestions was that of the personal qualification of persons who keep open shop for the sale of poisons and the practice of phar-

macy, as being necessary for the greater safety of the public. If those suggestions are to be passed into law they must put their own house in order, and if the "Widows' Clause" proved to be detrimental to the passing of a Bill embodying the principle of personal qualification chemists must show that they are anxious that the public should be protected to the fullest extent and give up that Clause. Within the last three months the Society had passed the poison regulations, and they had received the approval of the Privy Council, and although some present might be disposed to disagree with the Society, he felt sure that it had strengthened its position with the Government. Mr. Hills went on to speak of the necessity of the Council representing the Society, and to show that it had not been inactive in the past, that it had done much good work, and was prepared to do still more. He then appealed to those present, who would probably exercise the franchise for the first time at the coming election, not to vote for anyone who has a fad or their own axe to grind, but to vote for men who would try in every possible way to improve the education of those about to enter pharmacy, and who would work for the objects the founders of the Society had in view, whether they be provincials or Londoners. Mr. Hills concluded his remarks by wishing the C.A.A. every success, especially as he believed it has in the past been of the greatest assistance to the parent Society.

Dr. Charles Symes said he rose to propose the toast of the

Chemists' Assistants' Association,

and to thank the Association that, in the absence of the President of the British Pharmaceutical Conference (Mr. Payne, of Belfast), they had invited the ex-President to participate in this very pleasant function of the Association. It might not be known to all the members that a London Chemists' Assistants' Association existed some thirty-five years or more ago. How long it survived or the cause of its demise he could not say, but in due course this Association, Phœnix like, sprang from its ashes and has had a vigorous existence ever since. It had now reached its majority, and had no mean record. Twenty-one years of good and useful work in the field of practical pharmacy with a reasonable amount of recreative change was something to be proud of. Such work gained the confidence of the medical profession and elevated the calling in the estimation of the public. It must, however, not rest on its laurels. There were still many problems to solve, many points to gain, and work to be done. They looked to the Association for help in these matters, and he was sure they would not look in vain. As in the past so in the future the members of the Association would no doubt take cognisance of and display a deep interest in all that was going on in the pharmaceutical world. Many no doubt would soon be in business on their own account, accepting the responsibilities of such mundane things as rent, taxes, and expenses. He appealed to them during their assistantship not to prostitute their qualification—which is becoming more valuable—to raising up or supporting illegitimate competition from which they would subsequently suffer. The assistants of to-day are the pharmacists of the future, and to them they looked to maintain in their integrity the best traditions of pharmacy. He coupled with the toast the name of the President of the Association (Mr. F. W. Gamble).

The President, in responding to the toast, thanked Dr. Symes for the kindly way in which he had proposed it, and those present for the cordiality of its reception. The dinner, he said, came of age that night, but the Association itself had some time since passed its majority. On this occasion the hope was warranted by the number of applications for tickets that all previous records would be passed, but many had been prevented by indisposition from attending. He had received letters from the Vice-President of the Pharmaceutical Society, Mr. Newsholme, from Mr. Michael Carteighe, and Mr. R. Bremridge, expressing their inability to be present. Whilst regretting the absence of so many, it afforded the younger members of the craft, as represented by the Association, no small measure of encouragement to be so well supported by their elders at their annual function. Local associations were undoubtedly a social and political force in pharmacy; they formed new friendships and cemented old ones; they were training schools for embryo officials of the parent Society, for local secretaries of which the Vice-President of the Pharmaceutical Society had lately said an additional 167 were required for detective work in shadowing members of Parliament. Chemists nowadays had other duties besides "pestling their . . . . poisons behind the crimson lights." They must support pharmaceutical institutions, those for mutual advancement and enlightenment as well as those in which lie the defence and the interests of the craft generally.

Mr. C. Morley then proposed the toast of the "Visitors." Mr. J. F. Harrington replying.—A good programme of vocal and instrumental music interspersed the toast list and was highly appreciated. Much credit is due to the indefatigable Secretary of the Dinner Committee, Mr. G. E. Pearson, for the excellent way in which all the arrangements were carried out.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

The annual supper of this Association was held at the Imperial Hotel, Market Street, Edinburgh, on Friday, March 3, when Mr. G. H. C. Rowland, President, occupied the chair, and Messrs. J. D. Sinclair, Vice-President, and D. Harley, Secretary, acted as croupiers. More than sixty sat down to supper, including Messrs. W. L. Currie, D. B. Dott, D. McLaren, P. Boa, George Lunan, R. I. McDougall, C. A. McPherson, W. Duncan, George Coull, J. Lothian, W. B. Cowie, R. G. Guyer, etc. A special Latin menu card had been artistically designed to celebrate the twenty-first year of the Association's existence.

Mr. Fraser McDiarmid proposed the toast of

The Pharmaceutical Society.

He said he felt sure all those registered chemists who had not yet joined that body would ultimately decide to do so, for there could be no doubt that was the best course to adopt. The Society had reason to congratulate itself on the passing of the Pharmacy Acts Amendment Bill, and they had also been able to defeat the Poisonous Substances Bill, which was directly contrary to previous legislation. As to the future, suggestions for a draft Pharmacy Bill had recently been published by the Council. The first suggested clause had much to be said in its favour, and had the draft stopped at that point there might have been some chance of a general agreement. The discussions in the Council on such topics should be open and public. The members were not kept sufficiently informed as to what was going on. They should have had the views of the members of Council and the arguments for and against the suggestions. It seemed impossible to believe that a body of men like the Council could be unanimous in the matter. It also seemed to him that the Council consisted too exclusively of men who could not be expected to understand the views and difficulties of chemists in the smaller country towns, and it would be a great improvement if the Council could be made more representative of all classes of registered chemists. The Society had done good work in the past and it had still much good work to do.

Mr. George Lunan, in acknowledging the toast, said the Society was anxious to do all it could for the welfare of pharmacy. As to the proposed draft Pharmacy Bill, it was desirable to regard all the suggestions as well designed, and criticism should be directed not to fault-finding but to making the most of what was suggested. The candid critic, who was often a nuisance, was a good deal in evidence. It was worse than idle to criticise the Society from the outside. Thanks to recent legislation, the body was now thoroughly democratic in its constitution, and all could join on equal terms. They should therefore join the Society, and then, from the inside, they would be able to dictate its policy in accordance with their own ideas.

Mr. J. Lothian, Glasgow, proposed the toast of the evening—that of the

Edinburgh Chemists', Assistants', and Apprentices' Association.

He referred to the fact that the Association had met to celebrate its coming of age. In the main its history had been one long record of success, and that success was all the more remarkable when it was considered that the membership of the Association is an everchanging one. He had always thought, too, that there was something thoroughly democratic, even in the title of the Association. But perhaps the most important point of all was that the Association had accomplished the objects with which it originally set forth, namely, to encourage study, further the advancement of pharmacy, and promote good-fellowship among its members.

The Chairman, in replying, gave numerous examples of the high positions now occupied by former members of the Associa-

tion. He also intimated that Mr. D. B. Dott had kindly offered a prize of one guinea for three years for excellence in knowledge of elementary physics.

Other toasts were "The Founders and Original Members," proposed by George Sinclair, ex-President, and replied to by Parish Councillor D. McLaren, first Vice-President; "The Edinburgh District Chemists' Trade Association," proposed by J. Rutherford Hill and replied to by C. A. MacPherson, in the unavoidable absence of the Hon. Secretary, C. F. Henry; "The Ladies," proposed by J. D. Sinclair and replied to by P. Boa. The proceedings of a most enjoyable evening were enlivened by an excellent programme of vocal and instrumental music contributed by Messrs. Duncan, Tait, Rae, Husband, Campbell, and Horsburgh, Mr. J. A. Crichton acting as accompanist. Mr. W. L. Currie proposed "The Chairman" and Mr. Rowland replied, and "Auld Lang Syne" brought the proceedings to a close.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council of this Society was held at 67, Lower Mount Street, Dublin, on March 1. Mr. R. J. Downes (President) in the chair. There were also present Dr. J. A. Walsh, Messrs. G. D. Beggs (Vice-President), J. Michie, J. I. Bernard, I. Edgar Connor, Geo. H. Grindley, Patrick Kelly, Johnston Montgomery, Chas. R. C. Tichborne, LL.D., and W. F. Wells, jun.

Personal Explanation by the President.

The President said: Before we go into the business of the agenda paper there is a matter to which I would like to refer. Since we last met I have ventured to address an open letter to the Council and members of the Pharmaceutical Society of Great Britain, which has been published in the three trade journals. When doing so I felt, as I still feel, that it required very urgent necessity to justify me in doing so, and I bring the matter before you now for your judgment, as it is your duty to repudiate my action if you think I ought not to have done so. But I think the answer of the Chief Secretary to Dr. Tanner is a full justification of my act. That answer concedes the correctness of our contention, that there is a scandal which requires to be dealt with, and that it must be dealt with as a question affecting the United Kingdom, and I believe it is equally a pledge that as soon as the way is found the Government will deal with it as such. The General Medical Council have several amendments that they desire to their Acts, but they keep this question of the abuse of the Companies Acts separate and distinct. We desire several amendments to our own Acts, but we think it well to let them bide till this first question is settled with the help of the Government; but the Council of the Pharmaceutical Society of Great Britain are on such exceptionally good terms wi h themselves and the Lord Chancellor that they are quite prepared to go inside and give everybody else the shove out. I have no desire to interfere with their suggestions for legislation on their own behalf; but I do think that when they decide on an independent course they might find some direct means of communicating their decision to this Society. For my part, I have been careful to address personal letters to their President when I found we were discussing questions on which our action might affect them, or on which we might be influenced by their views of expediency, so that we might not commit this Society to any action of apparent antagonism. It is far from my object to promote or provoke such a position. But I think it is our duty to remonstrate with and appeal to our sister, notwithstanding the superior intellectuality and influence, when we believe she is adopting a course which is prejudicial to the interests of both; nor is it unbecoming such dignity as we may claim to protest against a policy of selfishness and provincialism on a question admittedly of importance not only to the chemists and the druggists of the United Kingdom, but to the upholding of the laws of the realm as they were expected to apply. In concluding, I would like to express the pleasure I have felt at the attitude of the press, and my gratification that there has been no attempt to make mischief or aggravate the situation. It is for you gentlemen to repudiate what I have done if you think it is improper. Otherwise I take it for granted that you approve of it.

The President's action received the tacit approval of the meeting.

Breaches of the Pharmacy Act.

The Registrar (Mr. Ferrall) read a letter from the Under-Secretary, Dublin Castle, transmitting copy of a memorial from John O'Meara, shopkeeper, of Killimor, Co. Galway, to the Lord-Lieutenant, praying for a reduction of the fine of £5 imposed upon him for breach of the Pharmacy Act. The memorial stated that O'Meara was summoned before the magistrates at Killimor Petty Sessions on January 7, on three separate charges, (1) for keeping open shop for the sale of carbolic acid; (2) for having sold carbolic acid; and (3) for having sold the poison without having the bottle containing it distinctly labelled. The memorialist proceeded to say that he was fined in No. 1 the sum of £5, that the summons in No. 2 was withdrawn, and that the summons in No. 3 was dismissed; that he admitted the fact of having sold said poison but was altogether unaware that was in any way violating the law; that Colonel Longbourne, R.M., and the Hon. Charles Nugent, the magistrates, expressed their regret that, having regard to the decision of the Queen's Bench in the case of the Queen (McGann) *v.* Kelly they were constrained to fine memorialist £5; and that the magistrates expressed themselves strongly in favour of a reduction of the fine. The Registrar said that on the third charge O'Meara was fined one penny and one shilling costs.

President: It was not dismissed as he states here.

Mr. Wells: The magistrates showed their appreciation of the protection of the public by fining him a penny for not marking it "poison."

The President stated that the Pharmaceutical Society had incurred an expense of one guinea for the analysis.

Mr. Wells said it was rather hard on them to have to undergo these expenses for analysis, and that the Lord-Lieutenant should then reduce the penalties to such a figure as would leave the Society out of pocket.

Dr. Tichborne said he thought the Society should ask for an interview with the Lord-Lieutenant, and put the matter strongly before him.

Mr. Bernard suggested that they should have the grievance exposed in the House of Commons.

The President considered it would be well if they asked a member of the House of Commons to ask for a return of the cases in which the Lord-Lieutenant had been memorialised, and in which he had reduced the penalty.

A letter was received from Mr. W. B. Galway, solicitor, Belfast, remitting two-thirds of fines imposed upon James Hogg, David Manson, and Hugh McIntyre, for breaches of the Pharmacy Act.

The Society and the College of Preceptors' Certificate.

A letter was received from Mr. T. B. Brayshay submitting Preliminary Registration Certificate from the Pharmaceutical Society of Great Britain for acceptance in lieu of the Preliminary examination of the Pharmaceutical Society of Ireland. It appeared that Mr. Brayshay had not passed the Preliminary examination of the Pharmaceutical Society of Great Britain, his certificate being from the College of Preceptors for passing the examination of the third division, second class.

After a discussion it was unanimously resolved, on the motion of Mr. Bernard, seconded by Mr. Wells—

> That the Registration Certificate presented by Mr. Brayshay be not accepted, as he has not passed the Preliminary examination of the Pharmaceutical Society of Great Britain, and his certificate from the College of Preceptors being of a lower class than that hitherto accepted by the General Medical Council.

The Pharmacopœia Committee.

Dr. M. R. Whitla, M.P.S.I., Mr. Montgomery, and Mr. Doran were added to this Committee.

Alteration of Regulations.

On the motion of Mr. Beggs, seconded by Mr. Wells, it was resolved

> That School of Chemistry Regulation VI. (*vide* Calendar, page 87), be amended to read as follows: "That no pupil be allowed to attend the classes until he has paid at least one-half of the fees, and shall not enter on the second half until the remainder of the fee has been paid, and the whole course to be completed within six months."

The Irish Pharmacists' Assistants' Association.

Attention was drawn to the title, "Irish Pharmacists' Association," which appeared on a dance programme, and also on the tickets recently issued by the Irish Pharmacists' Assistants' Association, and it was also stated that the title with the omission of the word "assistants" frequently appeared in print.

The Registrar was instructed to write to the Hon. Secretary of the Association, requesting an explanation of the use of the title referred to, and pointing out that the Society considered it misleading.

Some routine and committee business was also transacted, and the Council then adjourned.

SHEFFIELD MICROSCOPICAL SOCIETY.

At a meeting of this Society, on Friday, February 24, Dr. Arthur Hall, presided, and there was a large attendance of members of the Society, to hear Dr. Robertson, medical officer of health for the City of Sheffield, deliver a very interesting lecture on

Some Points in the Bacteriology of Public Water Supplies.

The lecturer said within recent years bacteriological methods had been applied in the examination of public water supplies with very varying degrees of success. Insufficient methods had been applied, and deductions had been drawn from bacteriological data which were entirely unwarranted, and as a result bacteriology as applied to our public supplies was somewhat discounted. The examination of public water supplies by a competent bacteriologist was, however, of the greatest possible utility in many ways, and, indeed, was a much more delicate indication of contamination than any of the chemical methods employed. He must not be understood to detract from the value of chemical methods in any way. He believed that bacteriological examinations revealed slight pollutions much more readily than did chemical methods, and although he did not think the former would ever supplant the latter, they were of immense value as an adjunct. There were two conflicting interests which the chemist and the bacteriologist had to deal with when they had to report on any public water supply. They had to guard the consumer against any possible danger which might arise from the use of the particular water, and they must not condemn without real cause any water supply, otherwise unnecessary trouble and expense were thrown on the general body of ratepayers. Having divided public water supplies into three classes—those derived from gathering grounds, those from deep wells and springs, and those from rivers—he said there was no such thing as a public supply which was quite free from any bacteria. Rain-water, as it fell through the air, picked up a certain number of organisms, even before it touched the ground. That number was increased enormously as the rain arrived at the surface of the soil and passed over it. To some extent the organisms were filtered out as they passed downwards through the soil, but even water taken many feet below the surface still contained a good many organisms of various kinds. He had had opportunities of examining water from many deep wells, and he had never found one which was perfectly sterile. He had found a shallow well in Sheffield which was perfectly sterile, but that was under very unusual conditions. It might be taken that all deep well waters contained a few organisms. They were very few indeed, and he believed that they were due mainly to percolation down the sides of the well and not to organisms having been carried through enormous depths of soil into the well.

A great many eminent bacteriologists had tried to fix standards of purity from the number of organisms present in the water. He believed the first standard was made by two Englishmen, Angus Smith and Dr. Frankland. It was not published at the time, and later the same standard was made by Professor Koch, and had been very widely known and recognised. He was not aware that it was a good standard, but one ought to know it. Professor Koch laid it down that water which had been filtered through sand should not contain more than 100 organisms in a cubic centimetre (which was equal to about 18 drops). Miguel gave the following scale: Excessively pure water, 0 to 10 per cubic centimetre; very pure, 10 to 100; pure, 100 to 1000; passable, 1000 to 10,000; impure, 10,000 to 100,000; very impure, over 100,000. Many observers had argued that a good water should only contain a very few varieties of organisms. He did not think this could be relied upon. He did not see why, because a water contained twenty varieties of organisms, instead of two or three, that water should in any way be condemned. Importance had also been attached to the fact of a water containing a large number of liquefying organisms, but he had seen some Sheffield waters which contained a large number of these, and yet they were derived from the moors and were perfectly innocuous. There was no consensus of opinion with regard to the interpretation of results. Most bacteriologists would agree that a water for a public supply containing over 1000 organisms per cubic centimetre was not good, but further than that, there was no unanimity of opinion. To Professor Delépin, of Owens College, Manchester, was due the credit of throwing considerable additional light on the results of the examination of waters of moderate and great purity. He (the lecturer) had had a good deal of experience in verifying the professor's methods, and he thought they were the only reliable ones to be applied to public water supplies. They gave results which appeared to him to be entirely free from ambiguity when applied to the investigation of a surface or sub-soil water. No general standard of purity could be relied upon, but where they had a supply from gathering grounds, as was the case in Sheffield, they could go to the moors and find feeders which were absolutely uncontaminated. The number of organisms in all soil, however—moorland as well as manured soil, was enormous, every ounce of soil containing many millions of them; and the liability during heavy rains of organisms getting washed into the feeders was very great indeed. In the practical application of the methods these variations were unimportant, but it was useful to have a standard for wet weather as well as for dry weather. It might be supposed that the cold weather of winter would kill the organisms, but as a matter or fact they were not like some of the disease-producing organisms, and lived perfectly well at a low temperature. Having determined upon a standard for a certain gathering ground, it was remarkable how good a guide this was to contamination at other points of the same ground, soakage from a farm or other organic contamination could easily be detected. By following up a stream a point would be found where the water was pure, and on comparing the results of a bacteriological examination of such a sample with that of a sample polluted the difference was at once very marked. It was possible to add a few millions of typhoid organisms to a gallon of perfectly pure distilled water, and then to have that water examined by chemical methods and declared to be perfectly pure. Such a condition did not often happen in nature, but it was the fact. A bacteriological examination of such a water would show it to be teeming with organisms. In the same way many slight pollutions in a large gathering ground could only be detected by such a comparative method as he had described.

Having obtained one's standard it was only necessary to examine the feeders as they entered the reservoir. If the number and species of organisms were found to be markedly greater than in uncontaminated feeders this would, of course, indicate that the source of contamination should be sought for and removed. Again, if this method were adopted, a weekly examination of a water supply would give the most sensitive results, should any slight pollution take place. As showing the increase in the number of organisms in the rainy period, Dr. Robertson said that the Thames water sometimes contained as many as 160,000 in eighteen drops. Generally taking one month with another, there was an average of 20,000 or 30,000, but during the five years ended 1897 the average for one company was 50,560, a condition in which the water could never be supplied to the general public without, in all probability, something happening. Dr. Robertson went on to explain the methods of collecting water for examination. Small tubes drawn out to a point were used; these could be hermetically sealed and kept pure. When they were dipped in the water the point was broken off with a pair of sterile forceps, and on being withdrawn they were again sealed. If the examination was not to be made immediately they must be placed in a cold storage, as at a temperature just above freezing point, the organisms did not multiply. For examination, the water should be mixed in glass dishes with beef jelly, which was a good nourishing medium, and when the colonies of organisms were visible to the naked eye, the dishes might be placed against a black ground, such as black glass, and the organisms counted with the aid of a hand lens, the squares into which the black glass was divided assisting the counting. More difficult than the counting of the number was the task of finding out whether there were any disease organisms present. They had at present to use very imperfect methods indeed, and a lot that had been done and said on the subject was absolutely not true. One often read of analyses of water where bacteriologists had certified that the samples submitted to them contained no typhoid organisms; but when they were dealing with millions of organisms it was a matter

of extreme difficulty to find one that would produce disease. In looking for typhoid organisms, they had to adopt a process of killing off the others by heating the water to the temperature of the human body. He recommended the study of water as an element of microscopical work which would take a very important place in the near future. The lecturer pointed out the extreme usefulness of subsidence of water (in settling ponds) and of sand filters in keeping back organisms, the average result of the sand filter being that it kept back 99 per cent. of the bacteria, and he showed how bacteriological examination would check results and prove whether a filter was doing its work or not. In conclusion, he expressed the opinion that the perils of water-borne disease had been very much over-estimated, and, referring especially to the Redmires reservoirs at Sheffield, where the water of the top dam is decanted into a second, and then into a third, from which the town supply is drawn, said if a number of typhoid organisms were let loose in the top dam there would be very little chance indeed of their getting to the town, as, in the weeks that must elapse before the water was drawn off, other organisms would destroy them, or sedimentation would have occurred.

The lecturer was heartily thanked at the close, on the proposition of Alderman Gamble, seconded by Dr. G. Wilkinson, and supported by the Chairman, who referred with pleasure to the fact that Dr. Robertson is to have charge of a bacteriological laboratory to be established in connection with the University College, Sheffield.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

The first annual dinner of this Association was held on Thursday, March 2, when the President, Mr. A. Foster, occupied the chair, and, in addition to local members, there were present representatives from Bradford, Halifax, Wakefield, York, and Southport.

Mr. H. Waddington (President of the Bradford and District Chemists' Association) proposed the toast of the

Dewsbury and District Chemists' Association.

He said no other Association had in so short a time made such a name for itself as had the Dewsbury Association, and he spoke in favour of combination. A forward spirit was manifesting itself, and chemists would only be able to gain their ends by combination. If the Lord Chancellor saw they were united he would include the suggestions of the Pharmaceutical Society now under consideration in a draft Bill. It was essential they should unite to protect the title of chemist and druggist against its use by companies of unqualified men, and against illegitimate trading. By combination they might also prevent the sale of poisons by unregistered individuals, foster a friendly feeling among members of the trade, strengthen the hands of the Pharmaceutical Society, prevent their own members from contravening the Pharmacy Act, and prevent the dispensing of medicines and poisons in doctors' surgeries by unqualified men. They should look upon the Pharmaceutical Society, which would be what the chemists and druggists of the land made it, as the head of the various organisations in Great Britain. He suggested that the Leeds, Bradford, Keighley, Dewsbury, Halifax, Brighouse, and Morley societies should affiliate, so that they would be in a position to choose someone to go to London to represent the West Riding of Yorkshire on the Council of the Pharmaceutical Society. He also said he would be glad if the associations represented that night could do something in favour of the excellent scheme recently proposed by Mr. Newsholme.

Mr. Foster (President) and Mr. G. Walker (Vice-President) responded, the former remarking that he thought the Dewsbury Association had done some good; some benefit, he said, might result from the Beecham controversy. Mr. Foster also expressed a hope that Mr. Waddington's suggestions would take root, and said he would not let the matter rest.

Mr. S. N. Pickard (Bradford), proposed the toast of the

Pharmaceutical Society,

remarking that the Society had done a great work in the past. By the passing of the Act last year, the thin end of the wedge had been got in. Referring to the suggested draft Bill, he observed that there was some antagonism to certain clauses, but pointed out that the Pharmaceutical Society understood the requirements better than individuals. Having an able President and a good Council, all that was required now was the support from the country. If there were more associations like the one at Dewsbury, they would be able to go into the fight with more energy and zeal.

Mr. W. Stead (Heckmondwike) replied, and urged the desirability of all chemists joining the Pharmaceutical Society, and thus closing up their ranks. He said he was amazed to find that less than half the chemists of the country were members of the Pharmaceutical Society. Having asked for support for the Benevolent Fund, Mr. Stead thanked local chemists for the support given to him since he was elected local secretary. He also stated that eighty per cent. of the members of the Dewsbury Association were members of the Pharmaceutical Society.

Mr. J. W. Cussons (Ossett) proposed

The Federation of Local Associations.

In the past, he said, chemists had been very exclusive, but now they were joining hand in hand for the common weal. By means of federations of local associations they would be able to control both the Pharmaceutical Society and the Government for the time being.

Mr. Chaplin (Wakefield) responded, and said there was a prospect of an association being formed at Wakefield.

Mr. Silson (Bradford) and Mr. Russell (Southport) acknowledged the toast of "The Visitors," which was submitted by Mr. R. Gledhill (Secretary of the Dewsbury Association).

The toast of "The President" was given by Mr. Rimmington (Bradford), Mr. Foster briefly replying.

The first annual general meeting of this Association was held on Monday evening, March 6, Mr. A. Foster presiding. There were also present Messrs. G. Walker, C. Gloyne, G. N. Gutteridge, and R. Gledhill, Dewsbury; W. Stead, Mallinson, and A. B. Barker, Heckmondwike; J. Ingham, and J. W. Cussons, Ossett; J. Day, Savile Town; and C. Crook, Mirfield.

Mr. Gledhill reported that Messrs. Briggs and Powell, Horbury, were desirous of joining the Association, and on the motion of the Chairman they were admitted.

The annual report was read by Mr. Gledhill. This stated that although the Association had only been in existence a year, it could take a front place among the chemists' associations of the country. Financially the Association was sound, and the membership was good. Among the subjects dealt with during the year was the Government's Poisonous Substances Bill, and the Association could take great credit to itself, as it was the first in the north to deal with it. The Pharmacy Acts Amendment Bill had been considered, and many of the members had become members of the Pharmaceutical Society. Reference was next made to the Beecham controversy, and regret was expressed that the labours of the Association were not successful. "Camwal" had been communicated with, and in this case also it was regretted that the answers were not satisfactory. The Association had joined the Federated Pharmaceutical Association and the P.A.T.A. Two pharmaceutical local secretaries had been appointed in the district covered by the Association. Communications had been addressed to the Privy Council, the British Medical Association, and the Pharmaceutical Society on the dispensing in surgeries and institutions by unqualified persons. It was hoped this question would receive the attention it deserved. The Association noted with pleasure that the Pharmaceutical Society was making an attempt to get the Pharmacy Act amended. The Association had this matter under consideration, with a view to supporting the Pharmaceutical Society. The report closed with a reference to the death of Mr. T. Kerry, Ravensthorpe, a member of the Association, and with a hope that the Association would always be found in the front ranks, fighting for everything that had for its object the benefiting of the chemists of the kingdom.

The report was adopted, as was also a financial statement submitted by Mr. Stead, and which showed a balance in hand of over £2.

Mr. Foster was re-elected President, Messrs. C. Crook and G. Walker were re-appointed Vice-Presidents, and Messrs. R. Gledhill and W. Stead were re-elected as Secretary and Treasurer respectively.

These gentlemen were also thanked for their services during the past year.

ROYAL INSTITUTION.

On Thursday, February 23, Allan Macfadyen, M.D., B.Sc., Director of the Jenner Institute of Preventive Medicine, gave the third of a course of lectures on

Toxins and Antitoxins.

He dealt mainly with antitoxins and the methods of obtaining an antitoxic serum. Speaking of the proneness of the body to the attacks of bacteria, the lecturer pointed out that, fortunately, no living cell is without the means of defence. There are, roughly speaking, more than a hundred species of these organisms that infest the skin. So long as the integument remains impermeable the tissues of the body normally are free from bacteria, but once the surface is broken even a microscopic lesion will admit a host, and the result may be a boil, erysipelas, or other affection, according to the species of the invader. This accounts largely for the spread of plague among Asiatics. The virulence of plague in Bombay is a case in point. The natives live in filthy houses, where the sun seldom gains access, and they make no effort to keep their bodies clean. It follows that in presence of the plague bacillus, which the filth harbours, the native has only to scratch himself, as he often does, to relieve irritation, to inoculate himself with plague. Anthrax may also be inoculated in this way: mosquitoes are the commonest agency, in hot climates, for conveying the specific malarial bacteria into the blood. The skin may therefore be looked upon as the first line of defence against bacteria. The mouth, as well as the respiratory and digestive tracts, are largely inhabited by bacteria. The skin or lining membrane of these parts, if intact, is sufficient to keep off harmful bacteria. The gastric juice, containing much hydrochloric acid. is especially useful in destroying, among others, the cholera bacillus, which is extremely sensitive to free acids. In the lower portions of the digestive tract diarrhœa and vomiting are often due to an effort on the part of the system to get rid of harmful bacteria. The nose may be regarded as a perfect germ filter; the habit of breathing through the nose is useful, therefore, not only as a means of warming the inspired air, but also of protecting the lungs from certain bacteria. The means of defence were next considered when the organisms have gained access to the tissues. It is commonly known that certain individuals possess an immunity, that is, a freedom from certain morbid influences, especially from infectious attacks. The word immunity, it is interesting to note, originally meant a freedom from certain public obligations which were incumbent on ordinary individuals. Scarlet fever does not attack all who harbour the specific organism of that disease, and never attacks the lower animals. Birds do not suffer from anthrax, nor the black man from yellow fever, a complaint which is so fatal to the white man. Black-leg is an ailment unknown to cattle, and man alone is affected by typhoid fever. These are special cases of natural immunity to the disease in question. Everyone knows that certain infectious complaints, *e.g.*, scarlet fever, measles, and small-pox, seldom attack an individual more than once in a lifetime. One attack seems to serve as a preventive against subsequent attacks. This kind of immunity, technically known as acquired natural immunity, is of great service, inasmuch as often a mild attack of a specific disease may serve to ward off more virulent forms of that disease in the future. There is another form of insusceptibility which is brought about by means of vaccines, and known as artificial acquired immunity; the method of vaccination to keep off severe attacks of small-pox is a well-known example of this variety. Here it was incidentally mentioned that the best way to test the value of a disinfectant is to try its effect on controls of pure strains of specific bacteria. Reverting to the subject of infection, the lecturer remarked that whilst an organism produces infection its toxin is the cause of the intoxication that follows. An individual may not be susceptible to both an organism and its toxin. The *Bacillus prodigiosus* is harmless to man, but its toxin, on the other hand, is harmful. Rats are immune to both the organism of diphtheria and its toxin. Immunity depends on the inherent properties of the blood and lymphatic fluid. Thus Nuttall found that while blood kills the anthrax bacillus, it cannot do so after it has been heated to 55° C. The blood of the white rat also destroys the anthrax bacillus. There are many other theories that have been ventured to account for the peculiar cases of insusceptibility with which bacteriologists are acquainted. Buchner thought that there were chemical bodies in the blood, to which he gave the name alexins, that were only active in saline solutions, were precipitated by alcohol and destroyed by heat. There are, however, objections to this view, inasmuch as the rabbit suffers from anthrax, whilst its blood is antiseptic to the anthrax bacillus. Furthermore, the dog is immune to this disease, but its blood is not antiseptic, as is that of the rabbit. There is reason to believe that the antiseptic property of blood depends on the number of corpuscles present, and that the alexins are secretion products of the leucocytes of the blood. There are bodies in the blood known as fagocytes; some are anchored, *e.g.*, in the spleen and bone marrow. These get rid of invading organisms. Others are wandering fagocytes which hasten to any spot where inflammation is set up, and demolish the bacteria that cause the inflammation, which may therefore be called the danger signal. It is these wandering fagocytes in the blood of the dog that eat up the anthrax bacillus. Speaking at some length about natural acquired immunity, Dr. Macfadyen said that after an attack of cholera, diphtheria, or typhoid the blood may contain an antitoxic substance. He referred to the remarkable discovery that the typhoid bacilli have the property of agglutinating the blood of a patient suffering from that disease. They become mobile, collect in clumps, and fall to the bottom of the test-tube. This property is largely made use of in the early diagnosis of typhoid fever, and enables the medical man to prescribe the correct treatment in the early stages of the disease. This property is ascribed to the presence in the blood of a hypothetical substance, to which the name aglutinin has been given. In cholera and typhoid it has been observed that the fluid portion of the patient's blood causes the organisms to break up and disappear. Pasteur was the first to employ an attenuated virus for inoculation, a method which led to conspicuous success in the treatment of hydrophobia. In certain cases—*e g.*, in typhoid and cholera—artificial acquired immunity may render the patient immune to the bacteria, but not to the resulting toxin. There is not an unlimited quantity of antitoxin produced; indeed, human subjects seldom produce sufficient to enable another to be immunised. The horse is the most useful animal for the purpose; it is readily immunised, and large quantities of blood may be drawn. The toxin is best administered to the animal in an attenuated form, in graduated doses at intervals. A small dose produces fever, larger doses bring on a mild form of the disease, and the treatment ends with toleration. Having introduced the maximum amount, bleed the animal, and separate the serum, which contains the antitoxic substance, or antitoxin, in solution. In this way the diphtheria antitoxin is obtained, which was one of the first of the serum therapeutic agents to be used in the prevention and cure of disease.

On Friday, February 24, a discourse was delivered by Professor Oliver Lodge, F.R S., on

Coherers.

In explaining the meaning of the term coherer the lecturer said it was well first of all to say what is a microphone. This instrument is that part of a telephone to which the voice is directed, and consists of a loose carbon contact which is able to transmit a current of electricity, but with difficulty. Talk into it and it transmits the current. A coherer does for ether waves what the microphone does for sound waves. In both cases the waves impinge upon the instrument and make a signal. If a coherer be defined as a thing which is sensitive to ether waves the definition will be too general, as it will include the eye and the photographic plate. The lecturer remarked that his attempts to prove that the eye is a coherer had failed to gain acceptance among physiologists, but he was not yet sure that he was wrong in holding the view. The possibility of wireless telegraphy had created great astonishment and surprise in the world There is no reason why this should be the case. Fifty years or more ago it would have been a wonder to use wires for signalling purposes. Sound requires no wires to enable it to travel, while the heliograph is a well-known instance of an instrument that flashes signals from hill-top to hill-top in India, without there being any mechanical connection. A coherer unites electrically and breaks mechanically. The influence of an electric spark on a coherer is similar to that of a thunderstorm on rain; the drops of rain are much larger, owing to their being under electrical influence. The lecturer illustrated this principle by means of an experiment devised by Lord Rayleigh, and it was seen that when an electrified rod of sealing wax was brought near a fine jet of water, instead of a fine spray, there fell fair-sized drops of water. Another

experiment was performed to demonstrate that when two jets of water impinge on each other they rebound, whereas when electricity is applied they unite, owing to a difference in potential in the two streams of water. The lecturer stated that he was inclined to regard electrostatic action as a form of chemical action at a distance. An experiment interesting to pharmacists was then shown, in which a current of electricity was passed through a crude emulsion obtained by briskly agitating oil and water together. Under electrical action the liquid separated almost instantly into two distinct layers. It is curious to note that the experiments, which occupied the greater part of the hour, followed each other in the most incoherent manner imaginable; for example, the next experiment led the lecturer to discourse at some length on means of getting rid of London fog, dealing with quite a different variety of coherer than that connected with wireless telegraphy. A bell-jar, filled with the smoke produced by burning magnesium ribbon, was exposed to electrical action; the atmosphere, which ordinarily would take some hours to clear, was rendered so almost instantaneously on passing the current. It was then shown that cohesion is established by electrical influence, but broken by mechanical influence. The detection of Hertz waves next received attention, and the work of Broulé and Minchin discussed. The former was engaged in measuring the resistance, among other things, of metallic filings, and noticed that when electric sparks were in the neighbourhood the resistance fell. These workers, especially the former, by following up their researches, have done much to throw light on this new branch of applied science.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

Sad Gaps have Within the Last Few Years been made in the ranks of the old pioneers of pharmacy in Victoria, another of whom, Mr. Thomas Mordey Blackett, brother of Mr. C. R. Blackett, Victorian Government Analyst, and son of the late Rev. C. R. Blackett, Southminster, Essex, died on January 2 at Williamstown, where he had been established in business since 1857. Mr. Blackett took a deep interest in the Pharmaceutical Society of Australasia, and occupied successively the positions of Vice-President and President. He was highly respected by the residents of Williamstown, and when starting on a visit to England a few years ago was publicly entertained by them. The funeral was attended by a large number of the leading pharmacists, by whom his memory will long be cherished.

According to the Recently Published Annual Report of the New South Wales Pharmacy Board, the total number of registrations granted under the Pharmacy Act during 1897 and 1898 was 672. Four deaths had occurred, leaving 668 on the Register on December 31, 1898.

In a Letter to the Secretary of the Pharmaceutical Society of New South Wales, Mr. Bellemey has formally tendered his resignation as a member of the Council, and further intimated his intention of ceasing to be a member of the Society as soon as his subscription runs out. Referring to the alteration made in the rules, by which registered men were denied the right, as such, of becoming members of the Society, Mr. Bellemey adds:—"I am not surprised at the opposition shown to the old Society by the pharmacists of this colony when they see the unpatriotic course the Society has adopted, which must prevent reciprocity between the colonies. My vote and opposition have been against measures, not individuals, and I am very much disedified by the course some members of the Council are pursuing in regard to myself and others who agree with me in our efforts to make the pharmacists of New South Wales a united and powerful body whose influence can be exercised and felt though the medium of a large and well-organised Society, instead of having a small Society representing only a section of the pharmacists of New South Wales."

The Following Standards for Foods have been fixed by the N.S.W. Board of Health for the purposes of the Health Acts:—Milk to contain not less than 12 per cent. of natural milk solids, of which at least three and two-tenths shall be genuine butter-fat. Butter to contain not less than 83 per cent. of genuine butter-fat. Tea shall not contain more than 8 per cent. of mineral matter—calculated in the tea dried at 100° C.—of which at least 3 per cent. shall be soluble in water, and the tea as sold shall yield at least 28 per cent. of extract. Vinegar shall contain not less than 3 per cent. of acetic acid ($C_2H_4O_2$) and not more than 1000th part by weight of sulphuric acid.

The Proposed Arrangements between the Pharmacy Board and the Sydney University respecting lectures and examinations in chemistry, practical chemistry, botany, and materia medica, have now been definitely concluded. Practical pharmacy will, however, be retained by the Board in its own hands, and it is understood that it is endeavouring to induce the Government to make an annual grant of £100, to establish a university course in practical pharmacy.

The Old Pharmacy Board of New Zealand held its last meeting on December 22, and had to congratulate itself on the results of three years' term of office, including the successful steering of the Pharmacy Bill through the troubled waters of the Legislature. Special credit was accorded to the President, Mr. Graves Aickin, for the ability, zeal, and courtesy displayed by him, and the Registrar, Mr. H. W. Garland, came in for equally warm encomiums and a bonus of £25. Financially the retiring Board leaves matters in a very satisfactory condition, a statement submitted to the meeting showing that it had to its credit a sum of £575 11*s.* 2*d.*

At the Half-Yearly Meeting of the Pharmaceutical Society of South Australia, held on January 10, the President, Mr. J. White, referring to the new departure in the educational scheme, particulars of which were given in a previous issue, remarked: "There seems to be good reason to think that this step, although to some extent a departure from the usual method followed in pharmaceutical education, will tend to ensure more thorough knowledge of subjects studied. I understand that the English Society regard a similar method with favour, but as far as I know South Australia is the first to initiate this plan. Our system of education is not a compulsory one, so that a student is at liberty to obtain his knowledge elsewhere. But although nominally not so, it is really compulsory, because the examinations are necessarily based upon the course of study. On each occasion that students have attempted the examination without the recognised teaching they have found it wiser to retire from the task. So our youths will do well to adopt the efficient and comparatively inexpensive instruction available at the University."

Great Interest was Taken at the above meeting in a display of exhibits the work of competitors for the President's prize, and consisting of various pharmaceutical and chemical preparations as prescribed by the Committee appointed to arrange the competition, the substances chosen this year being as follows:—Ung. hydrarg., nitrat., ferri tart., liquor ferri perchlor. fort., santonine, tartaric acid, crystals. The judges unanimously awarded the prize to Mr. Cooper, but the work of Mr. Magarey was also considered so excellent as to lead the President of the Pharmacy Board (Mr. Main), to announce his intention of recognising his efforts in some suitable manner.

Thallium Acetate in the Nocturnal Sweats of Phthisis.—In the form of pills, each containing 10 centigrammes of the salt, thallium acetate has a remarkable effect, according to Combemale, as an antisudorific in the majority of cases of nocturnal perspiration, both in patients suffering from phthisis or from chronic bronchial trouble. The dose is from 10 to 20 centigrammes, and should be taken about an hour before the usual time of the advent of the perspiration. The drug should not be given more than four days consecutively, since its action is very persistent, lasting for eight or ten days. A curious secondary effect was observed in three cases. The patients were the victims of a rapid and complete alopecia, but these were cases which had taken from 80 centigrammes to 110 centigrammes in a month. Where less doses were given this startling effect was not observed. —*Nouv. Rem.*, **14**, 178. [Huchard has, however, subsequently found this effect to be sufficiently serious to prevent him from recommending the use of the drug. See *P. J.* [4], 402*b*.]

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACTS.

Pharmaceutical Society *v.* Currie.

On March 7, at the County Court, Manchester, before his Honour Judge Parry, the Council of the Pharmaceutical Society of Great Britain sued Mrs. C. R. Currie, of 25, Hyde Road, Gorton, for penalties for selling poison, contrary to the provisions of the Pharmacy Act, 1868.

Mr. R. E Vaughan Williams, instructed by Messrs. Flux, Thompson, and Flux, appeared for the Society; the defendant did not appear.

Mr. Vaughan Williams: I appear for the plaintiffs, and the proceedings are taken under the Pharmacy Act, 1868, and the Pharmacy Act, 1852, the Act of 1852 providing for the form of procedure which fixes the County Court as the Court in which to recover penalties under the Act of 1868. Your Honour being acquainted with the Statute, I will only say that this particular claim arises under Section 15 of the Act of 1868 for two penalties for the unlawful sale of poisons, one incurred on November 15, 1898, for selling morphine, a poison contained in a compound called Mrs. Winslow's soothing syrup; and the second penalty incurred on November 23, 1898, for selling laudanum, a preparation of opium. Both morphine and laudanum are included in the Schedule of the Act of 1868, and unless a person is registered as a chemist and druggist he cannot sell any of the poisons enumerated in that Schedule. The facts in this case are that Mr. Foulds went on two occasions to 25, Hyde Road, Gorton, the shop of a Mr. Pilling, who is a registered chemist and druggist. The defendant, who is the wife of the unqualified assistant employed by Mr. Pilling, was attending to the duties of the shop, and on each occasion sold the poison to Mr. Foulds. This lady must have been well aware that she was doing an illegal act, as, early in the same year, her husband was proceeded against by the plaintiff Society for a similar offence, and she conducted the correspondence which then took place with the Society's solicitors. It would appear from the Register that defendant is not qualified or registered as a chemist and druggist, and having proved the facts stated I shall ask for judgment for the penalties.

His Honour: There is some question as to service of the summons.

Mr. Williams: I can satisfy your Honour as to that, as inquiries have been made, and the Officer of the Court can confirm the evidence if your Honour thinks it necessary to make inquiry.

Mr. Arthur Foulds, examined: I went to 25, Hyde Road, Gorton, on the 3rd inst. I pointed out Mrs. Currie to the Bailiff, who had left the summons with her husband, and she then said she knew all about the summons. On November 15, 1898, I went to the shop and purchased a bottle of Mr. Winslow's soothing syrup. On November 25 I again went to the shop and purchased twopennyworth of laudanum. On both occasions defendant served me, and she was the only person in the shop. I handed the purchases to Mr. Moon.

His Honour: What sort of shop was it?

Witness: A chemist's shop belonging to Mr. Pilling, who is a chemist.

Mr. Harry Moon proved receiving the purchases from Mr. Foulds and handing them over to the analyst.

Mr. E. J. Eastes, F.I.C., examined: I received the bottles produced from Mr. Moon. I analysed the contents of the bottle of Winslow's soothing syrup. I found it to contain morphine, the chief toxic constituent of opium. I also analysed the contents of the bottle labelled laudanum, it contained a quarter of an ounce of a fluid, that I proved to be tincture of opium. The amount of opium in the purchase was nearly 9 grains.

His Honour: Is there a sufficient amount of laudanum to be injurious?

Witness: Yes, less than that quantity has proved fatal.

His Honour: I ask the question because it is sometimes thought that these proceedings are taken for trade purposes, whilst in fact they are for the protection and safety of the public.

Mr. Williams: I put in the Register, and that is my case.

His Honour: I think you have proved your case, and there must be judgment for the plaintiffs for the two penalties with costs.

LETTERS TO THE EDITOR.

Strength of Solution of Strychnine Hydrochloride, B.P.

Sir,—In reply to the letter appearing on this subject in your Journal of last week, we did not comment upon the formula given in the British Pharmacopœia for strychnine hydrochloride because we had not sufficient evidence before us when that part of the 'Companion' was made up into pages, and there was no room subsequently to insert a paragraph on this matter. Before we actually went to press it had become probable that the formula did not correspond with the strychnine hydrochloride of commerce, and at the last moment the paragraph on the relative strength of the solution was made to agree with the figure given in Mr. Lunan's letter, of July, 1898, for one and a-half H_2O. It is curious that Mr. Lunan should be the one to take exception to it, since it turns out that the deductions in Mr. Lunan's letter are incorrect. For on the assumption that 4 minims of a solution are diluted to 5, it is a quarter weaker and not a fifth, and also when 5 minims are diluted to 6, the solution is a fifth weaker and not a sixth. In the hurry of going to press we omitted to notice this discrepancy in Mr. Lunan's letter which had all the appearance of careful calculation.

London, March 6, 1899. P. W. Squire.

Strength of Syrup of Codeine, B.P.

Sir,—With reference to the above, Squire states in his latest 'Companion' (p. 233) "It is twice the strength of the syrup described in previous editions of the 'Companion';" whilst on the preceding page under "Syr. codeinæ, B.P.C." he says "This is the same strength as in former editions of the 'Companion.'" The latter contains 1 gr. of codeine per oz; the former contains 2 grs. of phosphate of codeine per oz. The B.P. syrup, therefore, cannot be "twice the strength" of the B.P.C. syrup.

Glasgow, March 4, 1899. Thomas Dunlop.

The Poison Regulations.

Sir,—The turning of special attention to the "keeping, storing, and dispensing" of poisons will doubtless effect a great security against the risk of pouring from the wrong bottle by mistake. It would seem desirable, however, to institute a sort of "intermediate" cupboard for storing some of the milder poisons which may be required several times a day, *e g.*, paregoric, which, being a preparation containing a scheduled poison, of course requires to be kept under the conditions set forth in the new regulations, but if it is to find a home in a common poison cupboard I think a greater risk will be substituted for a lesser one. The danger of supplying paregoric instead of tincture of gentian when both are kept on an open shelf is nothing compared with the danger involved in mistaking tinct. of aconite for paregoric when both are kept in the same poison cupboard. Of course, a thoughtful chemist will guard against such a mistake either by using two or more cupboards, or else by adopting alternative "B" for milder poisons and "C" for the stronger, but I am writing on the assumption that as individual discretion and care have not been sufficient under the go-as-you-please system, so they may not be reliable in carrying out the directions of the new rules as at present laid down. I take it that it will only be compulsory to adopt any one of the prescribed methods for all scheduled poisons, and the class of chemist who, by carelessness, has rendered the new measure necessary is just the sort of man who will rest satisfied when he has obeyed the letter of the law. Consequently the risk I have alluded to will be a very real one.

Marlow, March 4, 1899. Walter Duplock.

*** It is compulsory to adopt one of the prescribed methods for keeping each scheduled poison, but not necessarily the same method for all poisons. In our opinion tincture of aconite, prussic acid, strychnine, and other strong poisons, such as are mentioned in Part I. of the Schedule, should be kept in a special poison cupboard, but it seems absurd to treat compound tincture of camphor, syrup of poppies, or even tincture of opium in the same manner. The less toxic preparations should, preferably, be kept in fluted or other distinctively-shaped bottles on the open shelves of the pharmacy, and not all grouped together as is sometimes the case. To secure uniformity of procedure, it seems desirable that meetings of the trade should be called at the various centres to discuss the matter. [Ed. *P J.*]

The Suggestions for a Draft Pharmacy Bill.

Sir,—Like most chemists, I suppose, I have read with great interest the arguments of your various correspondents against company pharmacy, but I would ask, Are they prepared to carry them to their logical conclusion—viz., one pharmacist one phar-

macy—and abolish branches? In the last paragraph of Mr. Gill's letter in your issue of February 11, "he puts his finger on the spot and says thou ailest here and here," and if the "*Dii majores*" had foreseen the present drift of things, they would no doubt have taken measures to forestall the consequences we now lament, but *nemo mortalium omnibus horis sapit.*

London, March 3, 1899. C. P. (174/6).

Sir,—There ought to be very few, if any, grumblers at the scope of the suggestions for a draft Pharmacy Bill. It certainly embraces the main features of our demands, and seeks to remedy at least some of the greater injustices under which we suffer. That it is not a perfect measure goes without saying, but this is very difficult to attain in the present divided state of chemists' opinion. Clause 1 is comprehensive and not one whit too strict, neither is it unjust to the stores, and I much regret to see that Mr. A. C. Abraham, at the Liverpool Chemists' Association, should deem it necessary to suggest that it may be advisable to give a period of grace (fifteen years he mentions) to the stores or limited companies. I see no reason for giving them any such period. They have known from the first that it was only a flaw in the original Act which allowed them to trade at all, and have only themselves to thank if they drop any money by a change in the law. From the passing of the Act to the end of the year is ample time, I think. Clause 2, in my judgment, does not go beyond what we ought to strive for. I hear it said that it is drawn too loosely, and also that it demands too much; but surely it is best for the public that those who have had special training in the manufacture and testing of drugs and preparations, and who have spent a lifetime in acquiring special knowledge, should have the exclusive right to sell and dispense such medicines and drugs. As regards the Widows' Clause (5) I see no injustice in this. In my opinion, it would be much better in the case of most widows that the business be disposed of as soon as possible. The Clause might be so altered, however, as to give the Pharmaceutical Council some discretion in the matter, placing it in their power to give a final notice for such business to be closed. One thing might also have been added to the Bill, namely, power for the Pharmaceutical Society to strike off the name of any registered chemist covering an unqualified company or person. This would have been a useful alternative where it was doubtful as to ownership, etc. I am sorry this has been omitted, but am thankful for what has been proposed. We shall have to work hard to get our honest due, but I am persuaded we shall not ask in vain if we ask with the voice of one man, and for this purpose we must be united into one solid phalanx. Let me exhort all registered men who are outside the Society's ranks to join at once, and thus bring a powerful and united force to bear upon our members of Parliament and the public generally, so as to educate their minds for this very desirable change.

Liverpool, March 8, 1899. Walter A. Grace.
Assistant Local Secretary.

ANSWERS TO QUERIES.

Visual Optics.—The first two articles by Mr. Laurance appeared in the numbers of the *Pharmaceutical Journal* for October 22 and December 31, 1898. [*Reply to* F. G. W.—24/26.]

Tested Ruby Glass.—This can be obtained from Mr. David Allan, 157, Whitfield Street, London, W. The address previously given was incorrect. [*Reply to* D. D.—174/9.]

Medicinal Plant Names.—We are glad to have been of assistance to you. The origin and meaning of the names you refer to may be expected later. [*Reply to* A. G. W.—173/42.]

Cloudy Solution of Ammonia.—Dissolve soft soap, 2, and pearlash, 1, in soft water, 60, then add strong solution of ammonia, 40 parts. [*Reply to* W. T.—24/25.]

Poison Regulations.—(1) Ferrocyanides and sulphocyanides are not poisons within the meaning of the Pharmacy Act, 1868; (2) the poison regulations are not bye-laws of the Society, but virtually an addition to Section 1 of the Act. [*Reply to* H. W. C.—174/20.]

Botanical.—M'Alpine's 'Life Histories of Plants,' seems to provide what you require. The "Students' Columns" must be reserved for information which is not generally to be found in text-books. [*Reply to* N. S.—24/20.]

Choice of Photographic Lenses.—We should strongly advise the Series VII.a Anastigmat. Combined they would be quite short enough for nearly all interior work, whilst the single lenses would do well for general landscape work. [*Reply to* N. S.—24/20.]

Composition of Horse Powder.—We cannot devote time to a detailed analysis of such mixtures as the sample of horse powder you send us. It appears to contain dried ferrous sulphate and liquorice root in powder, with a little cummin and some starchy powder, probably "diapente." [*Reply to* H. T.—24/11.]

Cucumber Paste for Emulsion.—Curd soap in fine shreds, 1; cucumber pomade, 3; water, 4; cucumber essence as above, 2. Dissolve the soap in the water; add the melted ointment gradually to it, then add the essence and triturate until cold. To convert into emulsion rub down gradually with sufficient warm rose water to produce 80. [*Reply to* C. T. J.—24/15.]

Colour in Mixture.—There is no obvious reason for the coloration you describe. We have made the prescription up with pure materials without observing any such colour. The cause is probably to be sought in the strontium bromide or the water used. If either of those were alkaline a purplish colour would result from their action upon the cochineal contained in the tincture of cardamoms. [*Reply to* L. J. M.—24/8.]

Botanical Atlas.—The best work of the kind is Oliver's 'Illustrations of the Principal Natural Orders of the Vegetable Kingdom' (London: Chapman and Hall, 193, Piccadilly. Price 26*s.*), with coloured plates. A less expensive book, with plain black and white illustrations, is Henslow's 'Floral Dissections, Illustrative of Typical Genera of the British Natural Orders' (London: E. Stanford, 55, Charing Cross. Price about 3*s.* 6*d.*). Both are in the Society's library. [*Reply to* E. W. M.—24/28.]

Eczema Ointment.—We cannot tell what may be the ingredients of the ointment made in the locality named. Coal tar or wood tar mixed with melted soap might be employed. As a general remedy ichthyol ointment is very useful, but eczema is protean in its forms, and each case requires to be treated according to its special requirements. That should be done by a qualified medical practitioner and not by a pharmacist. [*Reply to* A. H. M.—24/15.]

Cucumber and Glycerin from the Fresh Fruit.—Cucumber peel in fine shreds, 2; rectified spirit, 3; glycerin, 1. Macerate for seven days, strain, and press. For each 4 parts of this cucumber essence take curd soap, 1; cucumber pomade, 3; fresh cucumber juice, 10; rose water, to make 80. Dissolve the finely-cut curd soap in rose water, 4. Melt the pomade and add to the soap solution with constant stirring. Then gradually add warm rose water to make up to 76, and finally add the cucumber essence. Let stand for twelve hours and again mix by triturating for half an hour. [*Reply to* C. T. J.—24/15.]

Dyeing Yellow Leather Black.—First remove all grease by rubbing over with dilute ammonia solution, followed by hot water; then brush over two or three times with a strong solution of ferric acetate. When this has penetrated well into the leather, again brush it over with strong decoction of galls or oak bark. Another method would be to rub in a saturated solution of an aniline black soluble in oil or spirit. Probably you have only tried an aqueous solution of a dye which is not sufficiently penetrating for the purpose. You can procure suitable dyes from Messrs. Williams Bros., Hounslow, Middlesex. [*Reply to* J. S.—24/17.]

INFORMATION WANTED.

Siam Powder.—What is the composition of this powder? It is used, I believe, in some sausage manufacturing places as a flavouring agent, and is said to give excellent results. [E. B.—24/27.]

ROYAL COLLEGE OF SURGEONS IN IRELAND LIBRARY 16 MAR 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Fertilisation of Glaux maritima.

Edward Step read a paper at a meeting of the Linnean Society, on March 2, on the fertilisation of *Glaux maritima*. After examining some hundreds of flowers gathered along the coast near Portscatho, Cornwall, he had come to the conclusion that the flower is protogynous. When open, the calyx-lobes at first separate but slightly, affording only a narrow entrance. The curvature of the style is sufficient to bring it within the fold of a calyx-lobe, from which the stigma projects so as to be in the way of any insect that visits the flower for the liquid that exudes from the ovary and base of the style. When the yellow pollen is shed, the style is either quite erect, or retains its original bend sufficiently above the anthers to make self-fertilisation probable. Owing to the lowly habit of the plant and its customary crowding in with sea-sedge and grasses, it is not an easy one to watch. Doubtless it is often fertilised with its own pollen by the agency of flies and other insects; but from the position and precocity of the stigma, Mr. Step considered that cross-fertilisation is quite as frequent. He was consequently unable to agree with Mr. Henslow (*Trans. Linn. Soc.*, n.s. Bot. i. 1880, p. 377, pl. 44, fig. 35) as to self-fertilisation in this plant, believing his conclusion to have been drawn from the examination of an abnormal specimen.

Fungi of Ambergris.

M. H. Beauregard gives a detailed account of the fungi found in ambergris. Among the most frequent is one belonging to the Mucedineæ, a new polymorphous species, to which he gives the name *Sterigmatocystis ambari*. Among the Schizomycetes is also a new species of *Spirillum*, which he names *S. recti physeretis*, resembling *Bacterium coli commune*, but not displaying the indol reaction, nor the power of causing lactic fermentation. It liquefies gelatin, but only at the spot of inoculation. It is readily stained, but not by Gram's method.—*Ann. de Micrographie*, 1898, p. 241.

A Higher Homologue of Cocaine.

According to F. Günther, who returns to the subject of Maclagan's test for the purity of cocaine hydrochloride, specially purified cocaine, physiologically normal in its action, does not give Maclagan's reaction, whilst on the other hand the mother liquor obtained in the process of purification naturally less pure readily answers it. In explanation of this experience of the author it is now stated that he has succeeded in separating from the mother liquors of cocaine hydrochloride a base which gives Maclagan's reaction in a dilution of 1:2500, and its presence with cocaine causes a precipitation to ensue in a dilution of 1:1000. The base obtained from the mother liquors is easily purified by recrystallisation from petroleum ether. Its solubility in water is from 1:2500 to 1:3000, whilst cocaine is said to be 1:704. Pure cocaine hydrochloride, according to the author, dissolved in water in the proportion of 1:1000, corresponding for the base to 1:1100, cannot according to that solubility coefficient give a crystalline precipitate when Maclagan's test is applied. The less soluble base melts at 110-111° C., whilst cocaine melts at 97-98° C. On analysis it gave results agreeing with the formula $C_{18}H_{23}NO_4$. It yielded benzoic acid on hydrolysis and a distillate which gave the iodoform reaction. The only distinction that could be observed between it and ethyl-benzoyl-ecgonine, first synthesised by W. Merck in 1885, is the melting point, as the latter melts at 108°-109°. It is therefore regarded as an isomer of ethyl-benzoyl-ecgonine. Both bases give Maclagan's reaction. The new base has the same left-handed rotary power as cocaine, and the same physiological action. Cocaine and the new base crystallise out together from different solvents in fine prismatic crystals, having melting points ranging from 98°-110·5°, dependent on the amount present of the base melting at 111° C. In attempting to produce cocaine from the benzoyl-ecgonine obtained in the hydrolysis of the new base, the author obtained a base melting at 101°, which does not correspond with the melting point of cocaine, 97°-98° C. This result is ascribed to the presence of ethyl alcohol, which is said to be invariably present in commercial methyl alcohol, thus producing some ethyl-benzoyl-ecgonine as well as methyl-benzoyl-ecognine, or cocaine. Hence, the author infers, may be the explanation of the fact that commercial cocaine which has been prepared synthetically, answers Maclagan's test; that is to say, it may contain ethyl-benzoyl-ecgonine, or its isomer, bases less soluble in water than cocaine. The quantity of the base melting at 111° C. in crude cocaine is said to be considerable. The conclusion finally expressed by the author is that Maclagan's test is of no value as a criterion of the purity of cocaine hydrochloride; on the contrary, he states that when 0·10 Gm. of pure cocaine hydrochloride is dissolved in 85 C.c. of water and 0·2 C.c. ammonia solution added, the solution remains clear on standing.—*Ber. Deuts. Pharm. Ges.* [2], 9 38.

Penetration by Fungi.

Herr K. Lind has made some observations on this subject, which may be of some practical value in dentistry. He states that the penetration of fungi and of bacteria into rocks is largely due to chemical sensitiveness. If a thin plate of chalk, marble, or bone is moistened on one side only by a nutrient fluid, and the spores sown on the other side, the fungi will perforate the plate; while, if the spores are sown on the side which is moistened by the nutrient fluid, or if both sides are moistened, no perforation will take place. Many fungi also form considerable quantities of carbonic and oxalic acids, which have a powerful effect in corroding limestone. *Botrytis cinerea* displayed the greatest power of corrosion among the fungi used, *Penicillium glaucum* next, and lastly *Aspergillus niger*.—*Pringsheim's Jahrb.*, 32 (1898), p. 604.

Poisonous Principle of the Darnel.

M. P. Guérin has detected in the seeds of *Lolium temulentum* the constant presence of a fungus mycele, to which he attributes the production of the poisonous principle—temulin—which they contain. This principle was found in the outermost layers belonging to the nucellus beneath the integument. The hyphæ are abundantly septated. The systematic position of the fungus was not determined. It was found also in other species of *Lolium* which have a poisonous reputation, as *L. arvense* and *linicola*, but not in *L. italicum*.—*Morot's Journ. de Bot.*, 1893, p. 230.

Indigo Fermentation.

According to Professor H. Molisch the transformation of indican into indigo blue in *Indigofera* is not due in the first place to the action of bacteria; oxygen is indispensable to the process, whether it takes place within or without the dead cell. The process is accompanied by a number of different bacteria, and not by a single species only as previously stated; mould-fungi are also present. In some cases indican is formed only in the light; in other cases both in the light and in the dark, but always more abundantly in the light. The following species are added to the list of indigo plants:—*Echites religiosa*, *Wrightia antidysenterica*, *Crotolaria cunninghamii*, *C. turgida*, *C. incana*.—*Sitzber. k. Akad. Wiss. Wien*, July 7, 1898.

THE REGULATIONS FOR KEEPING, DISPENSING, AND SELLING POISONS.*

BY C. B. ALLEN.

No subject, perhaps, in the wide area of pharmaceutical politics has been so productive of heated controversy as that which waged fiercely round the attempts to enforce regulations in compliance with the requirement of the Pharmacy Act of 1868, but most fortunately, as I think, for ourselves by reason of the calm deliberations of this and kindred associations, and a more tolerant disposition upon the part of individuals in the body corporate, the question has at last been settled, and although there may still be differences of opinion as to the necessity for the actual incorporation, it will be best for us to unite in a loyal and straightforward attempt to carry out the regulations in the spirit of thorough adherence, and if in so doing we find, as we probably may do, that some alterations in detail appear necessary for the public safety, then I am sure that a majority of the members of the Pharmaceutical Society would be prepared to accept still further amendment.

It gives me more than ordinary pleasure to deal with this question, because it so happens that the very earliest interest I evinced in pharmaceutical politics induced me to write a letter to the *Pharmaceutical Journal* (probably about the year 1869) which attacked the Council of that day for their extreme stupidity in attempting to enforce regulations for the sale and storage of poisons, a view which I adhered to with more or less tenacity until my election to the Council fourteen years ago. Upon accepting office I commenced to study the earlier volumes of the *Pharmaceutical Journal*, in order that I might better understand the general policy of the Society as represented by its Council. In doing that, I found the points of greatest interest centred around the years preceding, and immediately following, the Act of 1868, and I became so impressed by the actual dicta of members of both Houses of Parliament in their desire to regulate the sale and storage of poisons, and so fully convinced of the sincerity of promises made on behalf of the Pharmaceutical Society to effect such regulations, that I have ever since that time regarded the non-fulfilment of those promises as the very gravest act of omission which could be laid to the charge of a Society commissioned by Act of Parliament, in the expediency of public safety, to conform to such regulations as to the keeping, dispensing and selling of poisons, as may from time to time be prescribed.

With this conviction I have usually endeavoured in the construction and fitting of my own pharmacy to make such arrangements as would conform most nearly to the requirements of the "Recommendations adopted at a general meeting of the Pharmaceutical Society on May 17, 1871," and that, doubtless, has also been the policy of many of my brethren in the craft; but now that we are face to face with the same clauses in the form of compulsory regulations it is evident to myself, as it must be to others, that a number of alterations remain to be effected before strict conformity can be attained. In some of the trade journals there have already appeared several ingenious methods and many interesting communications apropos of the regulations, but I do not propose to discuss a variety of ways by which the separate clauses may be carried into effect, as the brief time at our disposal renders it obviously impossible. All purely mechanical contrivances for attracting the attention of those who are called upon to handle poisons in the legitimate pursuit of their avocation must almost necessarily be distasteful, and there is no evidence in the regulations of a desire upon the part of those who framed them to substitute automatic mechanism in place of the educated intelligence of the trained hand. I would prefer to comment upon the clauses one by one and endeavour to make such suggestions as may seem best to secure practical conformity with the least possible addition to the responsibilities of the pharmacist in the conduct of his ordinary business duties.

* Read before the Western Chemists' Association (of London) on Wednesday, March 15, 1899.

Distinctive Marks on Packages.

Clause 1 enacts: "That in the keeping of poisons each bottle, vessel, box, or package containing a poison be labelled with the name of the article, and also with some distinctive mark, indicating that it contains poison."

The chief difficulty in the interpretation of this clause is to ensure a proper comprehension of every article affected by it. The list of poisons within the meaning of the Act as they appear in the two schedules naturally requires first consideration, and every bottle, package, or box containing any one of them must be labelled with the name of the article, and also with some distinctive mark indicating that it contains poison. This enactment, you will notice, is quite independent of any other contained in subsequent clauses, and is essential to the first performance of duty. The name of the article is naturally on the bottle, vessel, box or package containing it. The distinctive mark is most easily attained by the affixture of an ordinary poison label, or by eccentric shaped labels, which are sold by medical printers for the purpose; it may in fact be any distinctive mark which the registered individual adopts for that particular purpose.

In addition to what I may term the major articles defined in the schedules a very large number of special preparations, proprietary medicines, and packed goods come into the same regulation. Without specifying any one, you may, I think, readily differentiate them for yourselves by remembering that the articles deemed to contain poison within the meaning of the Pharmacy Act, and which may only be sold by the hand of a registered person, are those which come under this regulation. In other words, the powers of the Pharmacy Act have been increased to the extent of defining the conditions under which these articles may be sold and stored. With reference to the names of these articles, there is no practical difficulty, but the distinctive mark to indicate that they contain poison affects a number of interests other than those of the registered retailer. Whether the word "poison" in minute characters, occurring as a portion of the text upon a wrapper, constitutes a distinctive mark or not, no discussion upon our part can decide, but seeing that public safety is largely concerned in acquiring correct information as to scheduled poisons, which form ingredients of compounds sold under innocent names, it must occur to the registered seller, who is the sole legal distributor of this class of goods, that he is now charged with the duty of providing that every sale of an article containing a scheduled poison is made under conditions which shall render the presence of poison immediately apparent to the purchaser, and in the sales of packages, coming within this Clause, it is clear that he has authority to affix a distinctive mark if, in his judgment, it seems necessary to do so.

Methods of Keeping Poisons.

Clause 2 refers to the conditions under which poisons are to be stored, either for handling in the practice of our vocation or as articles of stock in our warehouses. It is divided into three subsections, no doubt with a view to easy conformity, it being lawful to store a poison under the conditions indicated by any one of the sub-sections *a*, *b*, or *c*, or under a combined system of arrangements embracing any two or all three of them. Whilst it secures certain conditions it is sufficiently elastic, and but little difficulty should be experienced in dealing with it.

Clause 2 enacts: "Also that in the keeping of poisons, each poison be kept on one or other of the following systems, viz.:—

(*a*) In a bottle or vessel tied over, capped, locked, or otherwise secured in a manner different from that in which bottles or vessels containing ordinary articles are secured in the same warehouse, shop, or dispensary; or

(*b*) In a bottle or vessel rendered distinguishable by touch from the bottles or vessels in which ordinary articles are kept in the same warehouse, shop, or dispensary; or

(*c*) In a bottle, vessel, box, or package kept in a room or cupboard set apart for dangerous articles.

Section (*a*) could almost pass without comment. It admits of no ambiguity and is extremely simple in its practical application, except, perhaps, in dealing with heavy stock stored in the warehouse, to which I will refer later; for stock bottles and pots resting upon fixtures it is probably the section with which most pharmacists will elect to comply. Many contrivances for locking and capping bottles have been introduced from time to time, most of them being more complicated than necessity dictates. The practical man will prefer an ordinary cap either tied or secured by an indiarubber band in the usual way. I have reason to believe that large caps in suitable sizes will be manufactured from tough manila paper, which can be used to secure any stock bottles from a pottle to a pint. It must not be forgotten that in addition to this precaution there must be the distinctive mark indicating that the vessel contains poison.

Section (*b*) is an alternative scheme which will have many points in its favour to recommend adoption by busy men. Bottles or vessels can obviously be made distinguishable by touch in many ways, whilst some excellent stock bottles, thoroughly complying with this regulation, which are no doubt familiar to every registered chemist, have been in the market for very many years. If poisonous stock is held in this form, the necessity for tying over is dispensed with, so that if they are frequently handled there is an appreciable gain in the saving of time. At the risk of repeating myself, let me remind you again that vessels distinguishable by touch also require the distinctive mark.

Section (*c*) will almost have the effect of making the "poison cupboard" an indispensable fitting to all establishments where a considerable amount of dispensing is carried on under pressure of ordinary business. For small stock bottles containing poisons which are in constant requisition during the work of compounding there is no location so convenient or so suitable as an accessible poison cupboard. If I am addressing any who have not yet given a practical trial to this mode of storage, I would remind them that many cases or lockers at present employed for other purposes could be rapidly converted into cupboards quite in accordance with this regulation. Those pharmacists who have a poison cupboard in actual use must also affix (if they have not already done so) the distinctive mark adopted by themselves to indicate that the bottles contain poison, as the enclosure without this mark does not fully comply with the regulation. Poisons contained in special preparations, proprietary medicines, and packed goods will also be set apart for storage in compartments reserved for those which come within the category of articles designated by this section.

The Dispensing and Sale of Poisons.

Clause 3 enacts, "That in the dispensing and selling of poisons all liniments, embrocations, and lotions containing poison be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles, and that there also be affixed to each such bottle (in addition to the name of the article and to any particular instructions for its use), a label giving notice that the contents of the bottle are not to be taken internally.

This clause only regulates sales of poison in the form of liniments, embrocations, and lotions, and in dealing with those certain rules are laid down, which are intended to lessen the risk of accident. No attempt has been made at the regulation of sales of poison in any other form, so that whilst it is legal to sell an ounce of laudanum in any ordinary bottle, but illegal to sell an ounce of laudanum and seven ounces of water, prescribed as a lotion, in any other manner than the regulation decrees, there is a certain amount of inconsistency apparent in this clause which, for the public safety, should be speedily amended.

In making these comments I have until now refrained from personal bias, and have endeavoured to indicate as clearly as I am able the full extent of the powers conferred upon the Pharmaceutical Society for the purpose of regulating the sale and storage of poisons. Whilst they add a serious responsibility to the duties of registered chemists, I am sure that if they are wisely dealt with there will be a corresponding increase in the confidence which the lay public will accord to those who undertake so much to secure their safety. In reviewing this question every individual within our ranks should try to regard it from an outsider's standpoint, and study the regulations by an intellect entirely incapable of understanding what a poison really means, and after that, as an expert in his craft, to lose no opportunity of promoting educational enlightenment to his own great advantage. In fulfilling the obligations of our Act, I, for one, see no difficulties which the exercise of a little practical ingenuity cannot overcome. It is true that I am, by virtue of practice, a "Londoner," and for that reason it will be assumed by some of my brethren in the country that I can know nothing about the special conditions of their trade, but whether the business be a "select dispensing," a "quick retail," or "mixed" in a large manufacturing district or quiet country town, I assert without hesitation that they may rapidly be brought into a line of conformity with these regulations. A little rearrangement in warehouses where, by-the-bye, there is usually much more room for stock than it is possible for us, as London residents, to acquire, will quickly separate the poisonous from the non-poisonous, whilst rough partitions erected in suitable spaces will form the stipulated "rooms" in which to keep the dangerous stock. Sheep dips, weed killers, veterinary preparations, etc., all admit of easy storage, whilst poisons in bulk, from a barrel downwards, can be tied over or rendered distinguishable by touch in an endless variety of ways. Although wholesale dealers in poisons are exempted from the responsibilities which attach to the retail seller, it is only reasonable to expect that in due course they will conform to the requirements of their customers, and deliver poisons in such a form as will comply with the regulations, and thus save a large amount of trouble in the transfer of stock. If this procedure becomes general, and I see no reason why it should not be expected, the difficulty of storage under the conditions specified will lose half the anticipated worry, and a greater degree of security will be experienced both by the wholesale dealer and the retail seller by reason of this practical conformity.

Regulations in Government Hospitals.

It may not be generally known that a select few of our fellow-craftsmen are subject to more stringent regulations than any which present themselves for discussion at the present moment. I allude to those dispensers who are in charge of stores at our military and naval hospitals. In visiting a naval hospital, I was able to see for myself the Government regulations carried into practical effect, and as the form of labelling may possibly influence

the distinctive mark which some amongst us may adopt, I will conclude my subject by a brief *résumé* of the principal regulations in naval hospitals generally.

In the storehouse, corresponding to our warehouse, all poisons are kept in separate cupboards, in bottles of blue glass, with yellow poison labels. Non-poisonous articles are kept on shelves, in white or pale green bottles, with green labels.

In the dispensary all poisons are kept in cupboards in square dark blue bottles, or in blue jars with yellow poison labels. Non-poisons on fixtures in round white glass bottles, or white jars with green labels. In medicine chests sent out to ships all bottles are treated in the same way as to labelling and colour of bottle, *i.e.*, blue with yellow label for poison, and white with green label for non-poisons, but for medicine chests all bottles must be square, so as to fit the spaces provided.

In sending out poisons to wards, which practically corresponds with our selling, dark blue, ribbed, hexagonal bottles must be used with the word poison moulded in the glass on one face of the bottle. Non-poisons are sent to wards in white rounds, all poisons being labelled yellow, and non-poisons green. It will therefore be useful to note that the Government danger signal is yellow, whilst green denotes safety, and although those regulations have no bearing upon pharmaceutical practice, they are possibly sufficient to make a pharmacist hesitate before he adopts a green-coloured label as a distinctive mark for poisonous articles.

KAOLIN.

BY WILLIAM JOHNSTON.

Now that this substance has become official in the British Pharmacopœia, a little information as to its origin and cognate uses will doubtless be appreciated by student readers. I do not mean those only who are preparing for examinations, but those also who are life-long students, with a perennial thirst for information. It will already be common knowledge to most that kaolin is a native silicate of aluminium. Its name is derived from Kau-Ling (high ridge), the mountain in China where it was first obtained, and where, I believe, it is still worked. It is also known as China clay, porcelain clay, and Cornish clay—the last indicating one of the world's principal sources of supply at the present time. The purest variety, which occurs in minute, six-sided scales, and has the composition, $Al_2O_3\ 2SiO_2,\ 2H_2O$, is called "kaolinite." It is not likely that this could be supplied on the commercial scale.

Whilst waiting for a train, I recently had the pleasure of visiting one of the Cornish quarries at St. Austell. There is a series of them in a beautiful glen—some of them of immense size, and employing a large number of hands. Several thousands of men and boys are employed in the industry in the St. Austell district. At one of the works the annual output of dry kaolin is no less than 50,000 tons, and I am told that several others come almost up to this figure. The bulk of it is shipped from Charlestown, Pentewan, Par, and Fowey, and some is sent by rail.

Before describing the method of "winning" the clay, it will clear the way if the

Natural Origin

of the substance be first dealt with. Broadly speaking, it is derived from decomposed granite. There is, however, some difference of opinion on the subject, certain geologists, etc., asserting that the granite has, more probably, never been properly formed. Granite consists of three main conglomerated constituents, quartz, mica, and felspar. It is the last which is the important one from the China clay point of view, as it is that which decomposes into the clay in question. The kind of granite (called "pegmatite") which is most prone to "kaolinise" contains a larger proportion of felspar, and that of a more reducible nature than most granites. This felspar consists of aluminium silicate, with small and varying proportions of lime, iron, potash, and soda silicates; and the fact that felspar from pegmatite contains a higher percentage of the alkaline silicates than other felspars may possibly account for its greater reducibility. The cause of the decomposition (called "weathering") which takes place under the soil and extends to a depth of sometimes as much as 100 feet, is surrounded by mystery. The same granite, exposed to air, is practically indestructible for ages. Professor Prestwich is of opinion that carbonic acid in surface water is the cause. He suggests that the CO_2 attacks the alkaline silicates, forming soluble carbonates, which are then gradually washed out of the felspar, leaving it in a friable condition. The aluminium silicate is not thus acted on, and so it remains stored up waiting for the quarryman. How many thousand years it takes to "weather" a hundred feet down into the hard rock, I cannot say; but, at all events, the practicability of such a thing seems to show that the phrase "everlasting hills" is, after all, only an exercise of the poet's licence. The "weathered" rock, which occurs in areas called "stopes," is of a greyish white colour and usually soft enough to crumble in the hand. In this condition it is known as China stone or Cornish stone.

The Method of Quarrying

the material is something like this:—A small proportion of the China stone is dug out and forwarded to the potteries for a purpose which will be referred to in a subsequent paragraph, but the bulk of the rock is "washed," that is to say, a stream of water is directed against it, *in situ*, by means of conduits, etc. The water, falling from a height and assisted sometimes by the quarryman's pick, gradually disintegrates the China stone, carrying the kaolin, in suspension, to a lower level of the quarry. Thence it is pumped up into settling-ponds, passing *en route* over a series of wooden obstacles which assist in grading the kaolin into different degrees of fineness and purity. The finest is allowed to settle in the ponds, which vary in depth from 6 to 12 feet or more. The water is then allowed to run out, and the semi-fluid clay is transferred, partly by manual labour, partly by gravitation, to drying sheds, furnished with brick floors, underneath which good fires are kept burning. When quite dry, the clay is ready for market, some of it being packed in casks, but most despatched loose, in lumps as white as snow.

The present *f.o.b.* price for best, dry China clay is about 24*s.* per ton. A medium quality fetches about 16*s.*, and the mica or common variety about 11*s.* A royalty of from 1*s.* to 4*s.* per ton has to be paid to the landlords in whose property the quarries are situated, whilst a further rent-charge of so much per acre is made for space covered by the *débris* from the quarries. The latter item must be getting a considerable sum, as enormous mounds have accumulated near all the workings. These hills of *débris* consist mostly of quartz fragments, about the size of peas, which have to be drawn up to the top in small waggons by stationary engines. If they were located near London or other large towns small fortunes could be made from them by disposing of the quartz for concrete, garden walks, etc. Considerable care and ingenuity have to be exercised, especially in wet weather, to keep earthy detritus out of the washings, and the temper of the lessees is sorely tried at times by landslips of surface soil. I was much struck with the pumps used. Some are driven by steam power, but most of them by enormous water-wheels, which are situated sometimes as much as a quarter of a mile from the pump. A rotating arm on the wheel moves a long iron rod, laid horizontally

on greased rollers placed at intervals, and this rod in turn actuates the lever of the pump, the pull-stroke being assisted by the weight of a movable box of stones ingeniously placed behind the water-wheel. Enormous quantities of good white clay seem to me to be wasted. On the day I was there, the small stream running down the valley below the quarries was almost as white as milk. Some of this escaped clay is trapped lower down (by dam-dykes and side conduits), and sold as second quality, but a much larger proportion gets away and is lost.

The Uses of Kaolin

are many. Probably the least important of them is the manufacture of phosphorus pills, as directed by the new B.P., and the most important the manufacture of pottery. I used to be under the impression that kaolin was used in the making of only the fine kind of crockery, called porcelain. That is a mistake; it enters largely into the composition of all our white dishes, or "pots," as they are still called in the Midlands. It will not be necessary for me to delve deeply into the mysteries of the ceramic craft, but a sketch like this would be incomplete without just a few outlines of the potter at work. In the first place, it will be news to many to hear that kaolin alone is incapable of forming serviceable vessels. When made plastic with water it will harden in the kiln, but the cup or what-not will possess no toughness. The reason is that kaolin is infusible at even the highest temperature of the porcelain furnace, and requires some fusible addition, such as flint or felspar, to give it cohesiveness. The China stone, reduced to fine powder, is sometimes used for this purpose. The chief differences between porcelain and ordinary white earthenware appear to be due more to difference in the proportions of the ingredients and the methods of their manipulation than to any extensive difference in the ingredients themselves. The following paragraphs from one of the text-books is of interest:—"Sevres porcelain is composed of washed kaolin about 70, felspar 20, flint 10, and chalk 5 parts. When these have been reduced to very fine powder they are mixed and made into a paste with water. This is set aside for many months in a damp cellar to ripen, and afterwards trodden smooth by a bare-footed workman. A good workman at Sevres can make only fifteen to twenty plates a day, because this beautiful clay needs great care in handling; hence the costliness of porcelain. In the same time an English potter and two boys can turn out 1000 to 1200 ordinary plates." Before leaving the subject of pottery it should be noted that the kaolin-flint combination described above does not produce the finished cup or plate; it forms the "biscuit," as it is called, which has afterwards to be glazed—with fused felspar or other material. Kaolin enters into the composition of the ever-useful Wedgwood ware and of crucibles; and I fancy it is to kaolin that the whiteness of opal glass is due. It is employed in immense quantities for whitening and sizing or loading paper and calico; also for making "alum cake"—a plain aluminium sulphate, much used in dyeing. I believe a good deal of the metallic aluminium is made from kaolin. It is also employed in making white paint, for use in situations where lead paint is contra-indicated—where, for example, a paint is required that does not blacken, and is not affected by heat. Probably one-third of the total output of kaolin is used in pottery, and the other two-thirds for the purposes just enumerated, as well as several others not named. The following extract from Martindale's 'Extra Pharmacopœia' will give an idea of its medical uses:—"Prepared kaolin is a pearly-white powder, unctuous to the touch and free from grittiness." [This is the twenty-four shilling article.] "It forms a useful absorbent powder to apply to infants and to irritated skin. A perfumed preparation, with similar chemical and physical properties, is sold under the name of 'Cimolite.' Kaolin is unacted on by most substances, and is therefore suitable for diluting nitrate of silver and potassium permanganate before forming into pills or powders." As a pill excipient, the same author recommends it to be mixed with twice its weight of hardened vaseline.

Amongst more or less closely

Allied Substances

may be mentioned Fullers' earth (which is also a native aluminium silicate, with a little iron), talc and French chalk—which are chiefly silicates of magnesium, and which are also used as absorbents. Talc is also used as a filtering medium, and is said to be superior to either kaolin or French chalk for that purpose. Pipe clay, found at Poole (Dorset) and elsewhere, is another nearly related body. It contains more silica and less lime, iron and magnesia than China clay, and is largely used, without addition, for making tobacco pipes.

I have to express my indebtedness to the officials of the Lower Lansalson China Clay Co. for many of the statistics and much of the information contained in this paper.

I would recommend any brother pharmacists attending the Autumn Conference at Plymouth, who may be thinking of visiting Penzance and the Land's End, to break their journey at St. Austell and have a look at the quarries. I have little doubt they will be as courteously received as I was, and be as greatly pleased.

NOTE ON LINIMENTUM TEREBINTHINÆ.

BY F. H. ALCOCK AND E. WITHERS.

This liniment has always been a great trouble to pharmacists, and much has been written upon the subject, especially after the appearance of the 1885 B.P.

That formula was shown to be a mistake in that there was a doubt as to whether the product should be fluid, semi-fluid, a jelly, or even a solid. This difficulty was overcome by the practical pharmacist by adding double the quantity of water then prescribed, the result being a thick, cream-like, easily pourable liquid.

The present and past formulæ are compared in the table below:—

	1867.	1885.	1885 Improved.	1898.
Soft soap	2 ozs.	2 ozs.	2 ozs.	1½ oz.
Camphor	1 oz.	1 oz.	1 oz.	1 oz.
Oil of turpentine	16 fl. ozs.	16 fl. ozs.	16 fl. ozs.	13 fl. ozs.
Distilled water	None	2 fl. ozs.	4 fl. ozs.	5 fl. ozs.

It will thus be seen that the present formula has less soft soap, less oil of turpentine, and more water.

The formula for the preparation in the 1864 B.P. is: Oil of turpentine, 5 fl. oz., added to molten ointment of resin, 8 ozs.; and mixed *secundum artem* "until a uniform liniment is obtained" (Dublin formula).

The preparation of the present official liniment is still a matter of difficulty, no doubt because on the principle of *tot homines, tot sententiæ* the word "gradually" is variously construed.

We have seen pharmacists who have not been able to make it under an hour or more, and then the preparation was not the right colour, and separation of some of the water took place to the extent of a layer of about one-twentieth of the whole volume.

If the following *modus operandi* be adopted there will be no difficulty in producing it in much less time and with not so much labour, with a more satisfactory result, no separation taking place even after several days.

Dissolve the camphor, previously cut into small pieces, in the oil or turpentine contained in a bottle sufficiently large to allow

of its being shaken, add the soap and shake vigorously until uniformity is obtained, that is, until the soap is thoroughly diffused throughout the liquid and no lumps are visible, this occupying five minutes; then add the whole of the water, shake vigorously and repeat this treatment occasionally at intervals.

The product is ready for use at the end of forty-five minutes or even less.

We should like to call attention to the question of composition of soft soap. The B.P. does not say how much water should be present nor how much alkali. It is a pity that a formula was not given by which the pharmacist could prepare the right soap for the purpose. We find it an easy matter, and have on many occasions prepared it, using the ingredients in the proportions indicated by the usual chemical equation.

Much information on this particular subject may be obtained from a paper by Mr. Dechan (*P. J.*, April 25, 1885), which has apparently been overlooked so far as moisture and total alkali are concerned.

PHARMACEUTICAL SOCIETY.

EVENING MEETING IN LONDON.

On Tuesday last, March 14, an ordinary evening meeting of the Society was held at 17, Bloomsbury Square, W.C., the President, Mr. Walter Hills, in the chair.

The untoward atmospheric conditions, coupled with the prevalence of various forms of illness, were no doubt largely accountable for the unusual number of empty benches at the back of the lecture theatre. Nevertheless, those who did attend, the major part of whom were present students in the Society's School, were well paid for their trouble, and unstintedly showed their appreciation of the lecture, which was delivered by Professor J. Reynolds Green, Sc.D., F.R.S., on

Adverse Conditions, and their Remedies, in the Life of Plants.

The President, on rising, remarked that it was unnecessary for him to formally introduce Professor Reynolds Green to a Bloomsbury Square audience. He was sure that all would be glad to see the Professor back again after an attack of the prevailing epidemic, which had prevented him from giving the promised lecture four weeks previously. The President hoped that the audience would accord Professor Green a hearty welcome, and listen with pleasure to what he had to say.

The audience was not slow to take the hint, and it was some minutes before the applause subsided sufficiently for the Professor to make himself heard. He began by expressing intense gratification at receiving so cordial a greeting, adding some words of thanks to Professor Collie, who had so promptly come forward a month ago, with a lecture on the Canadian mountain exploration. At no time perhaps is Professor Green more happy in his remarks than when he lays aside the discipline inseparable from the class-room. On this occasion he jocularly remarked that the audience appeared disposed to be appreciative, and though stern duty at other times prompted him to frown upon such expressions of approval he would for once rejoice in similar demonstrations.

Passing to the subject in hand the lecturer said that the phrases "struggle for existence," "survival of the fittest," and others of a like nature are not easily understood by those who take a casual glance at the book of nature. Two slides were shown to illustrate the strange deceptiveness of nature. In the first an apparently peaceful forest in Java revealed on closer inspection the signs of conflict and struggle, for while one tree was crowding out and starving its dwarfed neighbours, it was in its turn being preyed upon by the parasite Rafflesia. The next picture, a placid pool, surrounded by herbage and trees, depicted the warfare that plants wage against animal life, groups of *Sarracenia purpurea*, the pitcher plant, struggling for existence, by acting as traps for insects.

In order to enable his audience to look beneath the surface and see the conflict that is going on, either with other organisms or against the natural environment, Professor Green briefly alluded to the normal conditions of plant life, and the common difficulties that await plants. A plant, whether herb or tree, is localised, *i.e.*, it is denied the power of free movement, and so, in a semi-passive way, it meets with various conditions, adverse or otherwise. It has a definite structure, consisting partly of dead and partly of living cells. The latter are found at the extremities of the plant body, and intercourse between them and the atmosphere is maintained along certain channels. Chemical interchange must take place on the spot, food materials must be brought up and waste products removed. The plant is therefore to a large extent a placid and plastic structure.

The activity of a plant involves certain needs, which were next considered. By means of a sketch of the leaf *Elodea* it was shown that water is the great communicative medium of the plant from cell to cell. A definite mechanism is required for breathing purposes to enable gaseous interchange to take place, and this is supplemented in leaves, roots, and other organs, by an extensive intercellular space-system, containing air and watery vapour. Again, some provision must be made for the transport of water from one part of the plant to another. Water-plants can absorb water directly by their surface, but land plants must obtain it *vid* the root-hairs and roots, along the vascular strands of which it proceeds to the smallest branches of the vascular system, *i.e.*, the veins of the foliar structures. In order to show up the vascular strands in the floral leaves several kinds of white flowers were placed in water containing eosin, and so were stained red along the course taken by the veins. Remarkably pretty effects were obtained in this way, and specimens were exhibited of jonquils, cyclamens, azaleas, tulips, and hyacinths that had been so treated. It is important that the protoplasm should be furnished with food, which is derived partly from the atmosphere in the form of carbon dioxide and partly from the soil by way of the roots. The carbon dioxide is elaborated to form carbohydrate, and this cannot be done without the aid of light. A certain degree of illumination is therefore essential to the plant. When a beam of light is examined by means of a spectroscope, as it emerges from a solution of chlorophyll, certain gaps are noticed which break the continuity of the spectrum. The chlorophyll takes out certain rays of light which supply the energy that the plant requires in order to build up new material.

Having thus briefly reviewed the primal necessities of a normal plant, the lecturer went on to explain how certain plants overcome the peculiar difficulties to which they may be exposed. As examples of plants growing under

Adverse Climatic Conditions,

certain moorland types were described. Moorland is so plentiful in this country that it has been said that it is possible to walk from Ilkley in Yorkshire to Glasgow without stepping off the heather. In such bleak situations, devoid of shelter and of trees, only those plants grow that can withstand extremes of cold and heat, of dryness and damp. The water is so pure, so free from mineral salts, that the nutrition of plants suffers accordingly.

The ling is particularly successful in coping with these difficul-

ties by developing a marked individuality. It puts forth low, wiry, straggling stems, and possesses deep-seated roots. The special character about its leaves is that they are dry, hard, and evergreen, last for two or three years, and then crumble, but do not fall. Large intercellular spaces are formed; the stomata are deep-seated and protected by hairs. By these means the ling secures many advantages: the deep roots cover a lot of ground, while the hard, tough leaves serve to guard the plant from drought, being helped by the protected stomata, which prevent excessive transpiration. Furthermore, the leaves being evergreen, the power of feeding is held in reserve, so that the plant can take advantage of the short snatches of fine weather that occur even in the winter months. Moreover, the chlorophyll-containing cells being arranged all round the central respiratory cavity, or air-space, the plant is provided with every conceivable adaptation for availing itself even of transient gleams of sunshine all the year round. *Erica*, another moorland plant, possesses rolled leaves, thus exposing a small leaf-surface, with hairs on the under surface and protected stomata. Plants so exposed to biting winds economise shelter and reduce leaf-surface and the above-ground part to a minimum.

Another kind of difficulty with which plants have to contend is the

Crowding of Leaves,

which makes it hard to obtain an equal illumination. Since a considerable amount of energy and much food material are used up in producing leaves the plant requires to limit their number, whilst, on the other hand, it is advantageous for the plant to receive a maximum of illumination, which entails a corresponding multiplication of leaf-surface. To avoid over-lapping a modification takes place in the length of the leaf-stalks. For example, *Geranium pyrenaicum*, a plant growing on waysides and in meadows, has a small axis, and lies almost flat on the ground. The enormous number of its leaves renders the problem of packing no easy task, but it is performed by a co ordination of the leaf-stalks, the oldest being the longest, forming loose rosettes. Thus no shading results, while all the leaves are well illuminated and in one plane. *Campanula pusilla*, growing on the steep slopes of sub-alpine regions, has a similar mechanism. The flower-stalk, rising vertically, bears small narrow leaves, which point upwards at a sharp angle, and so do not shade the rosettes below, while they obtain an equal illumination for themselves. By a co-ordination of leaf-stalk and blade the stalk alone is in shadow, and that does not matter. This co-ordination of the length of the stalks, the lower being six or eight times the length of the higher, is well seen in *Amarantus*, *Datura*, and *Impatiens*. The stems of these plants are elongated, and viewed from above the whole plant looks like a rosette. In *Datura* the small leaves are developed between the larger ones, thereby effecting an economy of space.

Passing to trees, it was shown how a similar mode of behaviour obtains. The terminal erect branch of *Acer platanoides*, the Norway maple, shows decussating leaves, *i.e.*, pairs of leaves successively placed at right angles, that do not shade each other. The lower stalks having the advantage in length, form a sort of pyramid, while the stalks of each pair are equal in length. On the lateral (horizontal) branch it is seen that the stalks of each pair are unequal in length, one being sometimes three times as long as the other; thus the branch exhibits an almost perfect adaptation to a vertical source of light. Other mechanisms than co-ordination may give a similar result, *e g.*, by

A Twisting of the Internodes,

as may be noticed in *Helianthemum*, *Diervilla*, the hazels and beeches and other plants. In *Helianthemum*, the rock-rose, the stem being low and flat, some of the leaves twist through ninety degrees, so that two rows are produced instead of four. In certain cases the petiole twists in order to bring about a similar result. A further method of gaining a maximum amount of illumination is found, *e.g.*, in *Bryonia* and *Ficus*, mosaics being formed by the

Economical Arrangement of Unsymmetrical Leaves,

which appear to be packed into each other. An economy of space is thus effected by utilisation of the irregular shapes of leaves. *Atropa belladonna* furnishes a good example of plants whose adjoining leaves are unequal in size. The larger leaves are in two rows, and the gaps left between them are filled by small leaves, which twist themselves until they come to lie in the gaps, forming a mosaic pattern. *Ulmus* is an example of trees that show the same behaviour, in taking advantage of the unsymmetrical form of the leaves.

Besides difficulties arising from adverse climatic conditions and those connected with the attainment of a maximum degree of illumination with a minimum expenditure of leaf surface,

Plants often have Trouble in Obtaining Water.

The absorption of water is a serious problem in the case of epiphytes, *e.g.*, certain orchids. The flattened strap-shaped roots which anchor the plant to the surface of a tree do not derive enough water from the crannies in the bark to supply the needs of the plant. The air in tropical forests—the home of epiphytes—being humid, long roots hang down to absorb moisture by means of a glistening spongy coating of cells known as a velamen. These plants in this way may obtain from eight to thirteen per cent. of their weight of water, and once obtained it is not readily parted with.

Terrestrial plants sometimes have peculiar ways of dealing with the problem of water supply. The normal course is for the root-hairs to come into intimate contact with the soil and absorb from it a film of water. When this source is inadequate abnormal means are adopted. Thus *Stellaria media*, the common chickweed, has a ridge of fine delicate hairs running from node to node. These hairs catch and absorb water when a shower falls by means of an appropriate mechanism. The common ash has a grooved rachis, strengthened at the sides, the groove being curved at the edges, forming a channel which gapes open when the leaves are exposed on the rachis. Absorbing hairs and glands are found along the groove, and these act as a subservient mechanism for utilising showers, by the collection and retention of rain. The leaves of the aspen, *Populus tremula*, possess cups with an absorbing surface; the fibro-vascular bundles almost reach the absorbing surface, and so in a shower the plant is well supplied with water. A kind of varnish is then secreted, which swells and so retains the water.

One of the most ingenious mechanisms for procuring water is possessed by certain species of *Saxifraga*. A depression in the thick and succulent leaf absorbs and holds water; there are prominences (plugs) and water glands in the hollow, besides openings (water-stomata). Water charged with lime is poured out and forms a calcareous cake over the depression. In this way water is absorbed and passed to the gland beneath; this method is common in plants growing in deserts. The teasel has leaves with sheathing bases which act as funnels; delicate protoplasmic filaments are said to absorb water from these cups into the plant-body, but this is open to doubt. Insects are sometimes accidentally caught in these cups, and their capture serves as an additional advantage to the plant. Professor Green concluded by referring to the class of true

INSECTIVOROUS PLANTS.

Nitrogenous food material is their chief requirement. In the case of *Nepenthes*, the pitcher plant, the leaves are large, much modified, and secrete a digestive fluid; insects are attracted by the pretty colours, and alighting on the slippery rim they are entrapped. The leaves of *Drosera*, the sun-dew, are supplied with tentacles and a secretory apparatus for the capture and digestion of insects, as the plant lives on moss, *e g.*, sphagnum, which is not a good source of nitrogenous food. Drops of the viscid liquid glistening in the sun, from their resemblance to honey, attract insects; once caught they set up an irritation in their efforts to escape, and as a result the tentacles curve over, and pour the secretion upon the unfortunate prisoner.

At the conclusion of the lecture, the applause was for some minutes quite deafening. When it was over the PRESIDENT said that he was sure he expressed the views of all assembled when he offered the best thanks of the meeting to Professor Reynolds Green, for so interesting and instructive a lecture. It could not fail to render country rambles more attractive in the future, in endeavouring to trace out the phenomena of which Professor Green had been speaking. The President went on to say that he recollected that a difference between plants and animals was mentioned in the late Professor Bentley's manual, viz., that animals have the power of voluntary motion, whereas plants are not so endowed. He felt bound to say, when he looked at the empty benches, that had more pharmacists availed themselves of this power in the direction of Bloomsbury Square that evening, they would have derived considerable benefit and delight as a result of the effort. Many, no doubt, were detained by illness, fog, and other causes, but they had lost a great treat. If plants possessed a similar power, they probably would not long stay in London. There was much food for thought in the lecture, and the Society was much indebted to Professor Green for showing in so able a manner how plants overcome their peculiar difficulties. At the present time the pharmacist is confronted by many difficulties, and perhaps none feel it more than those about to undergo examination. The President concluded by wishing any students who might be present as much success in their examinations as attended the plants in their peculiar trials.

The vote of thanks having been formally proposed by the President, and carried by acclamation, Professor GREEN tendered his thanks for so hearty a reception, and said how cheered he was by the manifest appreciation of his remarks. It had been a great pleasure to him to be there.

The PRESIDENT then invited those present to partake of refreshment in the Examination Hall, and declared the meeting adjourned.

The following is a complete list of the slides that were shown by means of the lantern :—

LIST OF SLIDES EXHIBITED.

1. Tropical forest.
2. *Sarracenia* group.
3. Vacuole in plant-cell.
4. Intercellular spaces in a root.
5. Intercellular spaces in a leaf.
6. Course of fibro-vascular bundles in a plant.
7. Solar spectrum.
8. Solar spectrum with the spectrum of chorophyll superposed.
9. Chloroplastids in cells of *Elodea*.
10. Ling } Moorland plants.
11. *Erica* }
12. Leaf of *Geranium*.
13. Leaf of *Campanula*.
14. Leaf of *Amarantus*.
15. Leaf of *Acer platanoides*, erect.
16. Leaf of *Acer platanoides*, horizontal.
17. Leaf of *Helianthemum*, twisted.
18. Leaf of *Bryonia*.
19. Leaf of *Atropa belladonna*.
20. Leaf of *Ulmus*.

ABSORPTION MECHANISMS :—

21. *Orchis*.
22. Mechanism of root absorption. Root-hairs.
23. *Stellaria media*.
24. The Ash.
25. *Populus tremula*, the Aspen,
26. *Saxifraga*.
27. Teasel.

INSECTIVOROUS PLANTS.

28. *Nepenthes*.
29. *Drosera*.
30. *Dionæa*.

EVENING MEETING IN EDINBURGH.

The fifth evening meeting of the session was held in the Society's house, 36, York Place, Edinburgh, on Wednesday, March 15, Mr. W. L. CURRIE, Glasgow, in the chair. The minutes of the last meeting having been read and approved, apologies for absence were intimated from Mr. J. Laidlaw Ewing, who should have occupied the chair, but was prevented by influenza, and from Messrs. Davidson and Boa.

The first communication was by Mr. W. B. COWIE on

The Temperature at which Sodium Bicarbonate Decomposes.

He said: As the result of an inquiry recently made of me I was induced to give some attention to the question as to the temperature at which carbonic anhydride is given off on heating sodium bicarbonate. On referring to the usual authorities no specific information could be obtained. I therefore made some experiments which gave interesting results that seemed likely to be of practical utility to others. The first attempt to determine the temperature of liberation of carbonic anhydride was made in a Schrötter's apparatus fitted with a thermometer and connected with a U tube containing lime water. It was apparent that the column of sulphuric acid in the apparatus exerted a certain amount of pressure, and so retarded the liberation of carbonic anhydride, and thus vitiated the results. Several other expedients were tried, and ultimately it was found that the most satisfactory results were obtained by placing the sodium bicarbonate in a small retort furnished with a thermometer and heated by a sand bath. The retort was connected with a U tube, containing a sufficient quantity of saturated solution of barium hydrate to seal both limbs; the outer limb of this U tube was connected with a second U tube, containing sticks of sodium hydrate, so as to exclude atmospheric carbonic anhydride. The temperature in the retort was checked by a second thermometer, inserted in a test-tube placed in the sand bath beside the retort. Two well-known commercial brands of sodium carbonate were examined for (*a*) basic impurities; (*b*) acidic impurities; (*c*) percentage of carbonic anhydride by Schrötter's apparatus, and (*d*) alkalinity, by sulphuric acid and methyl orange

The absence of potassium, lithium, and other basic impurities was proved. There was a faint trace of sulphate in sample B. Sample A yielded 51·65 per cent. of carbonic anhydride when estimated by Schrötter's apparatus, and sample yielded 51·35 per cent. When ignited, sample A lost 36·92 per cent. and sample B 36·64 per cent. Estimated with standard sulphuric acid and methyl orange as indicator, 2·0229 Gm. of sample A came out 2·034, and 1·914 Gm. of sample B came out 1·924 Gm. A sample containing 98·05 per cent. of $NaHCO_3$ and 1·95 per cent. of Na_2CO_3 should lose on ignition 37·06 per cent.; sample A lost 36·92 per cent., and should yield a total of 52·128 per cent. of carbonic anhydride, sample A yielded 51·65. Allowing for a small percentage of moisture it may therefore be taken that the above indicates the constitution of sample A. A sample containing 97·2 per cent. of $NaHCO_3$ and 2·8 per cent. of Na_2CO_3 should lose on ignition 35·86 per cent., sample B lost

36·64 per cent., and should yield a total of 51·97 per cent. of carbonic anhydride, sample B yielded 51·35. Making a similar allowance for moisture as in the previous instance, it may be taken that the above represents the constitution of sample B. This is made clearer by the following table :—

		Found.	Calculated.
Sample A :—			
98·05 $NaHCO_3$	Loss on ignition	36·92	37 06
1·95 Na_2CO_3	Total CO_2	51·65	52·128
100 00			
Sample B :—			
97·2 $NaHCO_3$	Loss on ignition	36 64	35·86
2·8 N_2CO_3	Total CO_2	51·35	51 97
100·0			

Both samples are, therefore, of good quality, but sample A is the better of the two. This preliminary examination was made with a view to determine that the samples used were sufficiently pure to give satisfactory results.

The following are the results of three experiments with each of the samples A and B :—

Experiment.		A	B
1	Temperature at which CO_2 was liberated ..	54° C.	52° C.
2	Temperature at which CO_2 was liberated ..	55° C.	52° C.
3	Temperature at which CO_2 was liberated ..	55° C.	54° C.
	Mean.....	54°·6	52° 6

From these results it is apparent that pure sodium bicarbonate begins to decompose and give off carbonic anhydride when heated to a temperature of between 52°·6 C. and 54° 6 C., and it has been found that by the time the temperature rises gradually to 70° C. the bicarbonate is completely decomposed. The presence of moisture in sample B doubtless accounts for the slightly lower temperature at which decomposition begins.

While carrying out these experiments it was incidentally observed that phenol-phthalcin solution is a ready and delicate test for the detection of a carbonate in a bicarbonate. A freshly made saturated solution of a pure bicarbonate gives no colour but only a slight opalescence with a single drop of the reagent ; but the solution becomes pink immediately if the bicarbonate contains the slightest trace of carbonate. It was also observed that a 2 per cent. aqueous solution of sodium bicarbonate immediately decomposed when the temperature reached 20°C., while a saturated aqueous solution did not decompose until the temperature reached 30° C. Potassium bicarbonate was found to behave in a precisely similar manner. It is obvious therefore that infusions or other aqueous menstrua should always be cooled to 15° C. before adding to an alkaline bicarbonate.

Mr. Lunan said he was surprised to learn that sodium bicarbonate decomposed at so low a temperature as 54° C. He had been under the impression that it would not do so at a less temperature than 70° C. He would like to ask how much carbonic anhydride was given off at 50° C. It would not be possible, he thought, to get sufficient cohesion in a powder to form granules at 54° C. He thought there must be very little loss at 70° C., for Mr. Davidson and he found there was a total loss of only 9·7 per cent. Mr. Cowie's results indicated that the Pharmacopœia was at sea in fixing so high a temperature for granulating, and Mr. Dyer was also at sea as to the source from which loss of carbonic anhydride arose.

Mr. Duncan said he had seen a statement to the effect that sodium bicarbonate decomposed at 70° C., and he was surprised to learn that it did so at a much lower temperature. He thought that the temperature of decomposition depended a good deal on the moisture present in the sample. It was well known that a solution of sodium bicarbonate decomposed, and the practice of having a solution ready for dispensing purposes was objectionable. He could confirm the fact that phenol-phthalein was a good test for carbonate in bicarbonate.

Mr. McDiarmid asked if sodium bicarbonate did not decompose at the ordinary temperature. He had observed that when potassium bicarbonate was exposed, it became moist, although the Pharmacopœia said it should not be deliquescent.

Mr. J. Rutherford Hill said this was a distinct addition to chemical knowledge, for the point did not seem to have been investigated previously.

Mr. Cowie, in reply, said he believed all the carbonic anhydride would be driven off by continuous heating at 54° C., but he had not determined that point. He had an experiment in progress at the present moment and already about one-half of the carbonic anhydride in a sample of sodium bicarbonate had been driven off at about 60° C. In regard to Mr. McDiarmid's question he believed sodium bicarbonate would decompose at ordinary temperatures if it was moist. He found also that a dilute solution of sodium bicarbonate decomposed much more rapidly than a saturated solution.

The next communication was by Mr. Archibald Currie on

Pharmacists and Urine Analysis.

Mr. Currie said he had brought forward this subject because pharmacists seemed often to be deterred from taking up this branch of work from an assumption that it was attended by difficulties which made it impracticable for the ordinary retail pharmacist to perform the necessary operations with sufficient facility and dispatch. This was to be regretted because it furnished an excellent opportunity for cultivating that intimacy and intercourse between medical practitioners and pharmacists which was so eminently fitted to result in mutual benefit. He then gave a practical demonstration of the course of analysis which he had found the most simple and practically sufficient. He dealt more particularly with the volumetric process for the quantitative determination of sugar. He had found that Gerrard's modification of Fehling's test ('Year Book of Pharmacy,' 1892, page 400) was by far the best adapted for carrying out in the pharmacy. The process could be carried out in an open porcelain basin, the only points to be observed being a thoroughly boiling temperature and rapid titration. He had found that this process gave more constant results than any other process. He had tested the constancy of the results by making five consecutive determinations of a sample of diabetic urine, when the following readings were obtained :—

1. 6 5 C.c. of sample decolorised 10 C.c. of standard solution.
2. 6·5 ,, ,, ,, ,, ,, ,,
3. 6·4 ,, ,, ,, ,, ,, ,,
4. 6·3 ,, ,, ,, ,, ,, ,,
5. 6 3 ,, ,, ,, ,, ,, ,,
6. 6·3 ,, ,, ,, ,, ,, ,,

On determining a sample of normal urine to 100 C.c., of which 0 5 gramme of glucose had been added, it was found that 9·9 C.c. of the sample decolorised 10 C.c. of the standard solution. The process was, therefore, both constant and accurate. The sharpness of the end reaction gave it a distinct advantage over Fehling's method, and Pavy's method was impracticable in an ordinary pharmacy on account of the escape of ammonia fumes which it was difficult to avoid. The whole process of a urine analysis such as was required in ordinary medical practice could be easily completed in less than half an hour.

Mr. J. Rutherford Hill said one often heard of profitable extras in connection with pharmacy. Urine analysis was one of those. Even the general public were now learning that a urine analysis was a good index of the bodily health, and many had an analysis made periodically, for which a fee of five shillings was usually charged. No class of men were better qualified for such work than pharmacists, and Mr. Currie had shown them practically how easily it could be done.

Mr. Henry said one circumstance in Edinburgh which kept pharmacists from getting this work to do for doctors was that such work was done for them free at the research laboratory of the Royal College of Physicians. It was a department of work which he could commend to all pharmacists.

The Chairman said it was a common occurrence in the West of Scotland to be asked to do this work for doctors, and it not only brought the doctor, but also the patient, to the pharmacy.

Mr. Currie, in reply, said he hoped what he had said would be of benefit and induce others to take up this work.

The next communications were by Mr. J. Rutherford Hill.

Insoluble Pessaries of Ichthyol.

He said: The circumstances dealt with in this and the subsequent note were brought under my notice by one of our members, Mr. A. K. Stewart. Pessaries containing 15 p. c. of ichthyol are being pretty extensively prescribed at the present time. Several medical men have recently complained that they found them quite insoluble, or perhaps it would be more accurate to say infusible as well as insoluble. Complaint was made that such insoluble pessaries when used were objectionable, because they became harbours for septic matter. In every instance the samples complained of were found to have been made with gelatin basis. It is quite true that the manipulation of such a mass as a basis for ichthyol is comparatively easy, and the product is an elegant pessary. But the mass is tough and almost insoluble, the insolubility varying apparently in proportion to the heat employed in the process of preparation. The gelatin basis, therefore, is quite unsuitable for ichthyol pessaries. With 15 per cent. of ichthyol a perfectly satisfactory and readily soluble pessary may be made with oil of theobroma alone. Martindale recommends the addition of beeswax, but this tends to raise the melting point, and in practice has not been found to be necessary.

Linimentum Terebinthinæ.

This liniment has given rise to much discussion, and the official formula has been entirely changed, one authority at least stating that it is now perfect. A difficulty, however, is frequently experienced in preparing small quantities. Several samples were obtained from reliable sources, and their varied appearance suggested that there was still some room for improvement. The practical difficulty seems to lie in the mixing of the soap with the water, and this is especially the case when working with small quantities. In considering what might be done by way of simplifying and facilitating the ready making of small quantities of the liniment it was thought this might be done by dissolving the soap in a small quantity of alcohol (90 per cent.) or, more convenient still, by using an equivalent quantity of Hebra's spiritus saponis, which is generally at hand in all pharmacies. The latter is made by dissolving 2 ounces of soft soap in 1 fluid ounce of alcohol (90 per cent.), and the product measures $2\frac{3}{4}$ fluid ounces. It therefore follows that 2 fluid ounces and 30 minims of the solution contain the official quantity of soft soap required to make 1 pint of liniment, namely, $1\frac{1}{2}$ ounce. Proceeding in this way a perfeot creamy liniment which keeps well oan be made in a few minutes without the use of a mortar at all. Add the solution of soap to 2 fluid ounces of the water in a stoppered bottle; then add gradually the solution of camphor in turpentine, shaking vigorously after each addition, and finally make up to one pint by the addition of sufficient water. The operation of mixing and making up to one pint can be very conveniently effected in a York Glass Company's graduated mixing bottle. The alcoholic soap solution can be very readily made at the time by dissolving $1\frac{1}{2}$ ounce of soft soap in 6 fluid drachms of alcohol by a gentle heat then proceed as above indicated. The alcohol adds slightly to the cost, but the quantity is so small as to be of little moment. Probably the Inland Revenue would permit the use of methylated spirit in such a preparation, and it would be quite unobjectionable.

Mr. Duncan said there was no difficulty in making turpentine liniment by the official method if the soap was dissolved in boiling water. He had prepared a pint in seven minutes.

Mr. McDiarmid said he also found that this liniment could be easily made in a way suggested by Mr. Duncan.

Mr. McEwan asked if there was any explanation of the hardening of the gelatin basis by the ichthyol.

Mr. J. Rutherford Hill, in reply, said the point was that a solution of soap was usually at hand in the pharmacy, and any quantity of liniment could easily be made in a minute or two, several quantities could be made in the time water took to boil. The ichthyol was a complex sulphur compound, and seemed to act chemically on the gelatin. Messrs. Squire and Son, of London, had sent down a sample of an antiseptic vaginal capsule, containing a tampon of cotton, on which the medicament could be applied in glycerin as a medium. This was shown to the meeting, and also a sample of a modified larger size, sent by Mr. A. K. Stewart.

Supplementary Business.

Mr. Henry then described a series of bottles and appliances for storage and dispensing of poisons, which were exhibited at the meeting.

The Assistant-Secretary mentioned that of course no official sanction applied to any of the articles exhibited. He thought it worthy of noting that no legal obligations rested on any chemist to observe any regulations in the storage or dispensing of carbolic acid, which Mr. Henry had referred to as causing the death of Dr. Boyd. Carbolic acid stood at the top of the list of substances causing death by suicide and misadveuture, and probably the lamentable death of Dr. Boyd might induce the Privy Council to put it under regulations.

The Assistant-Secretary also directed attention to the recent additions to the Library.

On the motion of the Chairman, thanks were awarded to the authors of papers and donors of books.

On the motion of Mr. McLaren, a vote of thanks was awarded to the Chairman, and the meeting then closed.

Xeroform.—S. C. G. Watkins is greatly in favour of xeroform as a substitute for iodoform. In general practice he finds that the remedy combines all the advantages of iodoform without any of the disadvantages of the latter. In dentistry the author usually adopts the following process with excellent results. The canal is well cleaned and syringed out with an antiseptic. Xeroform is then injected, in combination with an antiseptic, and the tooth sealed with wadding and sandarac, usually after about ten days. This treatment has given great satisfaction in numerous cases, and has rendered a second treatment unnecessary. For lesions, bruises, and eczema of the skin, the author recommends washing of the affected parts with borolyptol and dusting on xeroform powder.—*Zahn. Rund.*, 7, 4575.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

A meeting of this Association was held on Wednesday, March 15, at the Westbourne Restaurant, Paddington, the President, Mr. J. F. Harrington, in the chair.—There was a good attendance, the subject for consideration being the

Practical Conformity with the Poison Regulations.

Mr. C. B. Allen opened the discussion by reading a paper which is printed in full at page 252. He prefaced his remarks by stating that he must offer a slight apology, because in the presence of a body of practising pharmacists it would possibly be easier to carry on a discussion if there was a little conversational introduction to the subject, but, on the whole, he had thought it would be better to commit his ideas to writing, hence the apology. He went on to say that when the President of the Association invited him to open a discussion which should have for its object the adaptation of regulations for the keeping, dispensing, and selling of poisons to the practical conditions of their ordinary everyday routine, he felt that through the fact of these regulations having existed under another name for more than a quarter of a century, it was probable that every member of that Association had adopted them to a greater or lesser degree, and that at least he would know best for himself to what extent any change may have become necessary in his surroundings or in his practice so as to enable him most easily to conform with regulations which now form part of the Pharmacy Act, 1868. Upon consideration, however, he was convinced that some enlightenment might be experienced by every pharmacist present if a close examination of the clauses which form the regulations should produce a discussion based upon the desire for united and practical conformity with requirements which had become their most recent legal obligation. He dealt with the subject as a member of the Association only, and disclaimed any pretence to official inspiration.—At the conclusion of the paper Mr. Allen exhibited a specimen sheet of poison labels he had got printed specially for small bottles, as he found those ordinarily sent out by medical label printers were much too large. The labels were printed on yellow paper in round, oval, and diamond shapes with black lettering, thus:—"Clause I. Poison. P.R. 1899." A square red label shown was intended for any proprietary article containing scheduled poison, stating that fact, and that it can only be legally sold by a person registered under the Pharmacy Act, 1868, and warning consumers not to take more than the dose given on the directions and to use a proper measure. Mr. Allen pointed out that hitherto chemists have had no legal authority to put a distinctive mark on proprietary articles, but now they have authority to do so.

Mr. R. H. Parker showed how the regulations, owing to their beautiful elasticity, can easily be made to fit in with existing conditions in a pharmacy. In the matter of attenuated dilutions which could hardly be called poisons, *i.e.*, morphine and ipecacuanha lozenges, cough lozenges containing a small proportion of opium, etc., a narrow strip of red paper placed just below the usual label on the bottle would meet the requirements of the first regulation. In regard to the second, there was no necessity for fresh bottles. A couple of vertical strips of thick rubber plaster placed on the bottle so that when grasped, the fingers would just close upon them would make the bottles readily distinguishable by touch. Of course, for the more potent poisons there could be nothing better than the ribbed bottle already in use. In the case of a country chemist's cask of arsenic, all that would be needed was a rope fastened round the barrel and another running from front to back, and the name of the substance plainly indicated. He thought that the greater the difficulty in any establishment, in conforming with the regulations, the greater need there was that the regulations should be compulsory as they now are.

Mr. Andrews thought that Mr. Allen had left them nothing to discuss, but one point he would mention was the necessity for chemists to have one uniform bottle in which to send out liniments. At present there were two in common use for the purpose, a flat and a hexagonal, and he thought it would be better to have simply one.

Mr. Taplin entirely agreed with Mr. Allen, also with Mr. Parker's suggestion with regard to the strips of rubber. He believed that most chemists did conform with the regulations, but it was an advantage that they should be made compulsory.

Mr. Cracknell raised the point as to whether, in conforming with Clause 3, it was necessary in dispensing, say, belladonna liniment, to give the name in full, or simply to call it "The Liniment." He thought if a case came before a Coroner's court where the latter was used, the Coroner would take the view that it should have been named "Belladonna Liniment."

Mr. Hick thought "The Liniment" would fulfil all the requirements. He did not quite fall in with Mr. Parker's idea about slips of red paper beneath the labels; also, in regard to the strips of rubber plaster, he thought it would be better to have fluted white bottles, and that it would be far better to go beyond carrying out the mere letter of the law, and to carry it out in spirit.

Mr. Bowen raised the question as to whether cocaine lozenges and pastilles should be labelled "poison." Cocaine was an important poisonous alkaloid, and therefore, he thought, should be labelled. Personally he had adopted all the regulations.

Mr. Rogers did not think that the regulations would interfere with their business very much, at any rate in the dispensing department. He thought a distinctive label was quite sufficient. He could not agree with Mr. Allen's suggestion as to adopting a yellow label for poisons, they would do better to stick to the old red label. With regard to Mr. Andrews' remarks about the flat and hexagonal bottles for liniments, he thought a green bottle was sufficiently distinctive. He much preferred a flat bottle to the hexagonal shape, because it contributed more to elegance in dispensing. He had suggested to his bottle-maker to make a flat bottle with a row of stars down each side, which would make it readily distinguishable by touch.

Mr. Marsh asked if wholesale houses were sending out poison in bottles conforming to the regulations. If not, he suggested that a requisition be sent from that Association to the wholesale houses, asking them to comply with the regulations.

Mr. Pickard thought the regulations were such as had already been adopted more or less in most pharmacies, and so would not entail any inconvenience to anyone. One point had not been mentioned by Mr. Allen, that was with regard to proprietary articles which now come under the regulations. The one he had in mind more especially was a strong preparation of belladonna used as a liniment sent out in a plain white bottle. He wished to know whether, as the proprietor is not liable, chemists would be expected to replace the white bottle with one conforming to the regulations. He also wished to know if it was possible to get a good wide-mouthed poison bottle for dangerous powders, he had tried to get one but had failed. He thought a weak point in the regulations was that they do not apply to poisonous ointments. To his mind the best safeguard was a good bold poison label.

Mr. Woollons said he should hesitate before taking the responsibility of changing the bottle in the case of a proprietary article sent out in a bottle that did not conform with the regulations. He thought the proprietors should see to that. With regard to the sale of carbolic acid, seeing it is a dangerous poison, although not scheduled, he thought there should be some uniformity observed by chemists. Personally, he took the same precautions with it as with other poisons, but one of his customers to whom he had explained his reasons for doing so, and who entirely agreed with him at the time, afterwards told him that another chemist had said the precautions taken were all nonsense, as it was entirely unnecessary in the case of carbolic acid, because it was not a scheduled poison.

Mr. Hyne did not see how chemists could undertake the responsibility of proprietors with regard to proprietary articles. He thought the proprietor should be responsible.

Mr. Allen replied to the points raised, and said with regard to wholesale houses it was a matter entirely in the hands of chemists themselves, as they should refuse to deal with houses that do not comply with the regulations. As to Mr. Pickard's remarks about proprietary articles, chemists were the sellers, and although it might be difficult, still they had to carry out the regulations, and, as registered men, to take the responsibility; but he had no doubt that the liniment referred to would in future be sent out in accordance with the regulations.

The President said they were all much indebted to Mr. Allen for his admirable paper. Although they might imagine that their pharmacies were all that they should be, he thought everyone present had gained some useful information. He had great pleasure in moving a hearty vote of thanks to Mr. Allen.

This was seconded by Mr. J. H. Mathews, and carried unanimously.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—IV.

Coelenterata (continued).

In the region of the manubrinm and tentacles the ectoderm of the polype gives rise to simple nerve cells and muscle fibres. The plain undivided gastric cavity of the simple polype becomes, in higher forms, as the sea anemones (Actinozoa), divided into a number of connected radial chambers, into which there is a common opening by means of a mouth and short gullet. Reproduction may take place sexually or asexually. In some simple individual forms as hydra both may occur, the same animal-producing buds, ova and spermatozoa. Again, in some colonial forms certain special zooids give off asexually little medusa buds, which grow up into adult medusæ, and finally by a sexual process, and in alternate generation reproduce the polype.

The medusa is an umbrella-shaped animal, where the stick of the umbrella is represented by a tubular manubrium, containing the gastric cavity, and the ribs are represented by radially extended canals of the gastric cavity, which run into a circulár canal round the edge of the umbrella, and so supply nourishment to the whole animal. The edge of the umbrella is folded, and bears a large number of tentacles, and at the bases of certain of these there are, in most medusæ, small sacs containing particles of calcareous matter (lithocysts), which appear to convey a sense of direction to the animal. The medusæ are dicœcious, the respective male and female cells being developed in some forms round the manubrium, and in others round the radial canals of the gastric cavity.

Corals may be formed by the simple hydra kind of polype, as in the order Hydrocorallina; or by the higher sea-anemone type, as in the order Madreporaria. The variety in the form and branching of the corals is due to the different methods and direction of the budding process. Great barrier reefs and whole islands in tropical regions are due to the calcareous secretions of these polypes.

Worms.

The worms, so called, present such a large variety of structure as to be distributed over five sub-kingdoms. They may be roughly divided into flat worms, round worms, and metamerically segmented worms, severally represented by the three types: Tænia (tape-worm), Ascaris (common thread-worm), and Hirudo (leech). They are bilaterally symmetrical animals, showing a much higher differentiation of tissues and development of special organs than the previous groups. They possess generally a well-marked, nervous, excretory and reproductive system, with few exceptions an alimentary system, and in the higher forms a blood vascular system.

The flat worms (*Phylum platyhelminthes*) are either short, flat, leaf-like bodies, as the liver fluke of the sheep, or long ribbon shapes, as the tape-worms. They possess no body cavity, the space between the body wall and the internal structures being filled with connective tissue, and many forms are parasitic.

The tape-worm (tænia) is a long, narrow ribbon-like worm which attaches itself to the intestine wall of its host by its head (scolex), a bulbous body crowned by a circlet of minute hooks placed above four suckers. The body, which contains no alimentary system, a peculiarity of its class (Cestoda), consists of a thin neck preceding a long ribbon of segments or proglottides, which are developed always at the head end, those farthest from the head being the oldest. Some distance down the segments develop male reproductive organs, and, when mature, contains complete male and female systems, which are not in the worms mere sacs of cells, but show on the one hand, testes, vasa deferentia, and penis; and on the other, ovaries, oviducts, uterus, and vagina.

When the segments are mature and ripe they become detached and pass out of the first host, the embryos contained waiting an opportunity to enter the second host, which in the case of the human tape-worm is the pig. The embryos very early develop a little boring apparatus in the form of six chitinoid hooks, by means of which, on entering the pig's system, they bore their way into the muscles. Here they become encysted, gradually assuming a bladder shape, with a typical tape-worm head. In this stage of its life history the worm is known as a cystieercus, or bladder-worm. The round or thread-worms (*Phylum Nemathelminthes*) show a distinet advance on the previous group, as besides a more elaborate nervous and excretory system, they possess a body cavity and an alimentary canal, consisting of a pharynx, intestine, and rectum.

EXPLANATORY NOTES ON THE B.P. 1898.

Quinine Sulphate.—The student is directed to note the complex formula for quinine sulphate $[(C_{20}H_{24}N_2O_2)_2H_2SO_4]_2 15H_2O$. The formula might more simply be expressed as $(C_{20}H_{24}N_2O_2)_2 H_2SO_4, 7\frac{1}{2}H_2O$. In both formulæ the loss of water on drying the salt at 100° would be 15·32 per cent., as specified in the B.P. On account of the efflorescent character of quinine sulphate, it must be very seldom that the fully crystallised sulphate is dispensed by the pharmacist. Hence may be the reason that the composition of the effloresced salt is now given. It has been shown (*P. J.*, lvii., 525) that the effloresced salt is of a constant composition $(C_{20}H_{24}N_2O_2)_2H_2SO_4,2H_2O$, having two molecules of water, but not four molecules, as stated in the B.P., except it is to be presumed that the B.P. intends the irrational formula $[(C_{20}H_{24}N_2O_2)_2H_2SO_4]_2 4H_2O$ for the air-dried salt.

Tests for Cinchonidine and Cinchonine.—The student is advised carefully to study the criticism of the Pharmacopœia test in the Journal (lx., 412). There he will notice that the test now prescribed is a very unsatisfactory one; that it misses nearly one half of the impure crystals of cinchonidine obtainable by a more exhaustive and satisfactory test, and that it passes as an official quinine sulphate a salt containing nearly 6 per cent. of cinchonidine sulphate. The impurity usually present in quinine sulphate is cinchonidine sulphate, the result of imperfect separation in the course of manufacture. Cinchonine sulphate, a much less costly salt, would only be present as the result of wilful adulteration, whilst quinidine and cupreine are seldom if ever met with. The test for cupreine as described in the British Pharmacopœia is a very rough test. It presupposes a fair admixturc of cupreine sulphate, since it is directed to separate it by crystallisation from a strong saline solution. The more exact method would be to either shake the soda liquid containing the cupreine alkaloid with ammonic chloride and ether, or neutralise the soda solution, then shake with ether and ammonia. If cupreine be present even in traces, the characteristic crystals of cupreine would separate out from ether in a very short time. It must be remembered that cupreine forms a compound with quinine when crystallising from ether, and is only separable by treatment with caustic alkali, and this compound of cupreine and quinine, under the name of homoquinine, was erroneously supposed to be a new alkaloid until it was thus decomposed and cupreine isolated (see *Pharm. Journ.*, 15., 221 and 401).

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CHEMISTS AND THE SALE OF DRUGS.

Two Bills before Parliament at the present time have been introduced with the object of amending the law relating to the sale of food and drugs. One is a Government measure, introduced by the President of the Board of Agriculture, and a summary of the proposals it contains was recently given in the Journal (*ante*, p. 216). So far as concerns the law relating to the purity of drugs, this measure, if carried through Parliament, would practically leave matters as they are at the present time, and it is well to bear in mind that this is probably what the President of the Local Government Board, who introduced a Bill on similar lines last year, would be well-pleased to see. In a lengthy explanation of his views, delivered some nine months ago, Mr. Chaplin gave expression to the opinion that the Sale of Food and Drugs Acts, 1875 and 1879, were adequate to effect the purposes for which they were enacted. That being so, it is hardly to be expected that his colleague who presides over the Board of Agriculture will take a much wider grasp of the situation. But it is useless to mask the fact that no one is satisfied with the measure and, as the *Medical Press* points out, it is denounced in every quarter—except by the adulterators—as a miserably pusillanimous makeshift. Whilst proposing to effect a few useful improvements in methods of procedure, the Bill in all other respects fails entirely to remedy the scandalous shortcomings of the existing law on the subject.

The Kearley Bill is another old acquaintance, originally introduced in 1897, re-introduced last session, and now appearing for the third year in succession. It contains the clause relating to the establishment of a board of reference, as it appeared last year, and in other respects does not appear to differ from the earlier draft. Considering, however, the limited extent to which Government seems prepared to move in the matter, the prospects of this private Bill do not appear at all bright, and it is quite within the bounds of probability that no amendment of the law will be effected this session. At the same time, chemists and druggists cannot afford to allow judgment to go against them by default in this connection, and they must be prepared to take up arms at any moment, in the event of matters tending in an undesirable direction. Mr. Long has publicly declared that the Government will do nothing calculated to interfere unjustly with any legitimate and properly conducted trade, and registered chemists can show a better claim to non-interference than most other trades. If the Government is only desirous of ensuring uniformity in the administration of the existing Acts, it is sufficiently powerful to carry its desires into effect, and there is little, if anything, for registered chemists to be alarmed at. But if, on the other hand, the opportunity should be taken, whilst the Bill is in Committee, to introduce additions that seem likely to interfere with the legitimate trade of chemists and druggists, strenuous opposition must be offered forthwith. What really ought to be done in legislating with a view to ensuring the purity of food and drugs is to treat the two classes of articles separately. They are so dissimilar that it is nothing short of an absurdity to deal with both in the same clauses of the same Bill. Registered chemists are entitled to separate treatment; considering the difference in their position, it is unreasonable to lump them together with farmers, grocers, hucksters, and other petty dealers in food-stuffs. It ought to be recognised that, by virtue of his training and special qualification, the registered chemist is the person to whom the public should look for the supply of pure drugs, and any legislation dealing with those articles should be based on that assumption.

The chemist and druggist is quite prepared to give a personal guarantee of the purity of the articles he deals in, but he should be recognised as the person of whom all drugs and medicines should preferably be purchased. This is not asking for a restriction of the sale of those articles to registered chemists, but for recognition of the undoubted fact that he is the person best qualified to deal in them. That recognition can easily be given by dealing with the sale of drugs in a separate Bill, in which the case of chemists and druggists shall receive special consideration. This view of the matter is, we think, deserving of serious attention. That chemists and druggists are entitled to some consideration is acknowledged by the proposal of Mr. Kearley and Sir Charles Cameron to allow the Pharmaceutical Society to nominate a representative on the suggested board of reference. A further step in advance would be taken if the Government were to solicit the views of the Pharmaceutical Society on the question of the sophistication of drugs. If, subsequently, a Bill were drafted in which registered chemists were recognised as the natural dealers in drugs, a difficult problem would be solved much more readily than it can be by any other means that are likely to be available.

It is, of course, open to question whether, so far as registered chemists are concerned, there is any need for legislation on the subject at all. The purity of the drugs they sell is a matter that too closely touches their business and professional reputation for them to risk supplying unsatisfactory articles, and the check thus imposed on fraudulent practices is a much more efficient one than any legislative enactment could be. If, however, the Government is convinced of the necessity of legislation in the public interest, chemists and druggists look for fair treatment. It is notorious that magistrates have dismissed charges against grocers for supplying inferior articles, on the ground that, as the defendants were not chemists, they could not be supposed to sell the articles as drugs. Had the defendants in those cases been registered chemists, they would have been promptly fined, and that, we contend, is not fair treatment. Let equal justice be meted out to all; it is unreasonable to compel registered chemists to sell pure drugs, whilst allowing their unqualified competitors to furnish sophisticated articles. But the whole question is essentially one on which the Government should consult the parties chiefly interested. It was considered worth while to hear the views of chemists on the subject whilst the Select Committee was sitting, and though the conclusions of that Committee appear to have been totally ignored, we hope the views of chemists will not be similarly ignored in the future.

ANNOTATIONS.

CARBOLIC ACID was the subject of a question in the House Commons, on Monday, March 13, when Dr. Farquharson asked the Secretary of State for the Home Department whether, considering the frequency of accidental poisoning by carbolic acid, the Government would now consent to the addition of that substance to the schedule of poisons within the meaning of the Pharmacy Act, 1868, thus making it a poison within the meaning of the Act, and consequently the subject of the poison regulations recently adopted by the Pharmaceutical Society of Great Britain, which require that all lotions, etc., containing poison shall be sent out in bottles readily distinguishable by touch from ordinary medicine bottles. In the absence of Sir M. White Ridley, Mr. Collings is reported to have replied to the effect that the Secretary of State understands that the Privy Council does not think it expedient to include carbolic acid in the Schedule of the Pharmacy Act, but is of opinion that regulations should be made with regard to its sale, and has prepared a Bill for the purpose. Another report puts the matter somewhat differently, Mr. Collings being represented as stating that the Secretary of State was considering whether or not it was expedient to include carbolic acid in the Schedule. But the Home Secretary has nothing to do with that matter and, on the whole, it would appear to be more satisfactory to learn direct from the Privy Council whether the recommendations which have received very general public support will not now be approved. Section 2 of the Pharmacy Act, 1868, empowers the Council of the Pharmaceutical Society to declare the articles which ought to be deemed poison within the meaning of the Act, and it provides that thereupon the Society "shall submit the same for the approval of the Privy Council, and if such approval shall be given, then such resolution and approval shall be advertised in the *London Gazette*, and on the expiration of one month from such advertisement the article named in such resolution shall be deemed to be a poison within the meaning of this Act." Resolutions passed by the Council of the Pharmaceutical Society —declaring that carbolic acid ought to be deemed a poison within the meaning of the Act—have been submitted to the Privy Council on three several occasions, but have never yet been either approved or disapproved. A formal acknowledgment of the receipt of the communication has been sent on each occasion but nothing beyond that.

IF BY ANOTHER RESOLUTION the Council of the Pharmaceutical Society declares that carbolic acid ought to be deemed a poison within the meaning of the Pharmacy Act, 1868, the Privy Council will need to face the question seriously once more. Public opinion, generally, is strongly in favour of some restriction upon the sale of the preparation, and there is probably not a single newspaper of any importance in Great Britain that has not urged the Government to take action in the matter. One press comment out of the large number that have come before us is to the effect that considering the great number of deaths, wilful and accidental, that are due to carbolic acid, Dr. Farquharson's question in the House of Commons was certainly not ill-timed. There is abundant reason, the *Newcastle Journal* thinks, for the contention that this dangerous article ought to be scheduled as a poison, though the Government does not yet see its way to so treat it. "But Mr. Jesse Collings gave the assurance that, sooner or later, a Bill is to be brought in to regulate the sale of carbolic acid. No doubt, its efficacy as a germ-killer and the great demand for it in consequence, account for the Ministerial caution. Why is that the public are not made acquainted with those disinfectants which, being as efficient as carbolic acid, are at the same time harmless to human beings." The real pity is that it is not recognised that carbolic acid is never used in the undiluted state; that it is useless as a disinfectant, of questionable value as a germ-killer, but an excellent preservative of much that it would be as well to destroy. In addition, the scheduling of carbolic acid and kindred preparations would not have the slightest effect in enhancing their price or in rendering them difficult to procure in emergencies. Registered chemists are to be found everywhere in Great Britain, however remote the spot, and at the present time their charges are often more remarkable for undue modesty than otherwise. But to advance arguments of this nature may prove as useless now as in the past, and before carbolic acid and other dangerous substances are scheduled it may be necessary for registered chemists to make use of all the machinery at their command and so compel the serious attention of Parliament.

A SCANDALOUS CASE under the Pharmacy Act, 1868, came before the judge at Louth County Court, on March 9. The defendant was apprenticed to a registered chemist and committed the offence with which he was charged whilst travelling around the country with a vehicle from which medicines were sold. In one instance, an ordinary ale bottle bearing its original label was taken to him, and he supplied in that bottle a quantity of laudanum. The label affixed bore the name and address of the youth's employer, but in the existing state of the law it was felt to be difficult to proceed against anyone except the person who had actually handed over the poison. As will be gathered from the report at page 273, the defendant has no means, and the probability of the Pharmaceutical Society recovering the two penalties imposed is slight in the extreme. With regard to the ethics of the situation, readers who reflect upon the position of the apprentice—sent out to do business in a manner which rendered it almost impossible for him to avoid committing an illegal action—will draw their own conclusions. There appears but little doubt that, if the penalties are paid and the defendant can thus prove damage, it will be open to him, through his guardian, to sue his employer, and the unfortunate youth will then probably recover exemplary damages.

AN ATTACK OF POISON HYSTERICS has affected a portion of the daily press, and certain organs are allowing much of their valuable space to be occupied with more or less absurd suggestions for the prevention of accidental poisoning. We cannot protest too strongly against the proposed use of bottles of impossible shape, spiked corks, phosphorescent labels, alarm bells, or any other of the lunatic contrivances now being pressed upon the attention of the public in general and of registered chemists in particular. The *Daily News* waxes enthusiastic over the idea of triangular bottles with roughened sides and toothed edges, with or without "the neck at right angles." Any person, remarks the *Daily News*, who "persisted in the abuse of tho bottle" (*sic*) in spite of those precautions ought to be brought under the Habitual Inebriates Act. But it would be much more to the point to deal with any genius who evolves the idea of such a "contraption," under the lunacy laws. It is altogether a mistake to assume that there is any need to enable a bottle to signal "poison" in the dark. Anyone who searches for a particular bottle in the dark must inevitably run a grave risk, and if such a person dies after drinking from the bottle, without having carefully inspected the label and in some way tested the nature of the liquid, it is only reasonable to regard the case as one of aggravated suicide. The administration of the contents of the bottle with fatal results to another

person, under similar circumstances, ought in like manner to be regarded as an offence equivalent to manslaughter, and punishable as such. The occurrence which is accountable for the prevalent excitement on the subject was one of the grossest cases of carelessness on record, and it is very difficult to see why the incident should lead to the perpetuation of any of the innumerable absurdities such as are referred to in the *Daily Graphic* and elsewhere. If only the public will procure all its medicines and poisons from pharmacies owned and conducted by registered chemists, the risk of accidental poisoning will be minimised; if, in addition, the poisons are kept carefully apart from the medicines in the household, and the latter are never sought for in the dark or taken without the exercise of reasonable precautions, the danger will become practically non-existent.

All Nominations for the Council must be in the hands of the Secretary of the Pharmaceutical Society by Saturday of this week. Any member qualified to vote may nominate any other member for election as a member of the Council (or as an auditor) by giving a signed notice to the Secretary, with the name and address of the nominee duly specified, but no time must be lost if it be desired to exercise that privilege this year. Persons who may be nominated will receive an intimation to that effect by Monday, March 20, at latest, and they must signify their readiness to accept office if elected, on or before Friday, March 31. Several members of the Society have suggested that it would not be an undesirable thing if the views of all the candidates for election on this occasion were stated by themselves in an early issue of the *Pharmaceutical Journal*. Whether any of the candidates may be expected to be prepared with a definite exposition of the policy they favour we are, of course, unable to divine, but it is needless to say that the columns of the Journal are freely open for the purpose suggested, or for any other object which may appear justifiable in the interests of the Society and its members. Possibly, too, in the event of a contest, a recourse to methods which are more familiar in the world of politics may tend to increase the interest taken in the election, and so leave less cause for complaint about the apathetic attitude so lamentably manifested on many former occasions.

The Petroleum Bill introduced by Mr. Reckitt, and referred to last week, came on for second reading on Wednesday, when it was opposed by the Government and rejected. It is stated that a measure dealing with the whole subject of the storage and sale of petroleum will shortly be introduced either by the Home Secretary or by Mr. Jesse Collings. According to the *Times*, the Ministerial proposals are said to be based upon the theory that where regulation is most needed is in connection with the construction of lamps. Glass reservoirs are imported in large quantities from the Continent, and having been supplied with metal fittings in this country, are sold at very low prices. But the point which is attracting most attention in official quarters is that these reservoirs are becoming steadily lighter and lighter until the glass is so fragile that in some cases it can be crushed in the hand. Specimens of such reservoirs are now in the possession of the Home Office, and it is possible that Mr. Collings may produce a sample in the House of Commons. for the purpose of demonstrating their untrustworthiness. The official contention is that lamps provided with those reservoirs will "collapse," no matter what oil is used, and that quite apart from the question of the flash-point—upon which the Home Office will not, it is now believed, maintain an absolutely *non possumus* attitude—their importation should be prohibited on grounds of public safety. How far the Scottish oil-refiners and other high-flash oil producers are concerned in the promotion of Mr. Reckitt's Bill, and to what extent the American Standard Oil Company is able to influence the British Government in the matter, are facts that remain to be disclosed. Undoubtedly, however, the struggle is mainly one of conflicting commercial interests, and the public safety counts for very little in the affair.

The Apparently Plausible Argument put forward by Mr. Ellinor in reference to the provisions of the Medicine Stamp Acts does not appear to have met with much support from his audience at the Sheffield Pharmaceutical and Chemical Society. But the fallacy of that argument needs to be pointed out, because a different position may be taken in regard to this subject by others who, like Mr. Ellinor, fail to remember that the object of those Acts was to establish, by the imposition of a stamp duty, a distinction between the sale of preparations known and authorised as medicines and the sale of secret remedies recommended by their proprietors for the cure of disease. The licence required by the Acts relates only to the sale of these latter preparations, either patented or incorrectly known as patent medicines, and except for the popularity and consequent demand for them created by public advertisement, the persons authorised by professional qualification to supply drugs and medicines had no occassion to engage in that branch of trade. That they have done so very generally, for the sake of the profit at one time attached to the trade, and that the sale of secret remedies has in the past been largely promoted by chemists and druggists, is matter of common knowledge, but those facts cannot reasonably be urged as grounds for removing the restrictive imposition of a stamp duty on secret medicines or the licence to sell in regard to a branch of trade which is so utterly distinct from the proper business of persons authorised to carry on the practice of pharmacy.

The General Medical Council has received a communication from the Privy Council with regard to the employment by medical practitioners of unqualified persons as dispensers, enclosing copies of letters on the subject addressed to the Privy Council by registered chemists. The writers of those letters had evidently acted on Mr. Glyn-Jones' initiative and taken the Heaton Morris fatality as their text. In that case, it will be remembered, an unqualified dispenser caused the death of one of his employer's patients by dispensing a larger quantity of morphine than was ordered in the prescription (see *P. J.*, *ante*, p. 36*c*). The contention of the Privy Council's correspondents is that, in the interest of the public safety, medical men ought not to be at liberty to delegate the dispensing of medicines to any but duly qualified persons. After considering the matter, the Executive Committee of the General Medical Council decided to recommend the subject to the consideration of the Council. Replying to the Privy Council, the Executive Committee acknowledged that "occasional accidents may arise from the employment by qualified medical practitioners of careless or incompetent dispensers," but it was urged that such cases are very rare and that "probably the best protection is afforded to the public by the responsibility of the practitioner for the acts or defaults of the servants whom he employs." At best, this can only be regarded as cold comfort by the relatives of persons accidentally poisoned by unqualified dispensers, and medical practitioners who employ such would do well to take to heart the warning of the *Lancet*, which advises them "to do what is necessary to eliminate the risk of accidents." That, of course, should involve one of two things—the relinquishment of the practice of dispensing by medical practitioners, or the replacement of unqualified dispensers by persons duly qualified to undertake such dispensing as must of necessity be done by medical men.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, W., on Thursday, March 9, the PRESIDENT, Mr. F. W. Gamble, in the chair. There was a large attendance to hear Dr. A. P. LUFF, Physician to St. Mary's Hospital, lecture on

The Chemistry of Gout.

After a few introductory remarks, the lecturer described gout as a disease which is associated with the presence of an excess of uric acid in the blood, ignoring the fact that uric acid also occurs in the blood in cases of consumption, pneumonia, heart disease, kidney disease, etc., and is far from being a specific distinctive element of a definite form of disease. Proceeding, it was explained that the points which it was proposed to consider in connection with the chemistry of the disease were the mode or modes by which the uric acid is produced and introduced into the blood, the source or sources of its production, the compounds of it that are met with in gout, and the factors or conditions which influence its formation. Uric acid was described as a bibasic acid, with the formula $H_2C_5H_2N_4O_3$, and it was stated to form three classes of salts, neutral urates, biurates, and quadriurates. In regard to the latter, it was somewhat arbitrarily assumed by the lecturer that they are formed by the substitution of one-fourth of the replaceable hydrogen of two molecules of uric acid, by a metal, sodium quadriurate being quoted as an example. As a matter of fact, however, according to its chemical constitution, uric acid is no acid at all, and it is more than unlikely that in the complicated mixture of acids or alkalies which exist in the blood, it would be capable of attaching to itself just the strongest alkali. Experiments were described which had been carried out by the lecturer to ascertain the cause of the gouty paroxysm and of the presence of uric acid in the blood of gout, the seat of production of uric acid, the influence of diet on its formation, and the formation of uric acid from urea in the kidneys, facts being given in support of the view that uric acid is formed from urea and glycocine.

The crystallisation of sodium biurate within the interstices of the cartilage was alleged to provoke inflammatory change, but nothing was said about those numerous cases in which the urates have crystallised and no gouty paroxysms have taken place. The fact that there is no direct experimental proof that uric acid is a toxic agent was thought by the lecturer to be opposed to the view that it possesses a toxic action, but the process of reasoning by which that conclusion has been arrived at is not quite obvious Another argument advanced in support of the same view—that premonitory symptoms of poisoning are absent in the case of a person on the eve of an outbreak of gout, although the fluids of the body are saturated with sodium biurate—is also questionable. Again, the suggestion that gout is due to deficient elimination of the uric acid "normally produced in the kidneys," loses much of its force when allowance is made for the probability that uric acid is not produced in the kidneys. For it is excreted—at times in abnormally large quantities—when the proper secretion substance of the kidneys has been destroyed by disease. This was actually stated to be the case by the lecturer when, later, he referred to the effect of chronic lead poisoning "which always affects the kidneys by diminishing their excretory powers," and yet "is always accompanied by the presence of uric acid in the blood."

In fact, it is not too much to say that, since W. von Schröder's experiments no physiologist in the world holds that uric acid is formed in the kidneys, whether in bird or in man. Nevertheless, the first of the conclusions arrived at by the lecturer was that uric acid is normally produced only in the kidneys. His other conclusions were that (2) uric acid is normally formed from urea, probably by union of that substance with glycocine in the kidneys; (3) uric acid is present in the blood in gout as the soluble sodium quadriurate. In its soluble form it is not a toxic agent. It deposits from the blood as sodium biurate, which acts passively and physically as a foreign body in the tissues or organs in which it is deposited; (4) the presence of uric acid in the blood in gout is due to its deficient excretion by the kidneys, and to the subsequent absorption of the non-excreted portion into the blood from those organs. On these obscure points considerable difference of opinion exists, but, at the conclusion of the lecture, Dr. Luff invited criticism, and said he was quite prepared to defend his conclusions.

Before proceeding to demonstrate the determination of uric acid, Dr. Luff said he had noticed in the *Pharmaceutical Journal* recently that, in the opinion of some members of that Association, pharmacists should have nothing to do with analysis, but that analytical work should be left to specialists. He held quite a contrary opinion. It was almost the bounden duty of the pharmacist to assist his medical brethren in the matter of analysis. He believed that 99 per cent. of the medical students of to-day—of whom he had a somewhat extensive experience—do not possess either the necessary apparatus or the knowledge for the accurate analysis of urine, etc., and it was to the interests of pharmacists to be prepared to undertake such work for them. He would, however, like to warn those present who might take up the analysis of urine to have nothing to do with Haycroft's process. The process which he employed and had found to be the best and most accurate, was

The Gowland-Hopkins Method for the Determination of Uric Acid in Urine.

Dr. Luff then proceeeded to give a demonstration of this process, which is as follows:—To 100 C.c. of the urine powdered ammonium chloride is added till practical saturation is obtained; about 30 grammes of ammonium chloride as a rule being required. When a small quantity remains undissolved, after brisk stirring for a few minutes, saturation is sufficiently complete. The urine is then allowed to stand for two hours, during which time, if possible, it is occasionally stirred to promote subsidence, and is then filtered through thin filter paper and washed three or four times with a saturated solution of ammonium chloride. The filtrate should remain perfectly clear and bright. The precipitated ammonium urate is then washed off the filter into a small beaker with a jet of hot distilled water, and is heated just to boiling with an excess of hydrochloric acid. The beaker and its contents are allowed to stand in the cold for two hours, when the uric acid separates out completely, and is then collected on a filter and washed with cold distilled water. The filtrate should be measured before the washing is begun, and one milligramme added to the final result for each 15 C.c. of filtrate present—this need never be more than 20-30 C.c. The uric acid is then washed off the filter with hot water, warmed with sodium carbonate till dissolved, and made up with water to 100 C.c. The liquid is then transferred to a flask, 20 C.c. of strong pure sulphuric acid are added, and the mixture is then immediately and while warm titrated with one-twentieth normal potassium permanganate solution. The latter should be added slowly towards the end of the reaction, the close of which is marked by the first appearance of a pink colour, which is permanent for an appreciable interval. Previously the disappearance of the colour is instantaneous. The permanganate solution is made by dissolving 1·578 grammes of pure potassium permanganate in a litre of distilled water. 1 C.c. = 0·00375 gramme of uric acid.

The PRESIDENT said he had thought that it would appear to be presumption on the part of the members of that Association to discuss the paper, but as the author had invited criticism he hoped members would not be backward. The practical way in which Dr. Luff had explained an intricate subject had been listened to with the greatest interest, while the excellent diagrams had reminded some of those present of the days when they were Major students. Dr. Luff was to be congratulated on his tables, which represented an enormous amount of work.

Mr. W. T. COOPER thought that the process for the determination of uric acid was rather a lengthy one, at any rate for the layman. He found that as a rule medical men want a simple apparatus. He was pleased to hear Dr. Luff say that the analysis of urine, etc, should be in the hands of pharmacists, but his experience was that medical men were not prepared to pay for it. Pharmacists often went to the expense of purchasing apparatus for special work, and after using it once never required it again. He had come there that night in the hope that Dr. Luff would have brought forward a more simple process than the one he had demonstrated.

In answer to Mr. Gamble, Dr. LUFF said the administration of drugs as solvents of uric acid in the blood was altogether wrong, as there is no uric acid in the blood. Replying to Mr. Cooper, he said he was highly delighted to hear that the process was too long for the average medical man, because he desired such work to pass into the hands of pharmacists. He had tried to contrive a simple yet accurate process, but had failed. With regard to a question by Mr. Hymans as to what therapeutic agents could be used to increase the elimination of uric acid, he said that colchicum very markedly increased the elimination of uric acid in gout. Referring to a question by

Mr. James, he said there is no drug which exerts any solvent effect upon the sodium biurates. The best method for the removal of gouty deposits was, undoubtedly, the copious drinking of water.

The President then moved a vote of thanks to the lecturer which was accorded by acclamation.

Dr. Luff, in reply, said it was a great pleasure to him to come amongst a body of men of whom he was at one time a member. It was also a great pleasure to him to recognise the remarkable growth and vitality of that Association. He knew it in its younger days and had watched its progress, and had been surprised that it had been vigorous enough to survive four or five papers from himself.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

At a meeting of this Society held on Friday, March 10, Mr. G. Squire (President) occupied the chair, and Mr. G. Ellinor read a paper on

The Medicine Licence.

The author commenced by dealing with the medicine stamp licence—which he called an anomaly—from an historical point of view, and quoted from the Act 23, Geo. III., c. 62, as follows: "All persons except such as have served a regular apprenticeship to any surgeon, apothecary, druggist or chemist, or such as shall have kept a shop for the space of three years before the passing of this Act, for the vending of drugs or medicines only, not being drugs or medicines sold by virtue of His Majesty's Letters Patent, to take out a licence annually." He then showed how the Act was subsequently amended, and took a brief glance at the administration of the Act, showing how the retailer may break open duly stamped inclosures of dutiable medicines, and sell the contents without further stamp duty; providing he does not inclose them in a packet, box, etc., he may sell them loose or merely wrapped in paper, or in the customer's own bottle or box, but must not supply them in a bottle or box provided by himself, nor must the paper or paper-bag be sealed up, gummed, or tied with string, thread, or fastened in any other way.

Mr. Ellinor regarded the proviso as a monstrous thing, and asked, If Galen's cough pills must be stamped, why not Sartorius' coats or Cordwainers' shoes? The author then proceeded to deal with the subject in its immoral aspects, more particularly with respect to advertisements of quack nostrums, in reference to which he regarded the law as a diabolical outrage upon the public, and an incentive to deliberate fraud, seeing that no guarantee is required as to the truthfulness of the statements made to the public, nor is there any check upon the quality of the article or nostrum advertised. He thought it was an anomalous state of things that registered chemists who have complied with the law, and have qualified to compound and sell poisons—for the public safety—should be required to take out a further licence to do the same thing, or perform the duty they are already licensed to perform. He looked upon it as degrading to the calling of pharmacy to sell the vile compounds containing scheduled poison put upon the market by unregistered persons, of which nothing is known except the properties ascribed to them by the manufacturers. He thought the time has come when the proclamation must be made of pharmacy for the pharmacists.

Every registered person must become a member of the Pharmaceutical Society, and members must seek out men to put on its Council whose interest is in retail pharmacy and whose determination is to carry out the Pharmacy Acts for the public safety. The medicine licence must be abolished in its application to registered chemists. Is it not a thing irregular and unreasonable, Mr. Ellinor asked, that you should have obtained a qualification licence to compound, prepare, dispense, and sell medicines and poisons, and that you should be required to take out a further 5*s*. annual licence in order to say what these medicines are for and how they are to be used, and again to add an *ad valorem* stamp? Abolition of this tax, he said, must be taken up by the Society and carried out by it, and if every registered chemist joined the Society there should be no difficulty in accomplishing that object.

Mr. Ellinor then described the P.A.T.A. as a negative remedy. It puts a maximum profit into the proprietors' pockets, and should the proprietor be an unregistered person and the article contain a scheduled poison, chemists must qualify, pay rent, rates and taxes, and find skilled labour for a minimum profit, pay 5*s*. a year in the bargain to make money for an unregistered person? This, he thought, was inconsistent. What moral right, he asked, has an unregistered person to put on the market a medicine of any kind, much more one containing a scheduled poison. The only remedy was the abolition of the medicine licence. It could be obtained by the Council of the Pharmaceutical Society refusing to allow its licentiates to take out a second licence issued by an irresponsible body to perform that which they are already licensed to do; by refusing to allow its licentiates to supply stamped medicines as nostrums, and to fix the time when it should come into force. In order that the public may not be oppressed, to formulate the conditions by which such preparations known as chlorodyne may be sold, as name of article, maker's name, proportion of active principles, dose, name and address of seller, in conformity with the provisions of the Pharmacy Acts, and the regulations for the keeping and dispensing of poisons. That the Council of the Pharmaceutical Society should take these steps, he thought will become more evident now the poisons regulations have become law. Chemists are confronted with the question, Who is the keeper? Is the qualified servant of an unqualified master the keeper? If the poison regulations are to be of any service to the public safety they must be enforced, and will call for the Council to put into force the striking off the Register the names of registered persons for covering unregistered persons or companies.

Mr. Squire did not think that anything could be done in regard to the Stamp Act until an Act of Parliament was passed limiting the sale of medicines to the chemists of the country. He did not see what the Stamp Act had to do with the Society's examinations. It was altogether separate, and had been passed in order to produce revenue. Were it not for the Act, he believed there would be a much greater quantity of proprietary medicines on the market than there is at present. Anybody could sell the medicines if they did not contain scheduled poisons, and but for the licence pharmacy would be about snuffed out All the articles sold would be of the proprietary class, and pure drugs would not be in the market. At present pharmacists could sell a pure drug and say whatever they liked about it without a stamp. Mr. Ellinor was rather rough on the wholesale dealer, but he (the speaker) believed that many of the wholesale men in the country had done a great deal for the retailer. He knew Mr. Ellinor would like to see a clean sweep made of the whole Council of the Pharmaceutical Society, but he should be sorry to see them all taken away. He did not see how the Society could refuse to allow its members to sell proprietary medicines. They were on the market, and somebody must sell them. He did not agree with pushing them, and would keep them in the background, but as the public, who were easily gulled, would ask for them, pharmacists must keep them. A great part of the evil would be stopped if it was insisted in England, as it was in some of the Continental countries, that every proprietary medicine should have on its wrapper an analysis of its contents. That would not do for many of the proprietary articles, especially those of the Yankees.

Mr. J. Preston remarked that formerly proprietary medicines were not sold by chemists, but by stationers. The chemists had been forced by the demand to take the business up. At one of his shops he found that the sale of proprietary articles was sometimes almost equal to the sale of other medicines, and certainly in many cases it was one-third of the business. He felt thoroughly ashamed to confess that it was so, but he thought that the cause of it was simply the gullibility of the public. The Government stamp had put a sort of guarantee upon the medicines, which ought never to have been done.

Mr. W. Ward said perhaps the greatest mistake that the Legislature ever made in dealing with medicines was the reduction of the cost of the licence from a guinea to 5*s*., which put the sale of these nostrums in the hands of individuals right and left. Instead of the licence being lowered, it ought to have been doubled. Although for some time he did not think that the action of the P.A.T.A. was a wise one, he was convinced that the Association was working on right lines under the circumstances. As long as there were proprietary articles to vend he could not help but support the cause of the Association. It aimed at giving the vendor a fair and reasonable profit upon his turnover, and chemists ought to be satisfied with a legitimate profit upon the articles of about 12½ per cent. He did not think it at all likely that the Government would interfere with an Act which brought in some-

thing like a quarter of a million sterling per annum, and the wisest thing for the chemists was to get the best profits they could.

Mr. G. T. W. NEWSHOLME, referring to a remark made by Mr. Ellinor about the fees of the Council of the Pharmaceutical Society, said he had been a member of that body eleven years, and had never drawn any fees yet. He agreed with Mr. Ward that it was a mistake to reduce the cost of the licence for proprietary articles. It then became worth the while of small shopkeepers in every little village to take out a 5s. licence. The making of the articles also spread very largely, and now many patent medicines were made by small shopkeepers, and they who were supposed to be respectable chemists were helping to sell them. He pointed out that a poisonous medicine or proprietary article, if it were not patented, could not be sold by anyone except a registered chemist, and it must be properly labelled. A poisonous artic'e for which letters patent had been taken out was exempt from the Pharmacy Act, but these were very few in number. Pharmacists ought to aim at getting the complete control of the sale of medicines, as was the case in some Continental districts. The chemist was educated for the sale of medicines, although the Act of 1868 was only a poison Act. They were now trying to get powers, and he thought they would succeed in getting part of them. It ought to be understood that it required a skilled hand to sell ordinary medicines, just as skilled as it did to sell poisons. That was the fact, because many of the ordinary medicines were extremely dangerous. If that understanding could be obtained, a great number of wretched quack medicines would disappear. What was there so dreadful as the things advertised for the cure of all irregularities in women, in the advertising of which the religious papers were the worst sinners? The *Lancet* had drawn attention to the question, and, he thought, with very great good. Chemists in the past had sinned very largely in lending themselves to the sale of proprietary articles, and they were suffering for it to-day. He did not believe in the P.A.T.A. It had noble aims, but it was not carrying them out in the proper spirit. It was becoming a question of getting protection for the proprietors of an article, but for the retailer there was not much protection. Many of the things that had been put on the list had been advanced in price, and the increase did not go into the retailer's pocket, but into the proprietor's. It was a great mistake for chemists to lend themselves to the appearance of evil, and they should not encourage the sale of such medicines at all.

Mr. ELLINOR, in replying, urged that the sale of these nostrums could be diminished very materially if all the members of the Pharmaceutical Society would join together for that purpose. The more place they gave to the medicines the more they helped to defraud the public. The Chancellor of the Exchequer would not take up the question: the members of the Society must do it themselves as one body politic. If they were striving for the truth, and trying to sell pure drugs, why should they submit to a further tax? If all the chemists in the country ceased to take out licences at a given time, look what the result would be! They did not object to sell things that were called for, but let the labels on them tell what they were. All other nostrums they ought to abandon entirely. He proposed the following resolution:—

> That this Society approves of the abolition of the medicine stamp and licence in its application to persons duly registered under the Pharmacy Acts, and requests the Council of the Pharmaceutical Society to take the necessary steps to legally bring about this desirable reform in the sale of noxious and poisonous medicines under the medicine stamp and licence, and thus bring all medicines within the provisions of the Pharmacy Acts and the keeping and dispensing of poisons regulations of the same Acts.

On the suggestion, however, of Mr. NEWSHOLME, who said certain proposals for a Pharmacy Bill were now before the Lord Chancellor for his approval, the resolution was withdrawn.

PRESENTATION TO MR. W. WARD.

A very pleasant event took place during the evening, in the presentation of a portrait, subscribed for by the Sheffield members and student-associates of the Pharmaceutical Society, to Mr. W. Ward, F.C.S., in recognition of his valuable services as Hon. Local Secretary of the Pharmaceutical Society of Great Britain for twenty-one years.

Mr. G. T. W. NEWSHOLME, F.C.S., Vice-President of the Society, in making the presentation, said it was twenty-one years since he came to Sheffield, and during the whole of that time it had been his privilege to be associated with Mr. Ward, both in the local and in the greater Societies. Mr. Ward had held office in the Pharmaceutical Society of Great Britain for double the time that he (Mr. Newsholme) had been a member of the Council. People sometimes say, "Why should I belong to the Pharmaceutical Society? What good is it to me?" Nobody could better answer that question than Mr. Ward. If he had felt it his duty to be a member so long, and to give his time to duties for which he received no pay, every member of the craft ought to see that it was his duty to do something to contribute to the work of the Society. If he could not actually devote his time he ought at least to afford a guinea a year to it. He (Mr. Newsholme) had been trying to do a little missionary work, and to induce members of the craft in various parts of the country to adopt some organisation. The chief organisation, and the one which he believed in most of all, was the Pharmaceutical Society of Great Britain. He thought it was the duty of every member of the craft to belong to that body, in his own interest. Even from a selfish, an £ s. d. point of view, he was sure it was a material advantage to belong to the Society. On behalf of the members of the Society he handed the portrait to Mr. Ward in recognition of his long and valuable services, and of the loyalty and disinterestedness with which he had always worked for the benefit of pharmaceutical affairs.

Mr. WARD, in reply, said the kind words of Mr. Newsholme and the act performed by the members and associates of the Society made him feel that his labour had not been in vain. He did not know that he had done anything to merit the gift. He was elected to the post of local secretary, and re-elected year after year, and he always felt it his duty to discharge all the obligations of the office to the best of his ability. Those obligations sometimes were not, perhaps, of the pleasantest nature, but at the same time he felt that he must do his part, and, at whatever cost, take the consequences. To the best of his ability he had tried to be loyal to the Pharmaceutical Society of Great Britain. It was now twenty-nine years since he became a member of the Society, and he had always felt it should be not only a duty but a pleasure to do what he could to enhance its success. He strove, while local secretary, to gain members and associates in the district, and he thought he would be borne out by the President and others when he said that Sheffield had for a number of years ranked very high in its membership and associateship of the Society. He had also taken a very keen and deep interest in the welfare of the Benevolent Fund, and he thought Sheffield had fairly done its duty in supporting that noble institution. He had always held that those who could should support it, and if possible help the unfortunate ones who had not been so successful in business as themselves. He valued very greatly the gift they had presented to him, but he valued far more the feeling which had prompted it. While memory lasted, he should feel that he had a place in the hearts of his fellow-craftsmen, and that to him was a proud fact.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

At a meeting of the above Association, held Friday, March 10, Professor COLLIE delivered a lecture on

Mountaineering on Mont Blanc,

illustrated by numerous lantern views. There was a large attendance of members and friends.

Professor GREENISH occupied the chair, and in opening the proceedings explained that the lecture on the Rockies, originally intended for this Association, had been delivered at the evening meeting of the Pharmaceutical Society, but that Professor Collie had kindly come forward with another on Mont Blanc.

Commencing with the ancient history and legends of the Alps, the lecturer pointed out how very little was known about them at the beginning of the century, owing, no doubt, to these legends and the little inclination of the natives to explore them. The chief routes to the summit from the northern side were excellently well shown by a series of views illustrating the exceedingly rugged and steep rocky ascents, and the paths traced out by the glaciers in their course to the lower valleys, including a view of the half-way house, where a stay is usually made for a night, the ascent occupying the greater part of two days. The most interesting part of the lecture was the account of the ascents of some of the steepest "Acguilles," or rocky crags, by Dr. Collie and two of his friends, crags which had defied the attempts of some of the best Alpine climbers, the smooth rocky faces of which seemed impossible of ascent, and only accomplished after terrific hard work and exposure. Professor Collie also described and illustrated an ascent of Mont Blanc made from the southern side, a much

more difficult task, and by a route which is very seldom used. In conclusion some excellent views were shown of the villages nestling in the valleys at the foot of Mont Blanc, so lively in the summer with the ever-increasing bands of tourists.

Professor Greenish, in proposing a vote of thanks, pointed out that what they had first thought to be a loss had turned out to be a gain, for he was sure they had all listened to a lecture which had even exceeded in interest that delivered before the Pharmaceutical Society.—This terminated the proceedings, and an adjournment was made to the Examination Hall, where refreshments were served.

LIVERPOOL PHARMACEUTICAL STUDENTS' SOCIETY.

A meeting was held on Thursday evening, March 2, at the Liverpool School of Pharmacy, Sandon Terrace, the President, Mr. R. C. Cowley, in the chair.

The

Miscellaneous Communications

were as usual varied and interesting. A sample of zinc oleate prepared by precipitation in boiling solutions was shown by Mr. A. H. Morgan, as well as the ointment prepared with it. Glycogelatin containing boric acid was also exhibited by Mr. Morgan, who, at a previous meeting, had remarked upon the gradual separation of the boric acid in crystals throughout the mass, making it quite opaque.

The President presented a prescription for pills for the consideration of the members as it was rather a curious one to turn out properly, owing to the amount of essential oil prescribed. It was—

℞	Ferri Sulphatis	gr. i.
	Niccoli Sulphatis	gr. ¼.
	Extracti Belladonnæ	gr. ¼.
	Extracti Nucis Vomicæ	gr. ¼.
	Aloin	gr. ¼.
	Olei Menthæ Piperitæ	♏ ½.

Fiat pilula.

When massed with acacia powder, this was a large pill.

Mr. Prosper H. Marsden advised the use of powdered soap, as did also other members. Flour would be the best, Mr. Catford thought, whilst the President had a preference for kaolin for this class of pill, though perhaps flour would make a better mass. The use of soap was out of the question, as it would decompose the metallic salts present. Mr. Cooke had used soap, but found that it made a very soft pill, thus emphasising Mr. Cowley's objection.

As a sequel to the notes on

Laboratory Waste Products

contributed by Mr. R. C. Cowley at the preceding meeting, he exhibited several interesting chemicals of interest to pharmaceutical students, among which were *Ferric Potassium Alum*, $Fe_2{\cdot}3SO_4,K_2SO_4 24H_2O$, in perfect octahedra, made from the liquors of the sulphuretted hydrogen apparatus, in which the contained H_2SO_4 and $FeSO_4$ had been estimated and then oxidised by the addition of a suitable amount of K_2SO_4 and KNO_3. Mr. Cowley remarked upon the difficulty he had had in getting it to crystallise, for a basic salt is produced if a heat of over 80° C. be used in the oxidation process, and the solution has to stand for a time at 0° C. before the crystals form. The ferric ammonium alum is the "iron alum" generally used, this potassium iron alum being somewhat rare.

Calcium Sulphovinate or *Calcium Ethyl Sulphate*.—This was made from the residue left in the retort after making ether. The residue consisting of ethyl hydrogen sulphate or sulphovinic acid, ether, alcohol, sulphur dioxide, and hydrocarbon oils, was neutralised with Ca,2HO and the calcium sulphovinate dissolved out with water. On concentrating this solution calcium sulphate, which is usually present, crystallises out and is filtered off, and on further concentration the calcium sulphovinate gradually crystallises.

$$SO_2\begin{matrix}<\\<\end{matrix}\begin{matrix}O\cdot C_2H_5\\O\end{matrix}\!>\!Ca \qquad SO_2\begin{matrix}<\\<\end{matrix}\begin{matrix}O\\O\ C_2H_5\end{matrix}$$

Potassium Sulphovinate was made from the last salt by decomposing it with K_2CO_3, filtering and evaporating, but is difficult to crystallise. Either of these salts may be employed to form ethyl mercaptan, $C_2H_5{\cdot}HS$, by heating with KHS, *e.g.*,

$$C_2H_5{\cdot}KSO_4 + KHS = C_2H_5{\cdot}HS + K_2SO_4.$$

This ethyl mercaptan is one of the bodies used in the manufacture of sulphonal.

Oleum Æthereum.—A very complex substance, about whose composition there is but little more known now than there was fifty years ago, and about which recent chemical literature maintains a discreet reticence. The article met with in the shops under this name is indefinite in strength, and is usually obtained from the retort residue after ether has been made, by heating to 171·6° C., and separating the yellow oily layer from the distillate, subsequently shaking with an aqueous solution of sodium carbonate, to remove sulphurous acid. The specimen shown was made in this way, and was denser than water, hence the name "heavy oil of wine." This density increases on exposure to the air. If warmed with water, separation ensues and other hydrocarbons lighter than water rise to the surface, which are termed "light oil of wine."

The superiority of the present "spiritus etheris compositus," owing to the exact directions given in the Pharmacopœia for its preparation, is manifest when it is compared with the indefinite product of the 1885 B.P. and with that made by dissolving the equally indefinite oleum æthereum in spirit.

Silver Nitrite in fine crystals were also shown by Mr. Cowley, whose remarks illustrative of the specimens shown and their preparation were listened to with interest.

A well-written paper of considerable literary ability was then read by Mr. H. B. Morgan on

A Glance at Some of Our Grandmother's Fairies.

The author began by a description of the fairies as held to exist by our ancestors, touching upon folk-lore, particularly that of the Irish peasants. These mythical stories he showed were in many respects justified by more recent discoveries in the world of science. In one branch alone of scientific research—that of bacteriology—a fairyland had been discovered more important and more extensive than any our grandmothers could have dreamt of. A general *résumé* of the history of bacteriology concluded the paper, which was received with many manifestations of pleasure by an appreciative and deeply interested meeting.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association held on March 9, Mr. W. L. Currie, the President, in the chair,

Mr. Thomas Dunlop read a short paper on the

B.P. Nitrite Test for Eucalyptus Oil.

He said the B.P., in making no mention of colour, seemed to indicate that the precipitation of phellandrene was the only thing worthy of note, and that was emphasised by Squire who, however, made the additional statement that "a *Globulus* oil . . . . . assumes a green colour." The author had examined three samples of oil, both by the B.P. method and by Baker and Smith's modification of it. The first appeared to contain no phellandrene and only a trace of pinene; the second contained a fair amount of both; the third contained a larger amount of both, and as far as phellandrene was concerned a questionable amount. Baker and Smith's test would detect phellandrene, which would escape notice by the official test. Curiosity prompted him to apply the test to ol. terebinth., and the colour was as brilliant as that produced by any sample of eucalyptus oil he had examined.

Mr. Thomas S. Barrie then read a short paper on

Selenium and Tellurium.

These substances, he said, had not yet found a place in practical medicine, although they had been experimented with by various physiologists. They only occurred as impurities in bismuth salts and sulphuric acid, though all samples did not contain them. Bismuth prepared from Saxony ore was likely to contain them, and sulphuric acid from certain pyrites obtained in the Hartz mountains in Germany, and from certain varieties of sulphur. The most remarkable chemical property of selenium and tellurium was the readiness with which they were reduced to the free state when treated with reducing agents, such as sulphurous acid and stannous chloride. This reaction was given by all their soluble compounds, and was the principle of the official test.

Mr. W. L. Currie next read a paper on

The Poison Regulations.

He said it was incumbent upon chemists to carry out these regulations, and in regard to the first and second, he saw no difficulty in carrying them out. The third regulation provided that liniments, embrocations, and lotions containing poisons should be sent out in bottles rendered distinguishable by touch from ordinary medicine bottles. While such a regulation would not prevent the crime of suicide, it should certainly lessen the number of cases of poisoning by misadventure, caused in many instances by using a similar bottle for both internal and external medicines. Distinctive labels were all right, but not sufficient. The public was now so accustomed to the hexagonal fluted bottles that it would be a mistake to use any other kind. Reference was made to the numerous suggestions called forth by the death of Dr. Boyd, and it was urged that the public welfare should be the first consideration of chemists, who should use every precaution to minimise the possibility of accident. In conclusion, it was suggested that it would be a great advantage if wholesale dealers would send out poisonous articles in easily distinguishable bottles. The cost would not be any more and the extra precaution would be much appreciated.

MIDLAND CHEMISTS' ASSISTANTS' ASSOCIATION.

At a meeting of this Association, held on March 8, Mr. J. Selby, in the chair, Mr. F. H. Alcock delivered a lecture, entitled

An Hour with a Polarimeter.

The lecturer explained the construction and use of the polariscope, and the meaning of the term "polarised light," many illustrations being given. He then proceeded to explain wherein the polarimeter differed from the ordinary polariscope. Subsequently, reference was made to different substances contained in the British Pharmacopœia, including aconitine, tartaric acid, essential oils, etc., the purity of which requires to be determined to a greater or less extent by means of the polarimeter. It was shown that once the operator became acquainted with the colours and the working of the apparatus, it was a simple matter to get concordant results. The great detriment of the apparatus, one which the lecturer feared would prevent it finding a place on every pharmacist's counter, was its great expense. In this connection the lecturer directed attention to an apparatus, which was not very expensive, made by Messrs. Philip. Harris and Co., Birmingham, to whom, as well as to Messrs. Southall Bros. and Barclay, he expressed his indebtedness for the loan of apparatus to illustrate his remarks.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting held on Wednesday, March 8, Mr. G. H. C. Rowland, President, in the chair, an address was delivered by Mr. George Senter on

Experimental Illustrations of Some Scientific Theories.

Mr. Senter explained the theories as to the properties and motions of atoms and molecules, and illustrated and explained the phenomenon of vortex rings by a simple experiment in which two ½ oz earthenware pots, the one containing a little strong liquid ammonia and the other a little hydrochloric acid, were placed inside one of the ordinary pasteboard boxes in which a gross of ⅝ test tubes is sent out. The box is set on its end and a circular hole the size of a penny is cut in the bottom of it. After the ammonia and acid have been put into the pots the lid is put on. The box then becomes filled with a very dense white smoke, and by tapping smartly on the lid very pretty vortex rings fly out from the circular hole in rapid succession. He then explained the theory of sound waves, which he illustrated by means of the manometric flame apparatus, showing the fundamental note and the variants which give the distinctive sound of the different vowels. Light waves were next explained, and their distinction from sound waves pointed out. A clock placed in the receiver of an air-pump gradually ceased to be heard ticking as the receiver was exhausted, showing that the medium by which sound was propagated, namely, air, was being removed. But the clock remained perfectly visible, showing that light waves must be propagated by some other medium, namely the hypothetical body called ether. As an interesting application of the reflection of light waves, he exhibited and explained the construction of a designer's kaleidoscope, in which, by means of three mirrors fixed at an angle of sixty degrees, a practically indefinite series of exquisitely beautiful and symmetrical patterns were produced by rotation of the apparatus from several pieces of broken coloured glass and minute tubes containing coloured liquids, which constantly changed their position. He then explained the wave motions of the ether, which were associated with electrical phenomena. By means of a hand dynamo he showed how muscular energy could be readily transformed into electric motive force sufficient to light up four incandescent electric lamps arranged in series, and explained the various plans for the transformation and transmission of energy from such natural sources as Niagara Falls. A simple illustration of the arc electric light was given by two ordinary lead pencils pointed at one end in the usual way. An incision on one side as far as the lead core was made near the other end of each, and round this copper wires were bound. The wire from one pencil was attached to one terminal of the ordinary corporation electric supply, and the wire from the other pencil to the other terminal. On bringing the points of the pencils together, a perfect arc light was produced. He then exhibited in operation and fully explained the apparatus used in Marconi's system of wireless telegraphy, by which messages had been successfully transmitted through space for a distance of thirty-three miles.

On the motion of the Chairman, a cordial vote of thanks was awarded to Mr. Senter for his exceedingly interesting lecture, and the meeting then closed.

NEWCASTLE-ON-TYNE DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held on Wednesday, March 8, at Newcastle-on-Tyne, when Mr. T. Maltby Clague presided over a fair attendance of members.

After a discussion, which arose out of the circular from the Federation of Local Pharmaceutical Associations, the Secretary was authorised to forward the following resolution to the Council of the Pharmaceutical Society:—

> That as solution of ammonia is often sold by grocers and other unqualified persons, it would be safer for the public, considering its corrosive nature, if the same was included in the list of poisons.

Mr. F. R. Dudderidge, pharmaceutical chemist, then read a paper on

Liquor Bismuthi et Ammonii Citratis.

After referring to the preparation of the 1867 and 1885 Pharmacopœias, he then criticised the 1898 preparation, and drew attention to the loss of bismuth in washing the precipitated citrate, owing to the inadequate quantity of potash carbonate used to neutralise excess of nitric acid. He also stated that in his opinion it would be better to estimate the bismuth as oxide rather than sulphide. Mr. Dudderidge also referred to the solubility of the freshly precipitated citrate and the behaviour of liquor bismuth when dispensed in various mixtures.

At the close of his paper Mr. Dudderidge was accorded a vote of thanks, proposed by Mr. Clague and seconded by Mr. Merson. In the discussion which followed,

Mr. J. Gibson, jun., Hexham, stated that he had found potassium citrate sometimes alkaline, and at other times slightly acid, and it was worth while examining this salt before using the same for liquor bismuth, to see that it was neutral. He also asked how it was that many of these preparations were liable to fungoid growths.

Mr. Gilderdale, after thanking Mr. Dudderidge for his interesting paper, said in his experience the chief danger which caused the fungoid development was in the solution of ammonia. He had examined and tried many samples, but very few indeed were pure enough to be used in making this preparation. He stated that if a pure ammonia was used they would not be likely to get a fungoid growth. Although the determination of bismuth as sulphide was practically near enough, he preferred the oxide method.

Mr. G. Merson agreed generally with previous speakers that the official process was not satisfactory. He preferred MacEwan's formula, but had found that after mixing the two solutions more ammonia was required to fully precipitate all the bismuth. He

did not think that pharmacists were bound to abide by the strict letter of the pharmacopœial directions, provided the finished products responded to the official standards. He found washing the precipitate a tedious process, it being almost impossible, working upon fairly large quantities, to get rid of the last traces of nitrate. He thought it would be an interesting exercise for anyone having the necessary spare time to see how many samples of liq. bismuth on the market were quite free from nitric contamination.

Mr. T. Maltby Clague expressed his conviction that the process of 1898 was not a step in the right direction. The amount of washing required rendered it impracticable in laboratory work ; it was true that small experimental batches could bo made with some approach to comfort, but when some gallons were required the washing was too tedious. With filter-paper or linen, washing could not be done much inside a week, and some preliminary elutriations were necessary. He advocated taking advantage of the general licence given as to variations in mode of making B.P. preparations, and obtaining a like result by other means.

Mr. Procror had demonstrated the fact that during the reign of the 1885 Pharmacopœia manufacturers sent out a liquor which gave evidence of nitrate. The 1885 liquor only needed an increase in the amount of ammonium citrate, so that a small amount of alkaline bicarbonate would not cause a precipitate when dispensed. He could not agree with the view that the liq. ammon. was the sole source of fungoid contamination. Aërial contamination was sufficient to cause trouble, but this might be minimised by a thorough cleansing of the shop bottle every time it came to be refilled from stock.

Mr. Dudderidge, in replying, stated that he favoured the suggestion that the solution of ammonia was often the cause of the fungoid development. The citrate of potassium used by him in his experiments was neutral.

The meeting then closed with an intimation from the Chairman to the effect that the annual dinner will take place on Wednesday evening, March 22, at 8 p.m. at the Hotel Métropole, Newcastle-on-Tyne. Tickets, 4s. each (wine exclusive), can be obtained from F. Gilderdale, Hon. Secretary, 19, Groat Market, Newcastle-on-Tyne.

BURNLEY AND DISTRICT CHEMISTS' ASSOCIATION.

The first annual dinner of this Association was held at the Bull Hotel, Burnley, on Tuesday evening. There was an attendance of about fifty, and a capital menu was arranged.

The President (Mr. J. A. Heaton, Burnley) proposed the usual loyal toast, after which

Mr. Ed. Evans, jun., J.P., submitted that of

The Burnley and District Chemists' Association.

In doing so he enlarged upon the good of such associations in promoting good feeling and fellowship. He gave it as his opinion that there was still a good future for the educated pharmacist. What was needed was a certain amount of protection, and he hoped they would achieve it. He congratulated the Burnley Society and wished it success.

Mr. Collins (Nelson) was the first to respond, and said that to support the Blackburn Association, who had taken the initiative, was a move in the right direction.

Mr. J. Brown (Secretary), whose name was also coupled with the toast, expressed the pleasure he felt at the attendance of such gentlemen as had come to their meeting. Unless those in the business joined hands and helped along the present agitation on their own behalf they would get nothing. He then went on to criticise a certain trade journal which had tried to cudgel Mr. Gifford. But he thought everyone would agree that Mr. Gifford had scored He thought that journal had turned ridicule upon itself, and there was no true sympathy with chemists expressed in its paragraphs. During the last week they had been honoured with the presence of their member of Parliament (the Hon. P. Stanhope) at the dinner of the tradesmen of the town. He (the speaker) had taken the opportunity to wait upon him, and point out to him the facts in regard to the matters affecting the chemists. What was said was that they should associate, deputate, federate, and every other "ate," and not stop there, but wait upon the Government and try to get them to take up a measure, or give it their support. If it were a tangible Bill the hon. member was sure, from the reasons before him, that it would be an unopposed measure or practically so. He concluded by referring to the result of only three months' work at Burnley, and expressed the opinion that Lancashire was entitled to a redistribution of seats on the Council. It should have more representatives.

Mr. Lomax (Darwen), in the absence of Mr. Coates, proposed the toast of

Pharmacy.

Mr. J. Rymer Young, whose name was coupled with the toast, said the pharmaceutical trade was distinctly depressed at the present time. They were beset with evils, but at the same time the successes were as many as the failures, and, anyway, competition was common to all callings. Pharmacists had nothing to say against legitimate competition, but they did protest against piracy, the distinctly illegitimate and reprehensible practice known as company pharmacy. A man who had served three or four years, and gone in for the mastery of his business, was distinctly handicapped when, in spite of his special qualification, he could be opposed by the most ignorant grocer, who could assume the name of chemist. Some amendment of the pharmacy law was necessary, but that rested in their own hands.

Mr. Gifford (Blackburn), in proposing the toast of

The Pharmaceutical Society,

urged that all members of the profession should do their duty in organising and consolidating the Society, the constitution of which was a type of what a professional organisation ought to be, and backed by its proper constituency, its power would be overwhelming against improper encroachment. It would simply have to bear in mind that its powers had been conferred for the protection of the public. During the year their Council had risen to a higher level, and been more truly dignified than at any previous time. It had clearly and unequivocally voiced the sentiment of the rank and file and of common sense. At the same time, he believed it would be better advised in adopting a more open attitude with the people it represents. In referring to the forces operating against chemists, he believed that the parasitical literature which had been so long tolerated had been a very grave and insidious evil. In conclusion, he said they all protested against the parasitic press, which usurped their good name, wore their clothes, and ate their bread.

Mr. Newsholme said they had succeeded in passing the Pharmacy Acts Amendment Act, 1898, but they had been agitating for that ever since he had been a member of Council—ten years. The Bill aimed at the consolidation of the chemists of the country. It was the beginning of better things. There was a great future for pharmacy, but it meant that they should work shoulder to shoulder, not only in supporting the Council, but in every member being connected with the Pharmaceutical Society. During the past few months a very great work had been done in the adoption of regulations for storage of poisons. That might seem a small thing, but in large establishments there was a great responsibility, and if the head were compelled to observe regulations, it would be an advantage. They had now got on the right side of the Privy Council, and might get a few other poisons, as well as carbolic acid, added to the Poison Schedule. In conclusion, he referred to the chemists having charge of the sale of medicines.

Dr. Symes said the Pharmaceutical Society as represented by its Council has in the past worked with a steady purpose in view, and if it has not done all that could be desired by the members of our body it has done much, very much, which has not impressed with its importance the minds of casual observers. For nearly sixty years it has been building up a structure, the object of which is the consolidation of the whole craft and the advancement of its substantial interests. It must, however, be borne in mind that the Society has not a free hand in all things which would enable it to do just as it pleases, but is controlled by various factors such as public interest, Acts of Parliament, and the Privy Council. For that reason—often lost sight of—there is, under the best possible conditions, a limit to what can be accomplished. But there is an old proverb, as true to-day as when first enunciated, that "unity is strength," and it largely depends on the strength brought to the Society by unity how far reasonable proposals for the betterment of our calling will receive Imperial sanction and become law. The Burnley and District Chemists' Association has my esteem, because one of its rules is that every member must be a member of

the Pharmaceutical Society. This very excellent requirement has not, I understand, in any way prejudiced your roll of members, which includes, with but one exception, every registered chemist in Burnley and district. The short Act which passed last year has rendered possible a very large increase in the membership of the Pharmaceutical Society, and already more than a thousand members have been elected this year, in addition to many student-associates. This, in turn, renders possible further legislation tending to the consummation of our ideal hopes and wishes, and at present we are in the preliminary phase of having offered suggestions for a Bill, which suggestions are still under the consideration of the Lord Chancellor. If we once get Government support to our proposals as a whole, pharmacy will receive a great impetus, and there will be abundant work for every association, and for many individuals throughout Great Britain. Organisation is the order of the day, and you will perhaps allow me to say that my ideal of organisation may be represented graphically by an ordinary wheel. The Pharmaceutical Society should be the hub ; the spokes represent lines of influence between it and the various provincial associations, and the tyre is representative of the federation of these associations constituting a symmetrical whole. Organise then, I say organise, but never lose entirely your individuality, never forget your personal responsibility and share of indebtedness to your calling. In this way we shall obtain the best possible results.

Other Toasts.

The Blackburn friends having to leave early, Mr. Holt and Councillor Critchley extended their thanks to the Burnley Association for the evening's hospitality.

Mr. J. A. Barlow, in submitting the toast of "The Medical Profession," said there was a natural affinity between chemists and medical men, though there seemed to be some jealousy at times. Burnley, he claimed, was a very healthy town, and if the infantile mortality could be kept down it would have an extremely low death-rate.

Dr. Mackenzie and Dr. Pullon, J.P., in response, expressed the idea that medical men should keep their own position, and prescribe, and the dispensing be left entirely in the hands of the chemists as men who were educated for that work. It would be far better for the public if it were so.

A vote of thanks was passed to the doctors on the motion of Mr. Brown.

Mr. Wilkinson submitted "The Visitors," and after the various responses, Councillor Shorrock proposed "The Federation of Local Pharmaceutical Associations" in a racy speech, to which Mr. R. C. Cowley responded.

Mr. Dodsley "toasted" The President, Mr. J. A. Heaton replying in a suitable manner.

Alderman Parkinson, replying to a vote of thanks, said that chemists should request Parliament to make an invoice a warranty without a written warranty being required. It would be a safeguard for retail dealers.

During the evening Mr. Langley was the source of vocal and ventriloquial entertainment.

BRISTOL PHARMACEUTICAL ASSOCIATION.

On Wednesday evening the members of the above Association held their annual banquet at the Royal Hotel, Clifton. The President, Mr. G. T. Turner, was in the chair.

The President in graceful terms gave "The Queen" and "The Prince and Princess of Wales and the Rest of the Royal Family." The President read letters of apology from Mr. Walter Hills, the President of the Pharmaceutical Society of Great Britain, Mr. Michael Carteighe, and the High Sheriff of Bristol.

Alderman Hancocke Walter gave

The Pharmaceutical Society of Great Britain.

He observed that the medical profession to which he belonged owed a great deal to that Society and to the care of individual chemists. He found that the Society was founded in 1841 by Jacob Bell—a man whose name was still revered as that of one of the pioneers of modern pharmacy—and others. It received its Charter in 1843, and from that it appeared that its founders had in view scientific research and benevolent action, which the history of the Society had seen realised. In 1852 the first Pharmacy Act was passed, which he believed was entirely permissive. In 1868 came compulsion as to registration. That Act contemplated nothing more nor less than men of efficiency, and to his mind it was the pioneer of what was now known as technical education. If a man could come up to the intentions of that Act he must be thoroughly possessed of technical knowledge. Its value to the medical profession was very great. The fairly exact manner in which disease could be attacked was due to some extent, if not to a considerable extent, to the improvements in pharmacy in the past fifty years. If he might go back two hundred years he would quote the case of the fortunate—or unfortunate—man in London who in one day received no less than nineteen potions or plasters, the bill for which amounted to £3 1s. In five days he incurred a bill of £17 2s. 10d. Picture to themselves the value of such an account in these days ! Why, they would all be rolling in carriages or swimming in champagne. He very much feared that the art of prescribing was in considerable jeopardy of extinction by the penny-in-the-slot system of elegant pharmacy, as it had been called. While it had its advantages it had its drawbacks, and tended to cripple the abilities both of the prescriber and the dispenser, and to reduce the latter to the level of an automatic machine. There was an art in prescribing, and he did fear that it would become lost if things went on as at present. Then the ease with which the public could get hold of potent drugs notwithstanding the Pharmacy Act was a grave and insidious danger. It was quite easy for persons to walk into a chemist's shop and obtain drugs which those who knew anything about them handled with a considerable amount of hesitancy and some fear. The reckless and wholesale manner in which the community dosed themselves was a real danger. He would like to refer to another system, and that was the foisting of samples upon the prescriber. It was getting to be an unmitigated nuisance. A doctor could not take two or three pills to a patient and say, "I've got a sample of pills here ; just take them." He was puzzled to know what to do with the samples. If he threw them down the drains, they would be choked. If he put them in his garden they killed all his plants, and if he put them in the fire there was a danger of an explosion.

Mr. S. R. Atkins responded to the toast. After paying a compliment to the work of Mr. Carteighe—whose absence he regretted, together with that of the President—he observed that the Society was a Victorian product, and he might say a victorious product. The whole thing, inception and growth, had been attained within his own recollection and almost within his membership. It had schools, laboratories, a museum that was unique, and a growingly fine library. Then there was a Benefit Fund, upon the Committee of which he had been for about twenty-five years. No work of his life had given him greater satisfaction and thankfulness than his share in the administration of charity to genteel poverty. In the last year £708 was given in casual grants, and £2082 to their annuitants. The Society had had recent legislation of a very important nature. Without knowing precisely what the views of the Bristol Association were, he would say that the tendency of all their late legislation had been towards "the open door," of which they had heard so much elsewhere—the incorporation of all the members of the craft ; and he was glad to be able to tell them that since January hundreds of men had entered that open door. This was very gratifying to those who had worked for years through periods of depression and supineness. He was afraid that the dealing daily in the minute had made some of them parochial in their minds, and what the Society had to do was to call men out and give them wider interests. With regard to the suggestions which the Society had made to the Lord Chancellor, they were not a Bill—only draft suggestions for insertion in a Bill. In concluding, Mr. Atkins referred in eulogistic terms to the work of the late Mr. Stoddart, the late Mr. Schacht, and the late Mr. Giles.

Mr. Atkins next submitted

The Medical Profession,

and referred to the improved relations between pharmacists and the medical profession. There was a more perfect mutual respect for each other's profession. The delimitation of territory was more fully respected, and there was less poaching than there used to be years ago, and the whole influence of the Society was towards the maintenance of that respect. The pharmacists, however, claimed to have a co-ordinate position by Statute, and he believed that the medical profession were disposed to concede them that position.

Dr. Shingleton-Smith acknowledged the toast, and expressed

his sense of the debt which his profession owed to the pharmacists, and he asked them to believe that now things—outside the Pharmacopœia—were not ordered out of mere whim.

Mr. B. Allen gave "The City and Trade of Bristol," and Mr. J. R. Bennett, a member of the Town Council, responded.

Mr. B. John (Bath) proposed

The Bristol Pharmaceutical Association.

He wished all prosperity to the proposal of the Association to extend its influence to Bath. He believed that local associations could do much to promote education, as the Bristol Association had done, and they could do much to promote the interests of their common calling. It was possible to waste too much time in sighing over the good old times when they should be making the best use of the present. Whatever they might say of the past, he believed the future had better things for them. He hoped next year "The Bristol District" would be the name of the Association, and, of course, that would include Bath, the queen city of the West.

Mr. B. Keen, who was greeted with "He's a jolly good fellow," acknowledged the toast, and dwelt upon the need for local associations. Some justification for the existence of the Bristol Association had occurred during the year. They had pressed upon members of Parliament their opinions of proposed legislation, and what they and other associations pressed for had been obtained. Still, they were not satisfied, and they contended that what one unqualified person could not do, a corporation of unqualified men should not. They intended to fight for that principle, and he believed that in the end they would win. It had occurred to them in Bristol to broaden the basis of the Association, and include Bath, Clevedon, and Weston-super-Mare, in which places they might hold meetings.

Mr. Chandler gave "Our Visitors," to which Mr. Vigis (Bath) replied.—Several songs were given during the evening.

PROCEEDINGS UNDER THE PHARMACY ACT.

SALE OF LAUDANUM BY AN APPRENTICE.

Pharmaceutical Society *v.* G. W. Frow.

At Louth County Court on Thursday, March 9, before his Honour Judge Shortt, the Council of the Pharmaceutical Society of Great Britain sued G. W. Frow, apprentice to Mr. Cheetham, chemist, Louth, for two penalties for selling poison, contrary to the provisions of the Pharmacy Act, 1868.

Mr. Barker, instructed by Messrs. Flux, Thompson and Flux, appeared for the plaintiffs; the defendant appeared in person.

Mr. Barker said the defendant had signed a confession admitting the claim and had agreed to pay by instalments of 5*s.* per month, but in consequence of the defendant being an infant the Registrar had declined to enter judgment. He submitted that signing an admission was not an appearance in the action, and the appointment of a guardian was not necessary, and the plaintiffs were entitled to judgment.

His Honour: I am of opinion that to sign a confession is appearing in the action, and as defendant is an infant he could only appear by guardian.

Mr. Baker: I submit that the rule referred to, while it applies to an infant plaintiff, it does not to an infant defendant.

His Honour: An infant cannot confess unless he appears, and he must appear by guardian. Then I would accept his confession.

The defendant on being asked if there was anyone in court he wished to act as guardian, said his father was in court.

Mr. Frow said he was willing to act as his son's guardian.

His Honour: Your son has confessed to owing this money, and is willing to pay a sum of 5*s.* per month.

Mr. Frow: Yes.

Mr. Barker: May I ask for judgment on that?

His Honour entered judgment for the two penalties and costs in accordance with the confession.

Mr. Frow: He has nothing to pay with.

His Honour: Well, if he does not pay, the plaintiffs will take out a judgment summons. They will come before me, and they will have to prove that he is able to pay the money. If they do not prove that, they will not succeed.

Mr. Frow: He has no money.

His Honour: If he has no money, they will not be able to enforce their judgment against him.

NOTICES TO CORRESPONDENTS.

All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and not in any case to individuals supposed to be connected with the Editorial Staff; no responsibility can be accepted unless this rule be observed. Communications for the Current Week's Journal should reach the Office not later than Wednesday, but news can be Received by Telegraph until 4 p.m. on Thursday.

Advertisements and Orders for copies of the 'Pharmaceutical Journal' must be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C. Cheques and money orders should be made payable to "Street Brothers.

Articles and Reports sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

LETTERS TO THE EDITOR.

The Sale of Carbolic Acid.

Sir,—The reference in the daily papers to Mr. Collings' reply to Dr. Farquharson with regard to the sale of carbolic acid, prompts me to give publicity to an opinion which I have held for some time past—that another attempt should be made to induce the Privy Council to consent to adding to the Poison Schedule "carbolic acid, unless reduced to a powdery condition by a mixture with some absorbent material." I think the suggestion put in this form would at once meet the requirements of public safety and public convenience. The accidents which occur with this acid all arise through its being in the liquid state, and mostly happen in the handling of the carbolic acid by the poor and illiterate. If the acid were mixed with sawdust or ground peat it would be available for all disinfecting purposes, and could be sold to the poor in penny packets with caution labels, without the cost of a bottle, and the sale of the acid in its liquid state should be restricted to the pharmacists, who would see to the adoption of the further precautions of supplying it only in corrugated bottles with the poison label.

Bradford-on-Avon, March 14, 1899. Barnard S. Proctor.

The Comparative Strength of Solutions of Strychnine Hydrochloride, 1898 and 1885 B.P.

Sir,—Mr. Squire, in his hurry in going to press with his letter on the above subject has made the reverse mistake ($\frac{1}{4}$) which he did when he "hurried" to press with his 'Companion' ($\frac{1}{6}$). I proved some time ago that the new solution was four-fifths the strength of the old in strychnine value, and a very simple sum, $1-\frac{4}{5}=\frac{1}{5}$, determines the weakness of new to old in the same volume of each. Mr. Squire can hardly wish to be taken seriously when he says ". . . 4 minims of a solution diluted to 5, it is one-quarter weaker not a fifth, etc." If he had defined his "it," he would have found that it must refer to the volume of the new diluted solution (5), which is, of course, one-fifth weaker than the same volume (5) of the old. To further illustrate this point—100 minims of liquor strychninæ hydrochloridi (B.P., 1885) contain about 0 925 grain alkaloid, while the same volume of the new solution (B.P., 1898) contains about 0·740 grain, so that the difference in strychnine value in the same volume—0·185 grain—is one-fifth part less alkaloid in 1898 than in 1885; consequently the new is one-fifth weaker than the old. Any comparison as to the strength of solutions must refer to equal volumes of the solutions compared. Mr. Squire will pardon me if I say that the "inaccuracy" and "discrepancy" on this subject are to be found in his letter and 'Companion,' not in any note or letter I have published regarding it. If Mr. Squire had read my note on this subject (*P.J.*, June 26, 1898) more carefully, he would have seen that I calculated on the B.P. formula, viz., two molecules of water, not one and a half, as he says in his letter. The latter is inadmissible. While I am on this subject I may be allowed to show that the discussion on the constitution of strychnine hydrochloride by Mr. Dott and Dr. Martindale does not affect

my former conclusion as to the comparative strength of solution of strychnine hydrochloride, B.P., 1898 with that of 1885.

STRYCHNINE HYDROCHLORIDE: ITS ALKALOIDAL VALUE.

Percentage loss of Moisture at 130° C.	Formula.	Strychnine value of New compared with Old as ONE in same Volume.	Practically Minims new Sol. Equal to Old.
8·85	$B,HCl,2H_2O$.	0·806	5 = 4
8·18	$(B,HCl)_6\ 11H_2O$.	0·811	5 = 4
8·04	$(B,HCl)_5\ 9H_2O$.	0·813	5 = 4
7·84	$(B,HCl)_4\ 7H_2O$.	0·814	11 = 9
7·49	$(B,HCl)_3\ 5H_2O$.	0·818	11 = 9
6·79	$(B,HCl)_2\ 3H_2O$.	0·824	11 = 9

0·800 represents exactly $\frac{4}{5}$, 0·817, $\frac{9}{11}$, and 0·83, $\frac{5}{6}$, the strength of the old solution. The authorities quoted are agreed that the percentage loss of some commercial samples subjected to 130° C., not 100° C. *vide* B.P., is equal to a salt having a constitution between $(B,HCl)_4,7H_2O$ and $B,HCl,2H_2O$. A salt which loses 6·8 is clearly inadmissible, as the B.P. defines 7·3 to 8·8 as the loss, so that one and a-half is excluded. The lowest, 7·3, is almost $1\frac{1}{3}$ H_2O. The average loss of moisture of salts from which I have prepared solution of strychnine hydrochlocide, B.P., 1898, has been 8·25 per cent., so that I can confidently reaffirm my former conclusions, viz., that the new solution is practically four-fifths the strength of the old, one-fifth weaker, and that 5 minims are equal to 4 of the old B.P.

Edinburgh, March 13, 1899. GEORGE LUNAN.

THE SUGGESTIONS FOR A DRAFT PHARMACY BILL.

Sir,—I have read with much interest the arguments of your correspondents on the various issues involved, but after much thought on the matter I personally have arrived at the following conclusions: that first of all the trade must agree to the entire abolition of branch shops, and recognise the principle "one pharmacist one pharmacy"; then as educated men endeavour to divest pharmacy of its quackery, by doing all we can to uproot the patent medicine trade, the root of all the evil. Does it not seem ridiculous for educated men to write such stuff of their medicines as made from drugs or herbs only known to the proprietors; or made by a process only known to the maker? Surely it is time to divest pharmacy of such rubbish, and in speaking on this subject it has always been a source of regret to me that some of our well-known wholesale firms and pharmacy leaders should have adopted such tactics with articles such as cod-liver and castor oils. I feel sure that did the trade begin by putting its house in order first, we should have no fear but that legislation would be comparatively easy.

Woodbridge, Suffolk, March 14, 1899. ALICK STEPHEN BETTS.
Local Secretary.

STRENGTH OF SYRUP OF CODEINE B.P.

Sir,—I am much obliged to Mr. Dunlop for the correction on page 233 of the 'Companion,' line 34, which should read: "It is 50 per cent. stronger than the syrup described in previous editions of the 'Companion.'" A correction has also been sent to me from a pharmacist at Geneva, page 263, line 43; the printer's error "1 in 18" should obviously read "1 in 8." This latter correction has been made in the copies which have been issued lately.

London, March 14, 1899. P. W. SQUIRE.

SECRET COMMISSIONS.

Sir,—I am indeed glad to see in your "Annotations" this week the effort which is being made by the London Chamber of Commerce to put a stop to the practice—which for years has been so common—of allowing secret commissions. I see it stated that the commission given to medical men by some chemists reaches 25 to 50 per cent. I was not aware that it went so high, although I know some chemists who are generous enough to throw in a Pharmacopœia, a few dozen cakes of soap, and a box of cigars now and then. I have all along discouraged the practice, and on more than one occasion have had complaints from customers of their medicines having been ordered elsewhere. The remedy I have suggested to them has been to get the prescription written by the doctor in the house and send for it themselves. If that is not always practicable they should inform their doctor who their chemist is, and in that case I do not think that even the 50 per cent. men would have the audacity to place them elsewhere.

March 11, 1899. NIGEL (175/26).

ANSWERS TO QUERIES.

POISON REGULATIONS.—They only apply to poisons sold or kept in open shop, not to dispensaries where medicines are distributed gratis, and in such cases there is no corresponding provision for public safety. [*Reply to* M. R. H.—25/1.]

PHARMACY IN QUEENSLAND.—You will not be required to pass any further examination, but it will be necessary for you to produce your certificate and pay a fee to secure registration in the Colony. [*Reply to* W. M. B.—25/2.]

STUDY OF FRENCH.—Amongst the best introductory books are Dent's 'First and Second French Books' (London: J. M. Dent and Co. Price 1*s.* 6*d.* each net). A number of capital reading books are published in Heath's "Modern Language Series." Write to Isbister and Co., 15, Tavistock Street, Covent Garden, London, for a list. [*Reply to* E. A. N.—24/22.]

HAIR-WASH FOR CHILDREN.—If you merely require a cleansing wash the following will suit you. Soft soap, 2 ounces; alcohol, 90 per cent., 2 ounces; potassium carbonate, 2 drachms; oil of myrcia acris, 10 minims; distilled water to 1 pint. If you require a wash to kill pediculi, macerate 1 ounce of crushed stavesacre seeds in acetic acid, 1½ ounce, and water, 4 ounces, and eau de Cologne 1 ounce, for three days. Strain and add a decoction of quassia, 1 ounce, in water, 5 ounces. Let strain and filter bright, make up to 12 fluid ounces. Label poison. [*Reply to* ROSE.—24/33.]

VASELINE COLD CREAM.—Deiterich's formula for this is: Spermaceti, 4½ troy ounces; white wax, 4½ troy ounces; white vaseline, 12 troy ounces; oil of sweet almonds, 3 fl. ounces; distilled water, 12½ fl. ounces.; borax, 288 grains; coumarin, 1½ grains; otto, 28 grains; bergamot oil, 28 grains; rose geranium oil, 4 drops; orris oil, 2 drops; tincture of civet (1:10), 10 drops. Dissolve the borax in the water. Melt the fats, and pour them into a warm mortar; gradually add the borax solution; rub thoroughly, until the mixture cools to the consistence of cream; add the perfumes, set aside for two hours, then again triturate thoroughly. Another formula with lanoline is: White vaseline, 14 ounces; hard paraffin, 1 ounce; lanoline, 4 ounces; water, 6 ounces; otto of rose, 6 minims; vanillin, 4 grains; alcohol (90 per cent), 3 drachms. Melt and mix as described above. When cold add the perfumes dissolved in the spirit and pot off at once.

[*Reply to* ROSE.—24/33.]

DISPENSING PROBLEM AND NOTE.

COMPOUND CREOSOTE PILLS.

Sir,—Will you kindly explain the best way of dispensing pills to the accompanying formula so as to make them about the size of an ordinary 5-grain pill.

℞ Creosoti .... ♏ i.
Iodoformi .... gr. i.
Butyl Chloral Hydrat. .... grs. ii.
Ft. pil. i.

I have tried making the creosote up as per "Martindale" and adding the powders, but with disastrous results; a soft mass being produced not much thicker than treacle. F. W.—(24/21).

Note.—This cannot be dispensed as one pill without making it unduly large. The best way would be to make two pills of these ingredients, and let two be taken for a dose. By adopting a modification of the formula for creosote pills given in the *Pharmaceutical Journal* (see *ante*, p. 90), good results may be obtained, remembering that for chemical substances like iodoform and butyl chloral hydrate a little powdered gum and moisture are required. Proceed as follows: weigh out the ingredients for twelve pills, add three grains of a mixture of acacia and tragacanth in powder, equal parts, five or six drops of water, and enough powdered liquorice to make the mass weigh ninety grains. Divide into twenty-four pills. You will, of course, see that your creosote is that of the current Pharmacopœia. Pills so made will keep their shape and be free from soap—an undesirable addition, on account of its definite therapeutic action.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Analysis of a Genus. Dr. A. W. Rowe has endeavoured to show, by means of rigid zonal collecting on a large scale from the White Chalk of the Southern and South-eastern coast-sections of England, that the genus *Micraster* is one and the same form, gradually evolving from the more simple to the more complex. In doing this, he also contends that the genus may be divided into definite groups, each or several of which are absolutely diagnostic of the various Chalk zones, as defined by Barrois. The conclusions arrived at point to the regular and continuous deposition of the White Chalk, and strikingly confirm the general accuracy of Barrois's zoning. The paper gives a minute comparison and description of the genus *Micraster* from a general point of view, and from that of a group, and deals particularly with the essential details of the test of the especial groups characteristic of each zone. It is claimed that, so far as *Micraster* is concerned, each zone is marked by a definite facies of essential characters of the test, which are purely horizonal, and that all species and varieties, however divergent they may apparently be, occurring at any given horizon, are stamped with the impress of these marked horizonal features. It is proved that, while in an isolated instance, one may be unable to decide the horizon in the White Chalk whence a specimen of *Micraster* was derived, in the ninety-nine other cases the diagnostic features described by him point unerringly to the exact horizon, and thus afford a valuable aid to stratigraphical geology, especially as the essential zonal features of the test are easily made out in the field.—*Proc. Geol. Soc.*, March, 1899.

Analysis of Commercial Veratrine. George B. Frankforter and Levi B. Pease have undertaken the examination of commercial veratrine, since three distinct substances are known as veratrine. The experiments show that the predominant base of commercial samples is the cevadine of Wright and Ahrens, having the formula $C_{32}H_{49}NO_9$, soluble in ether. Four brands of recent preparation were taken, and the evidence that the ether-soluble constituent is the cevadine of Wright is that in each case it melted at 147° or 148° C. Moreover, on analysis, the proportions of carbon and hydrogen very closely approximate to those calculated for the formula $C_{32}H_{49}NO_9$. The portions insoluble in ether show a wide range of melting points—184° to 285° C.—and are under investigation.—*Amer. Journ. Pharm.*, 71, 130.

Purity of Lithium Citrate. Lyman F. Kebler's investigation of lithium citrate for the Research Committee in connection with the revision of the U.S. Pharmacopœia supports the choice made of the hydrous salt in the British Pharmacopœia, 1898, and the solubility there given. The author contends, in opposition to the B.P., that the hydrous salt is not deliquescent. The determination of the amount of pure salt present may be made by the following method. To about 0·5 gramme of the anhydrous powdered salt in a porcelain capsule, add, in drops, from a pipette, about 1 C.c. of concentrated sulphuric acid. First place on a water-bath for a few minutes, in order to complete the reaction; then incinerate, applying the flame gradually at first. One gramme of the anhydrous salt yields 0·7861 gramme of lithium sulphate; the amount of lithium sulphate multiplied by 1·272 gives the equivalent of lithium citrate. The experiments show that the commercial salts examined are slightly beyond the B.P. requirements (98·5 per cent.) as regards purity, ranging from 98 60 to 99·05 per cent. The determination of the amount of water of crystallisation gives unexpected results. At 100° C. the loss of water corresponds approximately to three molecules of water of crystallisation out of the four that are present. The remainder of the water is not completely lost by drying at from 115° to 120° C. for eight hours.—*Amer. Journ. Pharm.*, 71, 137.

Classification of Fruits. Sig. L. Nicotra proposes a new classification of fruits, with some modifications of existing terms. He proposes the term "holocarp" for an entire fruit resulting from a number of carpels, the product of each carpel being a "mericarp." The "holocarp" may be an "apocarp" or a "syncarp," according to the degree of concrescence of the carpels, but the two pass insensibly the one into the other. According to the arrangement of the carpels in a spiral or in a whorl, a "holocarp" is a "helicocarp" or an "actinocarp"; and according to the position of the placentæ, is "pleurospermic" or "antispermic." The caryopsis differs but slightly from the achene. The follicle is probably a primordial carpological type, from which are derived, in various directions, the legume, the single-seeded indehiscent achene, the siliqua, and the various forms of capsule. —*Bull. Soc. Bot. Italiana*, 1898.

Origin and Significance of Spines. Charles E. Brookes has endeavoured to arrive at general conclusions relating to the origin and significance of spinosity from the study of plants and animals. He considers that spines, whether prickles, thorns or horns, represent a stage of evolution, a degree of differentiation in the organism, a ratio of its adaptability to the environment, a result of selective forces, and a measure of vital power. The spines of plants are referable to two main categories. The first is the restraint of environment causing the suppression of structures; thus, in desert or arid regions leaves and branches may be suppressed to form spines. The other category is intrinsic suppression of structures and functions, this includes those prickles of brambles and climbing plants that are not produced by suppression of stipules, leaves, etc. Spinosity is a limit to variation, since organs of various kinds are changed into spines, but spines are never changed into other organs. —*Amer. Journ. Science*, through *Bot. Gazette*, 27, 147.

Cellulose Enzymes. Dr. F. C. Newcombe has conducted a series of experiments on the solvent power of certain enzymes on cellulose. Extracts were prepared of the fungus *Aspergillus oryzæ* and of the seedlings of *Lupinus albus* and *Phœnix dactylifera*. An extract of the first mentioned, it will be remembered, is commercially known as taka-diastase. An extract of barley-malt was made for purposes of comparison. The enzyme from *Aspergillus oryzæ* attacks reserve cellulose with greater intensity than it attacks starch, the difference being even more marked in the case of extracts of the cotyledons of seedlings of *Lupinus albus* and of *Phœnix dactylifera*, though the latter differ slightly among themselves. The enzymes from *Lupinus albus* and *Phœnix dactylifera* act on starch so feebly, and on reserve cellulose so strongly, that they are to be regarded as cytase rather than as diastase. Since the very dilute enzyme of *Hordeum vulgare*, as well as that of the other plants mentioned, attacks reserve cellulose, an enzyme solution need not be strong to act on cell walls. None of the five enzyme-extracts employed shows itself more suited than the other extracts for the solution of any one kind of reserve cellulose used in the investigation.—*Annals of Botany*, 13, 49.

GUMMI EUCALYPTI ROSTRATÆ.

BY W. J. BROWNSCOMBE,
Richmond, Victoria.

In the report of the Pharmacopœia Committee on the proposed Indian and Colonial Addendum to the British Pharmacopœia, 1898, attention is drawn among other items to the recommendation of the Victorian authorities with reference to eucalyptus gum, and information is desired, first, as to the special advantage of limiting this to the product of *Eucalyptus rostrata*, second, as to the desirability of including gummi eucalypti rostratæ in the Addendum under present circumstances, and third, as to whether it would be satisfactory if the preparations mentioned were made with the gum as defined in the B.P., 1898.

Having been associated with the late Mr. Joseph Bosisto, for the past twenty-five years in the investigation of the eucalyptus and other indigenous vegetation of these colonies, I may claim to speak with a little acquaintance of the subject, and therefore a few remarks on these queries may not be without interest at the present time.

In reply to the first question, I would say the advantage of limiting the eucalyptus gum to the product of *Eucalyptus rostrata* is exactly analogous to limiting kino to the *Pterocarpus marsupium*, and catechu to that of *Uncaria gambir*; an article of as nearly as possible uniform character and therapeutic action is thereby secured, an object, where the drug is for internal administration particularly, of primary importance, and more likely to be attained by limiting the product to one particular species, if fairly abundant, as in this case, than by embracing the products of half-a-dozen or more different species, varying as they do, in the case of the myrtaceous kinos, in the proportion of their leading constituents much as they do with respect to their volatile oils.

Mr. J. H. Maiden, the talented Government Botanist of New South Wales, in a communication to the *Journ. Soc. Chem. Industry*, some years since, gave the results of the analysis of numerous eucalypts of that colony, which showed a variation of from 12·86 per cent. tannic acid in *E. stellulata*, to 57·76 per cent. in *E. amygdalina* var.; and 27·64 per cent. extract in the former to 95·04 per cent. in the latter, both members of his "Ruby Group" of eucalyptus kinos; and from 35·1 per cent. to 41·9 per cent. tannic acid; and 97·56 to 67·0 per cent. respectively in two members of his "Gummy Group," figures which show very pertinently the desirability of adhering, if possible, to a particular species, rather than the adoption of a number of undefined ones, or even of a particular class or group.

I may say that, in common with the late Mr. Bosisto, I hold the opinion that the kino of the *E. rostrata* is superior as a therapeutic agent to any of the kinos of the other eucalypts, and, moreover, it is simply its own intrinsic merit that has won it the place it holds in medical estimation to-day, having entirely replaced the old-time insoluble Botany Bay kino, and in a great measure even the East Indian kino itself. There are other eucalyptus kinos similar in appearance and solubility, yet which are not exactly the same in composition or physiological action, some possessing bitter, others harsh astringent properties. The late Dr. Morell Mackenzie, the eminent specialist in throat diseases, held the product of *E. rostrata* in high esteem for its peculiar astringent action on the mucous membrane, and valued it above kino or catechu in his practice.

Exception has been taken to the term gum as applied to this product, but, as it is almost universally known as "red gum," or "eucalyptus red gum," under which names large quantities have been sold for many years, I do not think it wise or advisable to alter the name, which is so characteristic of the drug. It may not be strictly and chemically correct, but the same could be urged with much more reason against the still common use of the term as applied to several true resins, many more gum-resins, tragacanth, etc. It has been described in Squire's 'Companion' and Martindale's 'Extra Pharmacopœia' for many years as gummi rubrum, "red gum," and I think if the Pharmacopœia Committee had adopted this term instead of gummi eucalypti, "eucalyptus gum," it would have been more descriptive and appropriate. Gum. eucalypti rostratæ doubtless would be more accurate of the bulk of what is in use at the present time, and has been for some years past.

Numerous suggestions have been made in the Colonies to more exactly describe it under the term "eucalyptus kino." My own impression, however, is that as kino is already the official product of *Pterocarpus*, a second drug under the same name would be confusing. I would therefore adhere to the Latinised form of the name under which it is already widely known in medical practice, as well as in the drug trade.

Mr. Maiden and the technological authorities in Sydney suggest the inclusion of various other species than that of *E. rostrata*, probably not noticing the fact that, as already described in the Pharmacopœia, the product of any species answering the tests of solubility, colour, etc., is admissible. I would here suggest the alteration of the solubility from 80 to 90 per cent., as at present, to 90 to 95 per cent. in cold water or alcohol. Seeing that red gum (*E. rostrata*) is soluble from 95 to 98 per cent. in the cold, the margin of 10 to 20 per cent. leaves too much scope for adulteration with inferior kinos. I would also suggest the adoption of an astringency test, the same as in kino and catechu; 27 to 28 parts of isinglass should precipitate all the astringent matter in 100 parts of red gum.

Personally I do not think that any of the eucalyptus kinos other than that of *E. rostrata* are likely to find a place in drug circles or many years to come, not, at least, while the red gum forests of the Colonies are available for the collection of this article, so that the retention of the words "and other species of eucalyptus," while it leaves open the admission of the kinos of other species than that of *E. rostrata*, would not in reality operate, unless in case of partial failure of the true red gum, probably a very remote contingency and yet not at all an impossible one, owing to the difficulties incident to its collection.

The second query has reference to the advisability of including the gum. eucalypti rostratæ in the Addendum under present circumstances. Seeing that the product of *E. rostrata* is already included in the Pharmacopœia under the heading "Gummi Eucalypti," I do not see any reason for including it a second time under another in the Addendum. It is, perhaps, unfortunate that it was not described under a more descriptive name in the text, but rather than adopt the vague term gum. eucalpyti it would be preferable to add a specific designation. The term *Eucalyptus rostrata* would cover the present description in the B.P. in part, the term *Eucalyptus rubrum* would cover the whole.

The answer to the query follows as a matter of course. The proposed preparations would be more satisfactory if prepared with the product of a definite species rather than with the products of a number of undefined ones, but providing an astringency test were incorporated into the text and the solubility raised as suggested, the character of the colonial preparations would be maintained, even if the specific name *E. rostrata* were not. In any case, it would be desirable in a national standard work of reference and text-book of this character that uniformity of nomenclature and accuracy of description should prevail both in the text and Addendum.

PHARMACEUTICAL POLITICS—THE QUALIFYING DEGREE.

BY B. S. PROCTOR.

One star differeth from another star in glory, and no act of uniformity can make it otherwise. In pharmacy we have kings and princes, earls and lords, knights and squires—but the greatest of these is Squire. No one stops to ask what sort of examination he passed, or whether he passed any. We know him by his 'Companions,' and so it always will be with men of note. As the tree is judged by its fruit, so is a man by his works. But if we sifted the stars and took out all the dust, we should still find some waxing and some waning, probably none standing still. Their spectral lines would show whether they were advancing or receding, and again we should say one star differeth from another star in glory. When the hindermost is overtaken by swift-footed death, it is in mercy that his breath is taken away, and he is relieved from the race in which he is no longer able to run.

When a man gets too old for the contest the Bell ceases to ring, but his place is filled by the Hills. The world is kept fresh by the passing of the old and the advent of the infant, and if the pharmaceutical world can only be entered by crossing the sieve which lets the very small ones fall through, we have the chance of securing such an approach to uniformity as suffices for practical purposes. Some of the candidates for the passage of the sieve do their duty, others do the examiners. These latter are the falling stars; though they do not fall through at the time, they generally continue to go downwards forever after. Whether they fall in barren or stony places or are choked by weeds and thorns they cease to live as luminaries, and they die as dust. The work of the examiners should be to ensure that every man who is passed by them has such a coat of luminous paint as will stick, and prevent his being totally obscure during the term of his natural life. There is some sunshine in every man's life, and the fierce light that shines upon a pharmacist through the eyes of the drug-inspectors and analysts should keep alive the feeble phosphorescence of even those odd fishes who live in such stagnant waters that they scarcely trouble to read the special issues of the trade journals which are sent to every one on the Register. They look upon the angelic heights of pure pharmacy as upon the snow-clad summits of an alpine range tipped with the golden glory of a setting sun, while they, poor druggists, live in the shades of the valley below, hopelessly falling into the drudgery of dealing in dangerous dips, deadly disinfectants, and proprietary preparations, with a prescription to dispense three times a week just to fan the hope that keeps alive despair.

Now the permanence of the luminous paint depends upon how far it sinks into the man's constitution. It ought to penetrate, like necrosis, into his bones—a point which is not readily ascertained in examining a student who goes direct from the lecture-room to the examination hall—and the more the examination is of a scientific and theoretical character, the more likely is the luminous paint to shine at the time, but to grow dim rapidly in the dark, and get rubbed off by contact with business customs and competition. The right remedy is not to increase the altitude of the curriculum and the examination, but to ascertain how far the information has sunk in and how much it has influenced his constitution and habit. If by the use of X rays we could see that the phosphorescence came from within, the pharmacist's fate would be fortunate. Let us look forward to the qualifying examination being the Major and giving the title of Ph.C., but not going with more detail into the sciences of chemistry and botany than the Minor now does. Let it be required that an examination such as the Minor now is shall at once qualify for the assistant's position, and that the qualification for becoming the proprietor of a pharmacy shall be the passing of an examination not requiring more knowledge of theory, but requiring that the candidate shall bring a certificate of having been engaged in the practical work of dispensing and operative pharmacy under a qualified pharmacist for not less than two years after passing his Minor and just prior to his presenting himself for his Major. Then if the examiners find that he has retained so much of the schooling which passed him through his Minor, they may fairly trust that his knowledge is so much his own as not to desert him when required in the work of life. Thus the public safety would be cared for better than at present, and the men entering the calling would be better for this ripening period. Under present circumstances not many young men go direct from the Minor examination into trade, and of those who do so probably many find the disadvantage of not having a more extended experience.

I have no doubt most employers will confirm my observation that a Minor graduate who has had two or three years of practical work since his examination is more to be trusted than a Major graduate who has seen less of the common duties of life.

I do not think that the proposed alteration of pharmacy law will affect this question, as the examinations are determined by bye-laws to be agreed upon by the Council, the Privy Council, and the members at large. But I feel that the suggestions I make are important to be kept in mind, in case any modification is made during the process of hammering the crude suggestions into workable form.

We should not overlook the fact that in 1868 Parliament decided that the Minor of those days was severe enough to justify the holder being entrusted with the dealing in poisons; and in more recent times—perhaps, also, in the future, it may be considered that the Minor of the present day is more than is required to justify a man being entrusted with the dealing in poisonous substances. For dealing in poisons a little learning suffices for public safety, provided that little learning is combined with much prudence; but much learning and little prudence would be a source of danger. I do not wish to talk too much about the dangers of pharmacy and the need of public safety. To be always pushing this to the front and complaining of the competition of the stores is too much like one vote for the public and two for ourselves. The competition of the ignorant should never be complained of, and as to the public safety, that is the State's business, not ours. Our aim should be that whatever we advocate for our own benefit should accord with the public good; and when the State moves for the public safety we ought so to influence their action that our own benefit should also be promoted. There are two weak points in pharmaceutical organisation which should be amended as opportunity offers; the first is that when a man once gets on the Register of Chemists and Druggists, he does not necessarily keep up any connection with the organisation entrusted with the keeping of the Register. I think he ought to pay a small annual fee, be it only 1*s.* or 2*s.* 6*d.* a year, to cover the cost of keeping, correcting, and publishing the Register. The second point is that everyone on passing his examination should be presented with a copy of the Register and of the Calendar of the Society, as evidence to him of the state of pharmaceutical law up to that date; and every year, on paying his annual fee, he should have a copy of the additions to the Register during the previous twelve months, with a note of any additions to the poison schedules, or poison regulations, and any changes in the laws or bye-laws affecting him,

thus at least providing him the opportunity of observing any change in his responsibilities.

I think such should be regarded as one of the duties which the Society owes to its graduates, and a bond which should link the graduates with the Society, and keep them informed of the work the Society is carrying on for the general good. I would not like to load the proposed Bill with any additional difficulties—sufficient for the day are the obstacles thereof. But every step that is taken should reduce the number of obstacles between us and the goal to which it is desirable we should ultimately attain. A high-class examination is a good start in life, but every man will be ultimately judged by his works and his companions.

NOTE ON EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

BY F. H. ALCOCK AND JOHN KENDRICK.

In the preparation of this galenical the process has been extended with a view of getting a purer ammoniacum in it. It is now necessary to purify the ammoniacum with successive portions of boiling water and then evaporate the resulting emulsion to a "suitable consistence." Formerly the B.P. said that the ammoniacum was to be liquefied, a thing which could not be done on a water bath, and could not with safety be done with a naked flame. It could, however, be rendered plastic, and in this condition was available for admixture with the other ingredients.

It is our object to call attention to a specimen of the wretched samples of ammoniacum which are sold at the present time, and which this washing process reveals in a marked degree, and to show how very necessary such an alteration has become. In the *Pharmaceutical Journal*, on several occasions in the past few years, attention has been called to the purity of similar articles, notably guaiacum resin (F. L. Smith, *P.J.*, February 6, 1897), and benzoin (Mr. Dunlop, *P.J.*, August 14, 1897). The washing process referred to above has its origin, perhaps, in a paper by Mr. Gerrard, read before the Conference in 1874, but his process limits the supply of water (only 8 fl. oz. being used for 10 oz. of gum resin). He also recommended an addition of yellow wax.

The official process does not state how much water should be used, but presumably it is met by the phrase "*quantum sufficiat.*" We find that, with an experimental batch, using one-tenth B.P. quantities in grammes (32·8), nearly a litre was necessary to purify the gum resin, or rather to remove all the gum resin. The residue after the water treatment weighed 6·45 Gm., and from this we found that alcohol removed 1·45 Gm. of what appeared to be resin; the remaining 5 Gm. was then incinerated, and the ash weighed 4·045 Gm., and in this we found much débris, which could not well be ascribed to genuine ammoniacum, in fact, it was of a brown colour, and contained many small stones, having an average weight of 0·07 Gm.

Genuine ammoniacum on incineration, we find, leaves a white ash, strongly alkaline to litmus, and does not exceed 1 per cent.; the best sample in this respect, we found, that 2·506 grammes yielded 0·022 gramme of ash. It will be gathered from these results that a limit should be placed upon the amount of mineral matter (and perhaps also the minimum amount of resinous matter) which should be allowed in ammoniacum, as in the case of asafetida and other similar substances. These experiments have been several times repeated, and we are able to say with Mr. Gerrard that an addition of more "balsam of sulphur" is not only an advantage as a time-saver, but in the preparation of small quantities certainly a necessity.

HOW TO PREPARE FOR THE MINOR EXAMINATION.

BY RUBIDIUM.

(*Concluded from page 173.*)

Laboratory Work.

The next thing to be considered is the laboratory work, and here the utmost patience, perseverance, and attention to detail are required; yet in the department of practical chemistry a very haphazard method of procedure prevails in some schools of pharmacy. The work should most emphatically not consist of a number of disconnected experiments, the results of each to be "remembered"; rather it should be a series of operations, one step leading naturally on to the next. The laws of chemical reaction should be so well illustrated by the course of work, and their immutability so firmly fixed in the student's mind, that his reason and logical faculties, rather than his memory, are appealed to when a chemical problem is to be solved. If, for instance, he is asked, "Given such and such conditions, what will happen?" his first thought should be as to what in the nature of things is most likely to happen under such conditions, and when this is settled, his memory may be consulted as to the idiosyncrasies of the particular substances in question; for while phenomena must receive due attention, the general laws deduced from their consideration must be firmly impressed on the mind. It is not at all uncommon for a student to aim at "knowing the tests," while giving little or no attention to the chemistry of those tests. He knows, perhaps, that, on adding chlorine water to a mixture of starch mucilage and solution of potassium iodide, a blue colour is produced, but of the nature of this blue colour, and why it is formed under such circumstances he has very little idea. Unfortunately this matter needs insisting on, as the state of things just illustrated is deplorably common among pharmaceutical students. It is even possible for volumetric work to be done quite accurately, while no inkling of the facts at the back of the figures and calculations enters the operator's mind. This may seem incredible, but it is no fanciful supposition, it is a record of actual knowledge of such cases. Such partial and superficial knowledge is of little practical use, and it is small wonder to every one but themselves that such candidates are not considered by examiners fit to become chemists and druggists.

Practical Operations.

The candidate for the Minor is expected to have a practical acquaintance with the methods of preparing most of the substances included in the British Pharmacopœia, and therefore synthetical work will form an important part of the laboratory course; an intelligent appreciation of the details and difficulties of the preparation of substances familiar in pharmacy is thus obtained. This synthetical work is a most valuable means of acquiring a knowledge of the constitution of compounds themselves, while the analytical work supplements this by an acquaintance with their relations to each other and their behaviour under various conditions. The determination of the specific gravity of liquids and solids must receive its due share of attention; there are many little details of manipulation which are only mastered by practice, and as an operation of this nature is often included in the Minor examination paper it is well to be expert or time will be wasted; and it may be remarked here that the three hours allotted to practical chemistry in the examination do not allow for any waste of time. The operation of determining vapour density by Victor Meyer's method should also be carried out if possible, and in every case not only the method of calculation but the theory on which the calculation is based should be thoroughly understood.

The Laboratory Note-Book.

A laboratory note-book is, of course, a necessity, as all essential details of every operation should be recorded. This book, kept open on the bench, is in danger of becoming splashed and stained, and for this reason, as well as for others, it is advisable to transfer the entries to another book, which can be kept more neatly, and is then always ready for reference. Among the additional reasons for thus writing up the laboratory note-book is the fact that it is not always easy or possible at the time of an experiment, to decide which are the essential and which the unimportant details of the operation, so that it is best to take a note of everything and discriminate afterwards. In analysing powders or solutions it is best to record the results in tabular form, such, for example, as the following :—

Experiment.	Observation.	Inference.

The operations of quantitatively determining "the total alkaloids in cinchona bark, and in the tincture and extract of nux vomica, and the morphine in opium," must be carried out in the laboratory. This is all the work of that nature at present required by the Minor, but after next August the list is to be considerably added to and extended.

Pharmacy and Dispensing.

Let us consider now the laboratory work in pharmacy and dispensing. Here the student will be from the first on more or less familiar ground. He must remember, however, that "a little knowledge is a dangerous thing," and must be ready to give up the idea that the way in which he has been accustomed to doing things is the best possible way. It is often only with great reluctance that he gives up his favourite method of dispensing a mixture, "putting everything in and filling up," and he is inclined to resent the teacher's direction to weigh separately each of the half-dozen powders ordered. All this shows how very necessary it is that a good deal of time should be devoted to practice in dispensing during the period of study, and that instruction should be given both by lectures and by supervision in the laboratory. Here again the invaluable note-book must come into use; prescriptions given for laboratory dispensing are generally a little out of the common, and in most cases there is some special point to be noted; they should, therefore, always be copied, and any remarks on their peculiarities or the best method of procedure in dispensing should accompany them. These notes are often of great use long after the examination has been passed, for a well-chosen set of prescriptions includes typical ones of most classes, and a dispensing difficulty can often be cleared up by turning to the pages of one's laboratory note-book. The tabular form can frequently be made use of here with great advantage; emulsifying agents and pill excipients, for instance, can be tabulated somewhat as follows :—

Substance.	Emulsifying Agent.	Method.

or

Substance.	Excipient.	Remarks.

Incompatibles, Doses, and Prescription Reading.

Special attention must be given to the subject of incompatibles and to the importance of discriminating between a decomposition foreseen and intended by the prescriber and one involving changes not anticipated by him. For instance, when ferric chloride and ammonium acetate are prescribed together the decomposition is presumably intentional, but if liquor strychninæ and liquor arsenicalis are ordered in one mixture it is admissible to suppose that the unavoidable decomposition, involving liberation of the strychnine in a crystalline form, has been overlooked, and if the case occurred in actual practice this should be pointed out to the prescriber. Under the heading of pharmacy come all the operations involved in the preparation of galenicals, and the examination requires a practical knowledge of the processes and principles of the processes by which they are made. A knowledge of the proportion of active ingredient in certain official preparations is necessary, and a good way of acquiring this is to take one of the drugs in the list every day, and commit to memory the strengths of all its preparations; thus beginning with aconite, the first on the list, its preparations—liniment and tincture of aconite, aconitine, and aconitine ointment—are dealt with; the next day antimony and its preparations are taken, and each day all that has been previously learnt is gone over; thus the facts are so firmly fixed in the memory that they are never forgotten. Doses, too, may be learnt in the same way, and now that the official doses are so much more uniform than they were they do not require the expenditure of any great amount of time or labour. The consideration of doses leads on naturally to that of prescription reading; a good deal of practice is necessary to comply satisfactorily with the requirements of the schedule. It is an excellent plan to translate half a dozen prescriptions from English into Latin every week, and this should be combined with the reading in full Latin of as many ordinary prescriptions as possible. If this is done systematically all through the period of study, there will be no necessity for cramming just before the examination.

Final Preparation.

Let us suppose that the course of work sketched out has been gone through conscientiously and intelligently; what is to be done in the way of final preparation, in order that the ordeal of the examination may be faced with equanimity? For answer to that question we must once more turn to the note-books, which, of infinite value in the making, are no less useful now that they are complete. By their aid the whole of the "Minor" work may be revised in about a week; revised, not done, be it noted; for if it has not been mastered previously a week's application will be of no use. If the plan mentioned before, of underlining in the note-book the most important facts, has been followed, it is a matter of very little difficulty to refresh the memory as to all salient points in a very short time. The tabular arrangements, too, will be found particularly useful, condensed and classified information being just what is wanted for purposes of revision. After all the work has been thus revised it is a good plan to go carefully through the examination schedule, so as to be quite sure that nothing in it has been overlooked; this is sure to bring to light some few little points that need looking up, and a whole day should be reserved for the task. A knowledge of Schedule A of the Pharmacy Act, 1868, has, of course, been previously acquired, but the candidate must not forget that he is expected to describe minutely the conditions required upon the sale by retail of poisons; to write the proper entry; to state the conditions imposed on the sale of scheduled poisons by wholesale and for export, and to be familiar with the conditions imposed on the sale of arsenic by the Arsenic Act.

Cease Work in Good Time.

All revision and work of every kind for the examination should be finished at least one clear day before the practical examination. This day should be devoted to nothing more or less than complete recreation ; the particular form which this recreation will take will of course depend on the habits and tastes of the person concerned, but it should be something that will really interest him and prevent him from thinking about the examination, and preferably should keep him in the open air. Walking, boating, cycling, tennis, cricket—what you will, so long as it involves some physical exertion, and is absorbing enough to prevent thoughts of the morrow from creeping in. A student who has spent the day before his ordeal in this way has far more chance of doing justice to himself and his teachers in the examination room than one who has been poring over his books until the last moment. The one starts with all his faculties alert, and his brain fresh and rested ; the other is tired and jaded, and likely to be thrown off his balance by trifles. A certain amount of trepidation in entering an examination room is scarcely to be avoided, but there is no need to add to that the disadvantage of being harassed and weary. So far we have been considering the preparation for the Minor ; perhaps a few words in conclusion as to the examination itself may not be out of place. Some students hold curious ideas about examiners in general, and pharmaceutical examiners in particular ; one of these ideas being that those gentlemen look upon candidates as a kind of prey, and do their best to "plough" them. It is scarcely necessary to say that this is an entirely mistaken notion ; quite the contrary is the case, and the student who has done his work thoroughly and conscientiously has nothing to fear, but will come from the examination room feeling that he has been kindly and considerately, as well as justly, dealt with.

In the Examination Room.

Let us suppose that dispensing is the morning work for the candidate ; on entering the examination room, it is well to look into the drawers of apparatus and appliances, so as to lose no time in finding any article when it is wanted ; and to observe the arrangements of the bottles on the shelves. When the papers of prescriptions are given out the candidate should read through all that he is required to do, so as to use the time most advantageously ; for instance, if a mixture which involves making an infusion is one of the items, that should be dealt with at an early stage, because of the time required by the infusion ; or if pills are to be made and varnished, they should be finished off so as to allow time for the varnish to dry. If any of the weighings require the use of ounce or pound weights, the candidate must be on his guard against calculating that an ounce is equal to eight drachms. The pound avoirdupois is equal to 7000 grains, therefore one-sixteenth part of it must equal 437 5 grains, not 480. It seems as if there could be no mistake about this, and yet what a constant source of error it is ! The medicines when ready are to be carefully wrapped and directed, and the candidate should bear in mind the note in the schedule to the effect that "In awarding marks in this subject the time taken by the candidate in doing the work is taken into account."

The practical chemistry paper generally indicates the order in which the work is to be done, *i.e.*, whether that part requiring the use of a balance is to be done first or last ; the candidate must, of course, comply with these directions. In analysing the powder he should be careful to record the effect of *all* the reagents he uses, not merely noticing on his paper those that give a positive result ; the tabular form suggested for use in the laboratory note-book is a convenient one for using in the examination, as it enables the examiner to see almost at a glance what reagents have been applied, and what their effect has been, and it also shows that the candidate is careful and systematic in his work. The calculations required for the volumetric work should be shown in full, and all statements should be clear and concise, so as to give the examiner as little trouble as possible in going through the paper.

There is but little to be said about the *vivâ voce* examination, but it may perhaps be desirable to impress on the candidate to be sure that he understands the examiner's question before he attempts to answer it, and that in answering he should keep to the point. Possibly he has stores of information on the subject in question which he is anxious to air ; let him restrain himself—to ramble on into details not asked for will not tell in his favour. Examiners often ask a question or two on matters not included in the schedule, but this need cause no dismay, for while ability to answer such questions is likely to weigh to the candidate's advantage, no one ever fails because they do not possess such knowledge. Having gone through the course of work sketched out, and passed the Minor examination, the new-made chemist and druggist may congratulate himself not only on the possession of the legal qualification, but on having acquired in the course of his training habits of careful study and accurate observation, as well as a store of information that will be of value to him as long as he lives.

THE STUDY OF STARCH GRAINS AND ITS APPLICATION.*

BY HENRY KRAEMER.

The compounds that man extracts from the plant, or which make a plant useful to him as food, are likewise food compounds for the use of the plant. These food elements are only to be found as products of constructive metabolism and are sooner or later used by the plant in building up new cells, etc. These highly elaborated and complex food products are invariably, at one time or other, stored by the plant in some one of its members. Naturally enough, the place of storage is dependent upon the surroundings of the plant. In the plants of the hot and burning deserts they are stored either in roots (as asafœtida), or stems (as cacti), or leaves (as in the century plant). In the plants of the temperate regions the rhizomes or leaf scales or leaf buds contain this nutriment. It may be further said that all plants provide their offspring—whether seeds or spores—with enough nutriment to sustain them until they can provide for themselves. In some cases food is also contained in special parts to assist fertilisation in the flowers and dissemination of the seed.

Almost all of the food materials which man obtains from the plant kingdom are obtained from these reserve supplies. They may be found in tuberous roots (as sweet potato), tubers (white potato), leaf scales (as onion), bud scales (as asparagus), fruits (as tomatoes, bananas), or seeds (as peas, corn, wheat, etc.). It may also be said that whenever these food supplies are contained in the plant they are frequently naturally protected (as shown by the investigations of Stahl) by means of principles that are poisonous to the animal world. In some cases by the process of cultivation and selection, these principles may be increased or diminished according to the treatment. For instance, in white potato the alkaloid solanine is decreased, whereas in cinchona and opium the alkaloids are increased by process of cultivation.

Origin and Formation of Starch.

We now come to consider the first visible product of constructive metabolism of the plant, viz., starch. It occurs in the plant as an assimilative product and as a reserve product. In the former condition it is found in all the green parts of plants at the close of day

*Address to the Pure Food and Drug Congress, Washington, D. C., January 899. Communicated by the author.

in the summer when the sun has been shining upon them. As a reserve product it is found in roots, rhizomes, barks, buds, fruits, and seeds.

The assimilative starch is synthetically produced from the inorganic compounds, carbon dioxide and water, and results only when the chloroplastid is present and the plant is supplied with light and salts of potassium. It has been supposed that the reaction may be represented as follows: That 5 molecules of water and 6 of carbon dioxide produce 1 molecule of starch with the liberation of 6 molecules of oxygen.

There is no doubt that there are simpler products first formed, and it is supposed, from the experiments of Bokorny, that formaldehyde is one of the primary compounds. This experimenter removed all starch from specimens of Spirogyra, and then fed them in the dark with a sodium salt of formic aldehyde. Starch was rapidly formed in the chloroplastids, thus indicating the possibility that other compounds are formed before we have the product finally formed which we recognise as starch.

It has not been possible as yet to demonstrate the successive steps in the process of development of starch. All that we can say is that the production of starch normally is dependent upon the following conditions, viz., light; air containing CO_2 and moisture; and that the organ in which it is produced is the chloroplastid, when associated with protoplasm. The chloroplastid consists of a ground substance, and a pigment which again is made up of a green (chlorophyll), a yellow (xanthophyll), and also a reddish fluorescent principle. Very many experiments have, however, been made to determine what part the chloroplastid and protoplasm play in the production of starch, and necessarily numerous theories have been proposed. One view was (that by Sachsse) that the chlorophyll itself is changed into starch. Another view is that the protoplasm is changed into starch. In opposition to these chemical theories we find also physical theories. These are based upon the difference in the character and action of the rays of the sun, which are absorbed by the chlorophyll, and those that pass through it. These results have been obtained by the examination of solutions of chlorophyll by means of the spectroscope. One view, which is supported by Lommel and Müller, and apparently confirmed by the observations of other investigators, is that the rays—more especially the blue and red—which are absorbed by the chlorophyll are changed into some other form of energy, which is able to make starch synthetically out of carbon dioxide and water. Pringsheim, on the other hand, considers that the chlorophyll acts as a filter of the rays of light, and that those absorbed are not active in the work of assimilation, but on the contrary, interfere with the process, so that those that pass through are the rays which effect the production of starch. It is also held that just as there is a combination in the blood between hæmoglobin and oxygen, so the chlorophyll combines and fixes carbon dioxide. It is difficult to decide just what is the process in the manufacture of starch by the plant, and it is not unlikely that the rays absorbed by the chlorophyll are those directly concerned in the process, as a number of investigators have found that the production of starch is much more energetic in green plants when exposed to those colours which are absorbed by the chlorophyll solution to the greatest extent. And yet who can say that the secret of life does not lie here in the chloroplastid, that it is not only the mill which supplies the world with its food, but it is also the organ which changes the energy of the sun into vital energy. It may be that the sun is the source of the energy, the carbon dioxide and water the materials, and the chloroplastid the laboratory whereby vital energy is created and bound and held in the substance which we call starch. If we stop a moment to consider this we will find that the animal creation is wholly dependent for its energy upon the starch grain produced in the plant. If the plant (as clover), or seed, or fruit (as oats, etc.), is consumed by horses, the energy of the starch grain is changed to horse-power. If the plant is consumed by cows it becomes milk and meat, and may in turn furnish us energy. From these products of the animal creation, as well as from the plants directly, we obtain our power to live and act, *i.e.*, the energy we possess comes to us and every animal from a kind of potential (probably vital) energy stored in the plant, which the latter has received from the kinetic energy of the sun. The value of one food over another lies in the amount of stored energy that it contains, and which is ordinarily calculated as fuel value. From the consideration of the plant along these lines some have defined the plant as a machine for storing energy.

It was stated that if we examine the chloroplastid at the close of a day in summer, when the sun has been shining brightly upon the plant, we would observe, by proper manipulation, minute starch grains, called assimilation starch, in each chloroplastid. If the latter is examined in the early morning, it will be found to be comparatively free from starch, and the question arises, What has become of it? We find that during the night it has been changed into soluble carbohydrates by the aid of ferments and other substances, and, as such, transported to the portions of the plant that require food. If this process takes place during activity of growth in the plant, it is transmitted to the growing point of root, stem, or leaf, etc., and is utilised in the building-up of new cells, etc. In many of the cells through which the solution of carbohydrates passes *en route* to the growing point, or even at the growing point, it may be transformed back to starch by a colourless chloroplastid, called leucoplastid. Starch that is produced in this manner, and being in a transition or resting-stage, awaiting further orders or calls, so to speak, before going further, is spoken of as transitory starch. The starch in the medullary rays, as well as in other cells of the wood and bark of plants, is of this character, and distinguished by being in the form of rather small and nearly spherical grains.

After the production of the elements (of roots, branches with leaves, flowers, etc.) required for one year's growth, most plants, as a rule, provide food for their next year's growth, if they survive, or for that of their offspring. The character of the provisions laid by depends upon the nature of the plant and the conditions under which it develops. While starch is commonly the principle stored for this purpose, in some cases other substances represent the reserve product, as cellulose (in nux vomica), oil and proteids (in mustard), etc. Oil replaces starch in seeds which are to be transported to some extent by the agency of the wind; whereas it is replaced by cellulose in seeds where germination is a long time in being effected. Starch, however, is the substance most generally stored by the plant, and this is found in connection with other principles, as oil (in corn) and proteids (in wheat), etc. The starch which we find in rhizomes, tubers, bulbs and seeds owes its origin, like the transitory starch, to the leucoplastids which change the sugar solutions which they receive through the moving protoplasm back to a more stable form, viz., the starch grain. It is then called "depôt," "storehouse," or, more frequently, "reserve" starch. The starch grains of this class differ from either "transitory" or "assimilation" starch in that they are, as a rule, quite large and the grains are more characteristic for the different plants in which they are produced; this is especially marked in the starch we find in rhizomes, tubers and other metamorphosed stems.

Origin of Growth of Grain.

This brings us, then, to the consideration of the starch grain itself. In some cases we observe a distinct centric or eccentric

marking, around which lamellæ or layers may extend. The centric or eccentric marking is spoken of as the "hilum" or "nucleus" of the grain. The terms "hilum" and "nucleus" are, however, open to criticism, inasmuch as they are employed in botanical language for another specific purpose. The expression "point of origin of growth" would be better on account of its being less confusing, and is, moreover, descriptive and accurate. The "point of origin of growth" is the part of the starch grain that was first formed by the plastid and according as new products were added we have a nearly spherical or elliptical or irregular shaped grain.

The point of origin of growth in some starch grains is only discerned by the use of reagents or polarised light. When it is distinct it may be described as being either a nearly spherical mark, or a distinct fissure. In some cases there are several fissures which cross one another. All of these marks are to be employed practically in distinguishing those starch grains in which it is possible to discern the botanical source.

Constitution of Starch Grains.

We have observed in some grains, as the result of additions or growth, that there are layers or lamellæ. What does this mean? Does it indicate resting periods in the growth of the grain, and that as each layer is added there is a strong demarcation, or does it mean that we have layers differing in composition, etc.? This brings us to consider the composition of the starch grain and the meaning of the different layers. If we consult any of the standard works on inorganic chemistry, we find the formula for starch given as $C_6H_{10}O_5$. This formula gives us simply the proportion of the elements carbon, hydrogen, and oxygen, without any scientific or practical information in regard to either its physical or exact chemical composition. On the other hand, the starch grain has been the subject of much interesting investigation by botanists. In fact, what is to be considered one of the greatest intellectual feats of the century was the study of the starch grain by C. Nägeli. Previous to this time several hypotheses had been given as to the origin of starch: (1) It was considered to be a bubble filled with a liquid ("Flussigkeit gefullten Blase"). (2) Then it was considered (1834) that from a centric or eccentric point layer after layer was added. (3) Payen (1838) conceived the idea that growth took place from the outside towards the centre. (4) By others (1845) it was considered that growth of the starch grain was like that of the cell wall. Nägeli, in 1858, announced that growth of the starch grain was affected by the interpolation of new material among the particles already formed. He conceived the idea that the starch grain consisted of elementary particles or molecules which were made up of atoms (Stärkeatome or starch atoms) consisting of C, H, and O.

Later, inasmuch as the term molecule was being employed by the chemists to mean something different from what he had in mind he invented the term *micellæ*, meaning thereby that each micella consisted of larger or smaller numbers of chemical molecules. These micellæ were described by him from the interference of colours observed with the polariscope as being "biaxial crystals, and he assigned to them as a probable form, that of parallelopipedal prisms with rectangular or rhomboid bases." He said each micella has a watery film (Wasserhulle), and is surrounded by a mother liquor, which is different in composition from the micellæ. The latter, with their watery films, are "held together by the following forces: (1) The attraction of the micellæ for each other, a force which varies inversely as the square of the distance between them; (2) the attraction of each micella for the water which surrounds it, a force which varies inversely as some higher power of the distance; and (3) the force which holds together the ultimate chemical molecules of which each micella consists."

The development of the reserve starch grain does not consist simply in taking up sugar (Glycose), but consists in its transformation into starch. To this end the micellæ do not alone suffice, as the starch grains cease to grow when removed from the plant-cell, and are put into a sugar solution. The property (molecular kräfte) of living protoplasm must in some way contribute to bringing about this change by polymerisation of the sugar-holding solution, between the micellæ, into starch substance. The new starch substance which is formed is utilised in part in increasing the size of the micellæ already formed, and also to form new micellæ, which develop and arrange themselves according to the laws that the micellæ already formed have obeyed. In this manner we have growth of the starch grain by means of the interpolation of new material between that which has already been formed, and this has given this theory the name "Intersusception Theory," to distinguish it from that in which new layers are supposed to be added upon those previously existing.

C. Nägeli has further shown that the starch grain consists of two different substances—one which is soluble in ferments, and called by him granulose, and the other, which is insoluble in saliva, and called by him starch cellulose. He showed that the layering in starch grains was due to a difference in the amount of water in the different layers. This has given rise to the formula suggested by Nägeli for the starch grain, which is $6C_6H_{10}O_5 + H_2O$, or $C_{36}H_{62}O_{31}$. Krabbe, on the other hand, claims the layering to be due simply to lines of contact between the separate lamellæ. In 1883 Schimper showed that all starch grains developed within plastids, and that, in the reserve starch grains, the leucoplastids finally disappeared. C. Nägeli was not cognisant of the presence of leucoplastids, these having been discovered after his early investigations, and he believed that while some starch grains arose in plastids most of them arose free in the cell sap. Schimper's studies further showed that the outer portion of the grain was the youngest, and he also expressed the idea that starch grains were made up of sphere crystals of crystalloides, and called them "Spharokrystalloide."

In 1895 Arthur Meyer published a work on the starch grain, in which he considers it to be made up (1) α-amylose, (2) β-amylose, and (3) amylodextrin, a decomposition product of amylose. He also believes that inasmuch as there is an anhydride of dextrose which does not readily take up water, there is probably also an anhydride of amylose which, even on boiling with water, is hydrated with difficulty, and this is the substance that has given rise to the hypothesis that there is present a starch cellulose. This latter term has been used for a number of different substances: (1) Mixtures of amylodextrin and α amylose; (2) solutions of α-amylose and β-amylose; (3) solutions of β-amylose with various substances as nitrogen-holding substances, impure fatty products, pure amylodextrin, and the walls of plant cells which are contained in commercial starches unless carefully purified. He obtained the α-amylose upon treating starch paste (Stärkekleister) with malt solutions (Malzauszug), and by the action of hot dilute solutions of hydrochloric acid upon the whole starch grain. The portion (β-amylose) remaining is distinguished from the portion dissolved, in that it is not soluble in water and becomes slightly reddish in colour, and not blue with iodine solutions.

He considers the starch grain to be made up of two kinds of acicular crystals (which he calls "Trichiten"), viz., α-amylose and β-amylose, and that in certain starch grains which are coloured red with iodine and not blue, that there is also present amylodextrin and dextrin. He further says that most starch grains con-

sist altogether or nearly so, of amylose, and that such are coloured pure blue with iodine. These latter starch grains are made up of sphere crystals of amylose, arranged in layers, and these layers may consist of crystals of either α-amylose or β-amylose, or both, and that some starch grains contain in addition large amounts of amylo-dextrin and dextrin, as in *Iris germanica, Gentiana lutea, Oryza sativa*, some orchids, grasses, etc.

(*To be continued.*)

NOTICES OF BOOKS.

Kirkes' 'Hand Book of Physiology,' as revised by W. D. Halliburton, M.D, F.R.S. (London: John Murray. Fifteenth Edition. Pp. 872. Price 14*s.*), requires no recommendation to students at this late period of its career. The fourteenth edition, published less than three years ago, was virtually an entirely new book, having been re-arranged and largely re-written, and, as was pointed out in reviewing that edition, the book was made particularly suitable for the needs of elementary students by the adoption of a clear and simple style, and a wise limitation of the discussion of doubtful points. In the present edition a number of minor errors are corrected, the chapter on the circulation of the blood has been amplified, and the order in which the subjects are treated is further modified, the central nervous system being described towards the end of the book, in response to the wishes of numerous teachers. The illustrations again constitute a special feature of the book, exceeding six hundred and fifty in number, and some of them are printed in colours. In every possible way, in fact, the book has been brought up to the highest standard as a students' text-book.

The 'Pocket Pharmacopœia,' by Frederick Hudson-Cox, F.I.C., M.P.S., and John Stokes, M.D., B.S., etc. (London: Baillière, Tindall and Cox. Pp. 206. Price 3*s.* 6*d*), is a handy epitome of the British Pharmacopœia, 1898, in which the names of the natural orders and active principles of the vegetable substances are added, together with brief particulars regarding the therapeutic action of each drug. The plan of the work is practically identical with that of Semple's 'Pocket Pharmacopœia,' published in 1885, but the matter is considerably amplified. The book should be largely used by students.

The 'Nineteenth Century' for March contains another article on the Nordrach Cure, by Mr. James Arthur Gibson. In this, after refuting the criticisms of Dr. J. G. Sinclair Coghill on the first article, the author proceeds to show that the Nordrach cure is practicable in this country, and he describes how appropriate sanatoria might be built at a moderate cost. Sooner or later, Mr. Gibson thinks, the State must take the matter up, private and philanthropic effort being of but little use in checking the fearful ravages of consumption.

The 'Atlantic Cable Directory of Registered Addresses and Code Book' (London: The Commercial Cable Company. Pp. 656. Price 5*s*) is a bulky volume which should prove of the greatest importance to all who are directly interested in trade with foreign countries, and particularly with the United States of America. It includes an alphabetical list of names arranged according to cities and states, a similar list, arranged according to professions and trades, and a very comprehensive directory code designed for general use. Being suited to the condensation of any phraseology, the use of the code in local telegraphing should effect very considerable saving as well as insure secrecy.

The 'Calendar of the Pharmaceutical Society of Ireland' for 1899 is bound in a durable leather cover and contains the usual information about the Society and pharmacy in Ireland generally. The statistics of the Society for December last include the following figures:—Pharmaceutical chemists, 573; members, 190; chemists and druggists, 294; registered druggists, 444; associate druggists, 45; assistants to pharmaceutical chemists, 23. The numbers of pharmaceutical chemists, members, registered druggists and assistants to pharmaceutical chemists each show a slight increase; but the lists of chemists and druggists and associate druggists show some falling off for the past year. The subscribers to the Society apparently number 235 out of 1334, as against 241 out of 1290 for the year ending December, 1897.

'Chemistry for Photographers,' by C. F. Townsend (London: Dawbarn and Ward, Ltd. Pp. 158. Price 1*s.* net), has already reached its second edition, and thus proved the existence of a definite want for such a book. There is but little doubt that it will continue to be in demand for some time to come.

'Guy's Hospital Reports' for 1896 have just been published. The contents of the volume are almost exclusively of purely medical or surgical interest, but the extremely practical notes on diagnosis by Dr. P. H. Pye-Smith are well worthy of much wider application. The gist of the notes is that it is never safe to form a conclusion until all the available facts have been carefully considered.

SELECTED PRACTICAL FORMULÆ.

Pancreatic Essence.

Pure pancreatin, 7·68; sodium bicarbonate, 0·96; distilled water and glycerin, of each, 56; simple elixir, to 448.—*Pharm. Era.*

Waterproofing Linen.

Linen may be rendered waterproof by coating with a mixture of the following three solutions: (1) Isinglass, 50, boiled in soft water, 1000; (2) alum, 100, dissolved in water, 3000; (3) hard soap, 40, dissolved in water, 2000.—*Pharm. Cent.*, 39, 910, after *Sudd. Apoth Zeit.*

Antiseptic Varnish.

The following is recommended by Nicaisse as a substitute for collodion:—Powdered shellac, 60; balsam of tolu, 5; thymol, 1·5; alcohol (90 per cent.), 50; ether, 100.—*Rev. Med. Pharm.*, 5, 300.

Quinophosphate Wine.

Neutral potassium phosphate, 15 Gm.; water, 20 Gm.; cinchona wine, 450 Gm.; syrup of cinchona, 50 Gm.; phosphoric acid, 1 drop.—*Rev. Med. Pharm.*, 5, 300.

Perfumed Cleansing Fluid.

(1) Solution of ammonia, 165; soft soap, 30; borax, 8; eau de Cologne, 15; distilled water, to 360. (2) Solution of ammonia, 48; sodium carbonate, 20; distilled water, 320.—*Pharm. Post*, 32, 39.

Liquid Dentifrice.

A preparation which has a considerable reputation in France as a liquid dentifrice is stated to be composed of alcohol, 96 per cent., 1000; Mitcham peppermint oil, 30; aniseed oil, 5; oil of *Acorus calamus*, 0·5. Finely powdered cochineal and cream of tartar, of each 5, are used to tint the solution. The mixed ingredients are set aside for 14 days before filtering.—*Pharm. post*, 32, 7.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—V.

Annulata.

The animals of this sub-kingdom, comprising the worms most highly organised, are distinguished by the division of their bodies into a series of segments, each containing similar organs or parts of organs in regular repetition, the segmentation being indicated externally by the presence of a number of rings or annuli. In some forms each external annulus marks an internal segment, as in the common earthworm, but in Hirudo most of the segments are marked out by five annuli. In one (*Gephyrea*) of the four classes into which the phylum is divided, no segmentation occurs at all in the adult, but it is so pronounced during the development as to place the members of this class amongst the Annulata.

The number of segments in these annulated worms may be fairly regular or otherwise, and in some forms two or more varieties of segmentation may occur. With the exception of the class *Hirudinea* the whole phylum possesses a more or less distinct cælom or body cavity. The alimentary canal, which lies inside this body cavity, varies according to the habit and environment of the animal. It generally consists of a mouth, a pharynx, a crop, and an intestine, all in one straight tube. In forms which feed on proteid matter a certain portion secretes a special digestive fluid, and when hard food is taken in, a certain section becomes converted into a masticating or grinding apparatus.

The nervous system is typical throughout the sub-kingdom. It consists of a dorsal brain or pair of cerebral ganglia, connected by a nerve-ring passing round the alimentary canal, with a ventral paired nerve-chain, which is constricted into ganglia, one pair of ganglia occurring in each segment. From these segmental ganglia nerve-threads branch off to the various parts.

The blood vascular system usually consists of two main tubes running dorsally and ventrally along the length of the animal, and connected in each segment by lateral branches, the two main vessels undergo a regular peristaltic contraction.

The excretory organs are peculiar; they are complicated tubular structures (nephridia), usually one pair in each segment, which open externally at surface apertures (nephridiopores), and internally into the body cavity at the "nephrostomes."

Reproduction is mostly of a true sexual character.

The class *Hirudinea* is characterised by the number of annuli per segment, by the suctorial extremities, and by the almost complete obliteration of the cœlom or body cavity by a mass of connective tissue. In *Hirudo medicinalis* (natural order Guathobdellidæ) the body shows a plano-convex section, in which the dorsal surface is convex. It is divided into twenty-six segments, marked externally by about a hundred annuli, which are five to each segment, except at the extremities. On the first ring of each segment are minute sensory papillæ, and on the ventral surface of every fifth ring are a pair of nephridiopores. On the rings of the anterior sucker the sensory papillæ become specially modified into five pairs of eye-spots, and on the inside of the sucker are three jaws, curved chitinoid plates, placed radially and bearing a finely serrated edge.

The alimentary system consists of a mouth, a pharynx surrounded by glands secreting a fluid which prevents the coagulation of blood and a highly elastic thin-walled crop, which has a number of pairs of lateral pouches, each pair in a segment except the last, which is much larger and produced longitudinally backwards. The stomach is a tube lying parallel with the last pair of pouches, and secretes the digestive fluid, a full crop of blood taking several months to digest. The anus is dorsal, and lies just above the posterior sucker.

Besides lateral blood vessels, the leech possesses dorsal and ventral blood sinuses or channels, which to some extent take the place of a body cavity. In the ventral sinus the nerve-cord lies, and in branches of this sinus the nephrostomes are situated.

The leech is monœcious, and mutual impregnation may occur. The development takes place in a cocoon secreted by special glands. They are generally fresh-water inhabitants, and parasitic on vertebrates and molluscs. A few are marine, and one genus (*Hæmadipsa*) lives on land, infesting tropical forests in many parts of the world.

EXPLANATORY NOTES ON THE B.P. 1898.

Oils (Fixed), Fats, and Waxes.—These bodies are best dealt with as a group, although in the Pharmacopœia they are separated and widely distributed by the alphabetical arrangement of the monographs dealing with each article. A general description of their constitution, properties, and relationships, as well as of the methods adopted for their identification and examination, will be found in the Students' Pages in the *Pharmaceutical Journal* for September 11, 18, and 25, 1897. With regard to the elaïdin test and oleic acid, the student is referred to the article on Acidum Oleicum in the present series, which will be found in the Students' Page of the *Pharmaceutical Journal* for September 24, 1898. It should be noted that mercuric and zinc oleates are now made by double decomposition between solution of hard soap (sodium oleate) and solutions of mercuric chloride and zinc sulphate respectively.

Almond Oil.—This consists chiefly of olein, and on this account its congealing point is very low. Note carefully that −4° F., the temperature mentioned in the Pharmacopœia, is 4° below *zero* Fahrenheit, and not 4° below the *freezing point* of water. This test distinguishes almond oil from olive and lard oils, which begin to congeal at a higher temperature, owing to the larger proportion of palmitin and stearin they contain. The test with fuming nitric acid is a variety of what is known as the elaïdin test. It depends upon the production of elaïdin, a solid body, isomeric with fluid olein. A similar reaction is undergone by oleic acid, which forms a solid isomeric elaïdic acid when acted upon by nitrous acid. The reaction can be brought about by passing into the oil nitrous fumes (from arsenious anhydride and nitric acid); by heating with ordinary strong nitric acid; by the action of a solution of mercuric nitrate containing nitrous acid (*i.e.*, a freshly prepared solution, *vide* ung. hydrargyri nitratis); or by fuming nitric acid in the cold. The actual means adopted must be carefully defined, in order to make the test of comparative value in the examination of oils, since the proportions of oil and acid, temperature of reaction, etc., considerably modify the rate of reaction as well as the appearance of the final products. The chemical relationship of elaïdic acid to oleic acid is not well understood, but is believed to depend upon a shifting in the carbon chain of the position of the double bond which oleic acid contains, since it is a derivative of an unsaturated hydrocarbon of the ethylene series. This change in the position of the double bond is explained by the formation of an unstable additive compound from the nitrous and oleic acids, which splits up immediately, regenerating the nitrous acid and elaïdic acid, an isomer of oleic acid in the sense described above. The official test (using *fuming* nitric acid) serves to detect (1) oils which are poor in olein and do not form a solid separable mass but a pasty semi-fluid one, (2) oils of the linseed class (drying oils) which give liquid products, (3) peach-kernel oil, which is a product giving usually a brown or yellow colour.

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OBJECTIONS TO THE COUNCIL'S SUGGESTIONS.

In discussing the details of the proposed amendment of pharmacy law some undue importance appears to have been given to difficulties which are apprehended to arise from the circumstance that associations of unqualified persons have for some years carried on the business of chemists and druggists, and have used that title as the keepers of open shop for the sale, dispensing, and compounding of poisons. Although such procedure is unquestionably opposed to the spirit of the Pharmacy Act, and is obviously inconsistent with the object declared by that Act to be expedient for the safety of the public, it has been assumed by some that the keeping of open shop by associations of unqualified persons having been to some extent sanctioned by the House of Lords—or at least been a consequence of its decision that a corporation is outside the scope of the Act—further legislation for regulating the practice of pharmacy cannot go so far as to declare such company trading to be illegal. The only reason given for that opinion is embodied in the statement that companies carrying on business in the manner referred to, have acquired an interest which is entitled to respect. A similar line of argument might be made to serve as justification for the continuance of any practice contrary to or subversive of the public interest, and as the only excuse for the companies of unqualified persons, trading as chemists and druggists, is defect in the wording of the Statute intended to compel all persons entering that business to give evidence of their practical knowledge, it may be inferred that the vested interests of the public should claim consideration before those of persons who have deliberately set themselves in opposition to that Statute. On these grounds we fail to perceive what argument can be adduced on behalf of companies, constituted of persons unqualified under the Pharmacy Act, for if their keeping open shop without legal qualification is not exactly an unlawful act, it is at least so directly opposed to the object and spirit of the law that it should in the public interest be put an end to.

The argument that a company cannot be qualified should be of little assistance towards supporting a continuance of the practice. It should, on the contrary, prove that a company, as such, cannot lawfully keep open shop for the sale, dispensing, and compounding of poisons, but could do so only in virtue of the legal qualification of the individuals it consists of. In regard to any further regulation of the practice of pharmacy beyond that point, such as is pointed to by the third clause of the suggestions for a draft Pharmacy Bill, some unnecessary apprehension has been expressed that the term "medicines" there used is too comprehensive and would have the effect of prohibiting grocers from selling Epsom salts or other articles of that kind. It would be unreasonable to suppose any such claim to monopoly was contemplated though the use of the word "sell" was necessary even in regard to medicines compounded and dispensed in the ordinary pharmaceutical sense, as they are eventually sold as much as any article supplied in a drysalter's shop. The distinction between dispensed medicine and articles sold in the ordinary way of trade is sufficiently clear. For the purchase of an ounce of sugar of lead the drysalter may perhaps satisfy all requirements of a customer; but for the proper preparation of a lotion for the eye it would be more prudent to have recourse to the skill of a pharmacist acquainted with the precautions to be observed in executing the work and experienced in its performance. In such a case the intrinsic value of the material employed in the preparation of medicine becomes a totally insignificant quantity, as compared with the due remuneration of the pharmacist for the service rendered by him.

In extending the regulation of the practice of pharmacy from the sale, dispensing, and compounding of poisons, to the sale, dispensing, and compounding of medicines there is as little ground for supposing that the result would be the creation of a monopoly, as there is for the assertion that the existing law makes the sale of poisons a monopoly. The provisions of the Act relating to the conditions under which poison may be sold are really a restriction of the liberty of individuals desiring to carry on the business of chemists and druggists, and as such restriction is imposed not for their own benefit but in the public interest, it is wholly unreasonable to speak of the limitation of the sale of poison as constituting a monopoly. It would be equally unreasonable to regard a similar restriction as to medicine—in the proper sense of the term—a monopoly. But nothing less than such a restriction will be sufficient to satisfy the just claims of pharmacists, who are required, in the public interest, to prove their competence to carry out the work appertaining to their business. In like manner individual qualification of the proprietors of pharmacies is no less essential in the interests of the public than it is in the interests of pharmacists; but if that principle is to be upheld, it must apply generally, without any exception, to exclude all but those possessing the legal qualification.

THE COMING COUNCIL ELECTION.

For the first time in the history of the Pharmaceutical Society every chemist and druggist whose name is on the Register will this year have an opportunity of voting at the election of members of Council. To that end, however, he must be qualified to vote by having his names upon the list of members of the Society at the time the voting papers are sent out, *i.e.*, not less than ten days prior to the annual meeting on May 17. This permits registered chemists to be elected members of the Society as late as May 3, and to exercise their voting power forthwith. Under the circumstances it may not unreasonably be anticipated that a much heavier poll will be recorded than in former years.

In 1896 the number of voting papers issued was 3762, but only 2173 of those were returned, and the highest number of votes polled by any candidate was 1725. A year later, 3767 papers were issued, 2035 were returned, and the candidate who headed the poll had 1790 votes recorded in his favour. In 1898 the papers issued numbered 3756 and 1993 were returned, the favourite candidate receiving 1754

votes only. This year the number of voting papers issued will probably largely exceed 6000, and of that number at least two-thirds may be expected to be returned, if, as seems almost certain, there should be a contest. A much more healthy state of affairs would be manifested, however, if the number of voting papers not returned were less than a thousand, and that, we hope, will be the case.

As was urged in these columns last year, if the election be made something more than a mere formality, by a sufficient number of candidates being nominated and declaring their readiness to accept office if elected, it is the plain duty of every member of the Society to vote. The date for receiving nominations is now past, but those who are willing to accept office if elected need not intimate their intention before Friday next, March 31, and the list of candidates will not be made public until the meeting of the Council on April 12 next. After that the members will have a clear month to decide for whom they will vote, and for the candidates to help them to decide—by expressing their views in the columns of the Journal or otherwise.

THE SALE OF FOOD AND DRUGS BILL.

This Bill is still awaiting a decision as to the nature of the Committee which is to deal with it. Meanwhile the pages of amendments accumulate, and though, taken altogether, they are not very formidable in character, a few of them appear likely to lead to interesting discussions. As mentioned last week, Sir Charles Cameron intends to move that a Standing Committee of Reference on Food Standards be appointed, the bodies to be represented on that Committee being the Local Government Board, the Board of Agriculture, the Society of Public Analysts, the General Medical Council, the Institute of Chemistry, and the Pharmaceutical Society. It is proposed that the members of the Standing Committee shall be remunerated for their services out of the moneys to be provided by Parliament, on such a scale as the Treasury may determine. One of the members is to become chairman on the nomination of the Board of Trade, three members are to form a quorum, and the chairman is to have a casting but not a deliberative vote. Accordingly, assuming that the nominee of one of the Government Departments is chairman, the representatives of the three chemical bodies can have everything their own way, and various other interesting combinations suggest themselves.

THE METRIC SYSTEM.

The deputation which waited on the President of the Board of Trade on Wednesday, to urge him to advocate the compulsory use of the metric system in this country within a period of two years from the present time, made about as feeble an exhibition of its persuasive powers as could possibly be conceived. It was fairly representative and its members were all men of weight, but the arguments they employed were trivial in the extreme. Mr. Ritchie's reply was equally weak and unconvincing, being apparently more strongly influenced by fears with regard to the next general election than by any proper regard for the best interests of the community. Dread of the wrath of the small shopkeeper—whose vote, of course, counts for as much as that of any other person—underlay all that Mr. Ritchie had to say, and for the present the coming of the kilogramme is delayed on the small shopkeeper's account.

ANNOTATIONS.

Some Statistics of Poisoning in Prussia are published in a recent number of the *Apotheker Zeitung*, which may be of interest at the present time for the sake of comparison. They relate to the year 1895, and show not only the number of fatal cases, but also the number of cases that have been under treatment in the hospitals. Of acute poisoning there were 524 cases, 332 males and 192 women. In 117 of them acids or other liquors had been swallowed, and in thirty-six instances the result was fatal. The number of cases of acute poisoning by corrosive sublimate was eighteen, while other mercurial preparations were taken in twenty-eight cases, out of which nine were fatal. There were fifteen cases of arsenical poisoning, and seven of them were fatal. The cases of poisoning with morphine or opium were twenty-two in number, four of them fatal: among the persons affected were three medical men, two apothecaries, five women, and four children under two years of age. Out of seven cases of poisoning by carbolic acid five had a fatal termination. [In 1895 the deaths caused by carbolic acid in England and Wales numbered 258 or nearly 22 per cent. of the total deaths by poison.—Ed. *P. J.*]. There were seven cases of poisoning with potassium cyanide, one of them being fatal; three of poisoning with strychnine, two of them fatal; and one case of poisoning with sulphonal. The total number of cases of poisoning appears to have increased since 1849 in much greater proportion than the population, which in 1895 was 31,894,180), and that result is attributed to the increased facilities for obtaining poisonous articles in the ordinary way of trade. In that way the precautions taken by apothecaries in not supplying poisonous articles, such as mineral acids, caustic liquors, etc., in wine or beer bottles, etc., are to a great extent counteracted and rendered ineffective.

The Use of Boric Acid as a food preservative has been challenged in Parliament this week. Mr. Kilbride having asked the President of the Board of Agriculture whether he was aware that foreign bacon imported into this country has been found to contain 0 33 per cent. of boric acid, and that the French authorities have refused to admit the importation of bacon thus preserved on the ground that it was injurious to health. Mr. Long was also asked whether he was aware that the law in Brazil prohibited the use of borax as a food preservative; and whether, in view of the action taken by other Governments, inquiry would be made into the use of borax in the interest of the public health. As is now so frequently the case in the House of Commons, the questions were answered by a totally different person from the one to whom they were addressed, the figure-head put up on this occasion being Mr. Chaplin, President of the Local Government Board, who said he was not aware of the facts suggested in the question, and had not yet been able to ascertain how far they might be correct. The Local Government Board, he added, has no information on the point. He has been considering, however, whether such an inquiry as was suggested should be made, and if it appeared desirable in the interests of the public the inquiry would be made. Though Mr. Chaplin did not say so, it may be presumed that until the Local Government Board is satisfied that boric acid is injurious, prosecutions for the addition of minute quantities of the acid to articles of food will cease.

The Metric System is freely criticised by Sir Frederick Bramwell in a letter published in the *Times* for Monday last. He protests strongly against the suggestion to make the metric system of weights and measures compulsory within two years, and attributes the agitation in favour of the system largely to

"scientific professors who have been brought up on foreign books, and have found it too much trouble to convert foreign measurements into English." Supporting those professors, he thinks, are "a number of foreign merchants, forming (happily or unhappily) now so large a portion of our traders—men who, also, do not wish to take the trouble of converting foreign weights and measures into English." Sir Frederick opposes compulsion in the matter on the ground that the metric system is absolutely subversive of mental arithmetic, that the French find it irksome and evade it, and that it is easier to state and deal with vulgar fractions than with their metric equivalents. In conclusion, it is urged that if the two systems be permitted to exist together, as at present, experience will prove which is the one preferred by the community. It is interesting to note, by the way, that the domination of the United States in Cuba and the Philippines raises the question whether the metric system, as established in those islands, shall be allowed to prevail, or whether the ordinary American weights and measures shall supplant them.

The Petroleum Bill was ostensibly rejected last week on the ground that the Government is preparing a Bill on the subject, but according to some unkind critics the real reason is to be found in the fact that, for the time being, the Rockefeller influence in the House of Commons is more powerful than the Rothschild influence. Be that as it may, it seems a pity that the recent report of the London Fire Brigade Committee was not published a few days earlier, for in that report it is stated that it has been constantly forced on the attention of the Committee that the number of fires in London is increasing, owing to the sale of mineral oil which is more or less volatile at low temperatures. Of the 3585 outbreaks reported last year the causes were assigned in 380 cases to the use of mineral oil, and this is all the more serious from the fact that the number of deaths from fires in the metropolis has been steadily increasing during recent years. Between 1880 and 1889 the number ranged from 33 to 35, but since then it has risen gradually till it has reached 91, 106, 87, and 98 respectively. Reference was made to this report in the House of Commons on Tuesday, when Colonel Denny asked the Under Secretary for the Home Department if he was aware that the Fire Brigade Committee of the London County Council had presented a report to the Council drawing attention again, as had been done on previous occasions, to the dangers arising from the use of low flash oil, and expressing the conviction that no oil should be sold in London the flash point of which is less than 100 degrees Abel close test. Mr. Jesse Collings, who answered the question, said he had seen the report referred to, but beyond repeating that the Government is preparing a Bill dealing with the question of petroleum, he did not vouchsafe any further reply to the question.

Select Committees do not, as a rule, hurry along with their duties at bewildering speed, but for a real good modern illustration of the "*festina lente*" policy commend us to the Select Committee on the Companies Bill. That august body has been receiving evidence for three years, and now wonders what to do with it. The evidence points one way and the Committee wants to report in another; hence the perplexity. In cases of doubt it is a safe thing to adjourn, and this the Committee has done—*sine die*. No doubt a good deal of the delay in proceeding with the work of the Committee is due to the law lords who are members of it. Lord Davey and Lord Shand have heavy legal duties to attend to, and, in addition, Lord Davey is Chairman of the Statutory Commission now engaged in the organisation of the London Teaching University. As for the Lord Chancellor, he has a number of items awaiting his serious attention—among them the drafting of the Pharmacy Acts Amendment Bill on the lines of the now historic "Suggestions." As a whole, the political outlook does not seem to be at present favourable to the advancement of the "Company" question, and no definite step need be looked for this side of Easter.

The Use of Acetic Acid as a Menstruum for the exhaustion of crude drugs is now common in America, and Dr. E. H. Squibb, jun., in the latest number of *Ephemeris*, states that since this time last year much work has been completed with the acid by more than one set of observers. A systematic series of exhaustions has been undertaken on a scale much larger than is possible in the experimental laboratory, and all of the drugs in general use, of different coarseness of powder, are now being treated in turn with varying strengths of the acid with the view of determining the proper conditions to complete exhaustion. The strength of acid employed has varied from that used in the old pharmacopœial "Aceta" up to as high as 60 per cent., the aim being to employ as weak acid as possible for obvious reasons. The resulting fluid extracts are found to be of the same quality and strength as the official products and, it is thought, should prove equally effective. Veterinarians have naturally been much interested in these products and have studied the subject in the line of comparative therapeutics. From their encouraging reports further progress in the use of the acetic extracts is now quite established. The reduction in cost is an item of more importance with the veterinarian than with the physician, but it is claimed that the efficiency of preparations from the drugs so treated has been largely increased by the elimination of alcohol.

Although Acetic Acid generally exhausts drugs more completely, and thus naturally extracts a much larger proportion of inert matter, the finished extracts are said to yield much less precipitate on dilution with water than the alcoholic preparations. That fact should be appreciated by medical men, for although in some instances a slight precipitate will take place when the acetic extracts are diluted with water, yet in most cases it is found to be so slight that it can be ignored, especially as it carries down little if any of the alkaloidal principles. In fact, generally speaking, the acetic acid fluid extracts may be diluted with acetic acid without precipitation, and even if diluted with alcohol to the tincture strength they only give a slightly turbid solution at most, whilst they may be diluted with water without giving nearly so muddy or unsightly solutions as the alcoholic preparations of the same drugs. If the action of acetic acid be objectionable in any case, the excess of acid present may be neutralised as far as needed with soda or potash, and the remaining slight acidity will be found to be rather beneficial than otherwise, not only to the alimentary tract, but in some cases to the urinary bladder. As an instance of this, it is stated that a fluid extract of buchu made with acetic acid can be enhanced in its effects by neutralising at least some portion of the acid present with potash, thus forming potassium acetate in the product, and thereby procuring a combination largely used by genito-urinary practitioners. Comparative trials of the new acetic acid products are therefore urged upon medical practitioners in general, to verify the favourable reports which have already been received from an increasing number of observers.

Poisoning Cases increase in variety as time goes on, decided Borgiasque tendencies being in course of development in servant maids and other persons in humble circumstances, if we may credit reports in the lay press. That such reports

are not above suspicion, however, is manifest when attention is directed to the latest lie about the burglar who first chloroforms those whom he is about to rob. For it is related that a certain medical man, together with his wife and child, was rendered unconscious during the night by the vapour of chloroform given off from a handkerchief saturated with that anæsthetic and thrust beneath the bedroom door (*sic*). But to return to the latest curiosities in poisoning cases. In one instance the inmate of a lunatic asylum has died, and several others are ill, as the result of eating a cake sent through the post, and alleged to be poisoned. Some time previously, it is reported, the unfortunate victim received a parcel containing tea, sugar, etc., but on infusing the tea she found the infusion very bitter and threw it away before any harm was done. The post-mortem examination showed that death was probably caused by poison, and the contents of the stomach are now being analysed by Dr. Stevenson. In another case, reported last week (*ante*, p. 262*b*), a woman and child appear to have died from the effects of arsenic which, by some mysterious agency, had found its way into oatmeal from which porridge was prepared. A very similar case at Totnes is reported this week. A nurse, who died suddenly, had cooked and ate what she believed to be oatmeal, but inquiry showed that what she had consumed was a mixture of arsenic and wheatmeal, intended for poisoning rats. The tin containing the mixture was not labelled, and no one in the house appears to have known what it contained. The last case to be referred to is one in which a domestic servant is charged with attempting to poison her employer by mixing arsenic with the household stock of pepper. Whether, however, the accused actually committed the offence or not remains to be seen; for the present she stands committed for trial.

The Latest Martyr to Science is the electric fish—*Menapterurus electricus*—which was borrowed from the Liverpool Aquarium and exhibited at the Royal Institution on Friday night last week, in connection with Professor Francis Gotch's lecture on "The Electric Fishes of the Nile." At the commencement of the discourse the fish was as lively as could be wished, and when Professor Gotch had finished his lecture the audience pressed round the tank in which the fish lay, everyone being anxious to get an electric shock by touching its body. According to the *Daily News*, this excessive measure of attention so exhausted the creature that before the next morning he had departed this life. At the close of the lecture, which the deceased fish served so vividly to illustrate, Professor Gotch related an anecdote illustrating the craftiness of the *Menapterurus* and its ability to take care of itself under ordinary circumstances. A specimen of that fish was kept in a tank together with a small roach. They lived on excellent terms with each other, but whereas the *Menapterurus* never ate, the little roach was always feeding. In spite of this difference in behaviour the *Menapterurus* grew well and sleek while the little roach grew thin. The anomaly was explained when, one day, it was noticed that by what could have been nothing else but an electric shock the roach disgorged the contents of its stomach by an involuntary contraction of its alimentary canal, whereupon the *Menapterurus* promptly devoured the regurgitated and semi-digested food.

The Biological Difficulties in the way of conceiving the conditions that have determined the evolution of the electric organ in the *Menapterurus*—which was described as consisting of a pile of some two million compartments, each enclosing a plate or disc in albuminous jelly—were commented on by Professor Gotch. A nerve is connected to the central disc of each compartment and the absolute seat of the electrical changes is believed to be the nerves; in tissue from a quite recently-killed fish one stimulus of the nerve gives not one discharge but a large number in succession. The discharge is from the head to the tail and takes about one-thousandth of a second to culminate. The fish appears to be able to regulate the discharge by means of a unique sort of central nervous system, but it cannot send the nerve stimulus more than ten or twelve times in a second and cannot go on at that rate for more than six times, owing to fatigue of the central system. As to the use of this offence organ, the *Menapterurus* is very pugnacious. With its own kind the mouth is the chief weapon, but small fish of other kinds are attacked both by the mouth and the electric organ, though it does not seem probable that food is gained in that way, because of the profound exhaustion that would be the price of a meal. The fish usually lies in the mud and probably feeds on much smaller forms of life. As a means of defence, however, the utility of the electric organ must be enormous, and no large fish is likely to make the mistake of attacking the *Menapterurus* twice. We hope to publish a fuller report of this interesting lecture in a subsequent issue of the Journal.

The Cost to the Nation of the Privy Council Office for the year 1899–1900 is estimated by the Government at the modest sum of £5000, but that is presumably for incidental expenses only. The Local Government Board expenses for the same period figure in the Vote on Account at the same amount, while the Board of Trade is allowed £60,000, and the Board of Agriculture £75,000. The total amount to be voted for education, science and art is £3,930,505, of which public education in England and Wales absorbs £3,600,000; the Science and Art Department £200,000; universities and colleges in Great Britain and intermediate education in Wales £38,000; scientific investigations, etc., in the United Kingdom £15,000. The British Museum, picture galleries, etc., account for £77,500, and the odd £5—not at all an extravagant sum—goes to London University.

The Melbourne College of Pharmacy was established by and is under the direction of the Council of the Pharmaceutical Society of Australasia. There are two courses of lectures and of practical work during each complete session, and a student must attend during a complete session in order to qualify for presentation at the examinations for registration as a pharmaceutical chemist in Victoria. The Medical Act, 1890, provides that the would-be pharmacist shall have passed a preliminary examination before the commencement of his apprenticeship, and shall have served for not less than four years as an apprentice in the business of a registered chemist keeping open shop, or in a dispensary under the management of a registered pharmaceutical chemist. He must also attend one course of lectures and pass examinations during one session—at the University of Melbourne or some school or college of pharmacy recognised by the Board—in materia medica, botany, chemistry, and practical chemistry. Further, he must pass an examination in the subject of practical pharmacy, and any subject that may be prescribed by the Board of Examiners with the approval of the Governor in Council. As regards employers, the Act stipulates that it shall be the duty of every registered pharmaceutical chemist who has an apprentice to allow such apprentice during the last year of his apprenticeship a reasonable time for the purpose of attending lectures in accordance with the requirements stated above. Such duty to allow such reasonable time is deemed to be a condition of the contract of such apprenticeship, and failure or refusal to allow such reasonable time is held to be a breach of the contract of apprenticeship.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A large number of the members of this Association were evidently otherwise engaged on Thursday evening, March 16, or there would no doubt have been a larger attendance than there was at 73, Newman Street, W., when the President, Mr. F. W. Gamble, took the chair at about 9.30 p.m. The few who were present, however, had an opportunity of gaining some useful hints, which, if put into practice, must prove beneficial. The subject under consideration was

The Commercial Study of Drugs,

introduced by Mr. J. H. Heap. He commenced by remarking that the commercial study of drugs might signify the study of drugs with regard either to their commercial features or with regard to their commercial possibilities. The former aspect of the subject, he was of opinion, has been sadly neglected, for whilst there are a number of specialists in what appertains to the botany and chemistry of drugs, he thought it would be practically impossible to find anyone in recent years who has made a close systematic study of the commercial characters of drugs. This could not be because there has been nothing new in the matter of the subject since the time of Pereira and Hanbury, or because no useful purpose would be served by such observation. Modern inquirers, he said, would not dream of conducting fresh investigations into drugs without the aid of recent scientific knowledge, but, as a rule, they do not trouble at all about commercial conditions, or they assume that these have not been altered. It was a matter of regret to Flückiger and Hanbury that the sections in their book on the production and commerce of drugs were of unequal value, although they gave the most trustworthy information possible. Since their day the means of obtaining such information had been greatly extended, yet authors of text-books had been content to repeat the imperfect statements of 'Pharmacographia' in respect to the commercial features of drugs. Mr. Heap went on to compare the kind of knowledge that is taught to pharmaceutical students with that which is not investigated for them. Students were carefully told of the botanical characters and chemical constitution of drugs, and while he did not deny that the most minute inquiries on these points were both interesting and useful, still, he thought it would be quite as useful to divert some of the time thus spent to learning something of their commercial features. Which, he asked, is the most useful knowledge for every-day service, to know the names and characters of the three commercial descriptions that rhubarb is regularly divided into on the London market, and the value of each, or the minute botanical descriptions of rhubarb given in the text-books on materia medica? He thought there could be no doubt as to which was the most valuable to a buyer and seller of drugs, yet the only means at present of gaining such information is the market reports of the journals of pharmacy. He then showed how inaccurate statements with regard to the source of drugs is perpetuated from time to time, and from book to book, giving as an example the case of East Indian gum arabic. Watts' 'Dictionary of the Economic Products of India' stated that most of the so-called East Indian gum arabic was not Indian gum at all, but exported from Red Sea ports into Bombay to be re-exported to other countries. Much the same statement had previously been made in 'Pharmacographia,' the authors then believing that such was the case, although they had no positive proof, but it had since been proved to be incorrect, yet the 'National Dispensatory' for 1897 and even King's 'American Dispensatory,' just published, reproduced the statement as correct. For some years no aloes worth mentioning had been received from Barbados, yet an American journal of pharmacy recently mentioned as a remarkable discovery the fact that no true Barbados aloes are now to be had. The wholesale druggist, Mr. Heap said, buys one description of aloes—Curaçoa—which he sells as Barbados. Sarsaparilla on the London market is divided into six or seven kinds, yet the text-books make no note of the fact. Cardamoms are classed into two chief varieties, but few who do not follow the article on the market know it. Three descriptions of benzoin, at the most, are given in the text-books, while in the market buyers are accustomed to four, and so with other drugs. Mr. Heap then dealt with the commercial possibilities of drugs, and showed how by a study of the market reports of the weekly journals, pharmacists might utilise the knowledge so gained to their own pecuniary advantage. A series of pictures were then shown, by means of a lantern, tracing the progress of various drugs from the London warehouses back to their original sources.

The President expressed the pleasure with which all had listened to an intensely interesting lecture, and said it was important that every chemist should be able to distinguish the quality of drugs, but it was a singular fact that, as a rule, he was dependent upon the wholesale house.

Mr. J. Fothergill said the absence of so many members was to be deplored. They had missed a very interesting lecture. With regard to the descriptions of drugs in text books, it should be borne in mind that they were written for students, and the authors simply picked out the leading features of the drugs. It would be too much to expect a student to be intimately acquainted with all the kinds on the market.

Mr. H. Hymans, speaking from a chemical point of view, said he thought it was very important that pharmacists should know more about the commercial qualities of drugs, for he found on examining various samples, especially in the case of jaborandi leaves, that frequently the lowest priced quality was the highest in alkaloidal value. The same also applied to kino and other drugs.

Mr. G. Pearson thought the commercial study of drugs was all very well for a pharmacist to take up as a hobby, but the buying of drugs should be in the hands of experts.

Mr. Heap having replied, a hearty vote of thanks was accorded, on the motion of Mr. T. Morley Taylor, who echoed Mr. Fothergill's remarks about the absence of so many members. The character of the paper was a departure from the ordinary run of papers read before the Association and had been thoroughly appreciated.

NORTH STAFFORDSHIRE AND DISTRICT CHEMISTS' ASSOCIATION.

The annual meeting of this Association was held at Stoke-on-Trent, on Thursday, March 16, Mr. Jno. Averill, J.P., President, in the chair. There were present Mr. Walter Hills, President of the Pharmaceutical Society, Mr. W. Gowen Cross (Shrewsbury), and Mr. Rymer Young (Warrington), members of Council; Messrs. Edmund Jones, Hon. Sec.; T. C. Cornwell, T. Bentley, and Bottomley (Hanley); E. H. Croydon, C. J. Wain, and D. H. Oxen (Newcastle); F. W. Wrench (Silverdale); W. Oldham, T. Charles, A. P. Tiley, T. Briggs, and G. A. Waddingham (Burslem); W. Westhead (Stafford); T. H. Jenkins and F. Jacks (Stone); F. W. Goodman (Eccleshall); G. Fisher (Longton); W. H. Hartley (Leek); E. Booth (Crewe); W. Brinson (Liverpool).

The Secretary read his annual report, which showed that five monthly meetings had been held during the session, and useful work accomplished. The average attendance at these meetings had been seventeen. The Association had lost three members and gained seven, the membership now standing about forty. The Association had shown its interest in the pharmaceutical students of the district by arranging suitable classes in chemistry (theoretical and practical), botany, and microscopy, and had purchased two microscopes for the use of students. He regretted these advantages were not more utilised by the young men concerned, as there never had been better facilities for students in the district than at present. However, this was the first time that an attempt had been made to bring pharmaceutical students together for study. He hoped the members would interest themselves in these classes on behalf of their assistants and apprentices, and then doubtless much better results would follow. He looked forward to seeing a much larger number of pharmacy students attending these classes next session.

In the absence of Mr. Weston Poole (Treasurer) through an attack of influenza, the Secretary read the Treasurer's report, which showed a balance of £2 18*s.* 10*d.* Mr. Jones said he was sure all the members regretted the absence of Mr. Poole, who had proved himself one of the most active and valuable members of the Association. They would also regret the absence of Mr. F. Adams (Vice-President) and other members from the same cause, and wish them a speedy recovery.

Mr. Averill was unanimously re-elected President after some very complimentary remarks by several members, and cordially thanked for his past services.

Mr. Adams having previously expressed a desire to be relieved of the office of Vice-President, and Mr. J. W. Moore having left the district, Mr. E. H. Croydon and Mr. T. C. Cornwell were elected Vice-Presidents. Mr. Poole was thanked for his services and unanimously re-elected Treasurer.

The Hon. Secretary was also thanked for his services and unanimously re-elected. Before accepting the office again, Mr. Jones said he had intended to resign, and had actually written out his resignation to hand to Mr. Averill. He had to complain that a larger amount of work, responsibility, and worry was caused him by the thoughtlessness of members in not replying to special communications sent to them, especially on the occasion of dinners, suppers, and special meetings. He did not for a moment suppose that this was done intentionally, but as the responsibility lay on him he did think they ought to give him more assistance in the discharge of his duties as Secretary. The Association was formed in the interest of its members, and he thought they ought to be prepared to make some little sacrifice at times, as he and the President had done on many occasions, for the good of the Association and pharmacy generally. However, after the kind remarks which had fallen from the President and others, he would again accept the office of Secretary for another year.

Annual Dinner.

The annual dinner of the Association was held at the Copeland Arms Hotel, at the close of the annual meeting, when the chair was taken by the President of the Association, Alderman J. Averill, J.P. (Stafford). In addition to those present at the meeting, the company included the Mayor of Stoke-on-Trent (Mr. F. Geen), and Dr. Hatton, of Newcastle. Letters and telegrams of apology were read by the Secretary from several doctors and about fourteen chemists, most of whom were prevented from attending either by or in consequence of influenza.

After the loyal toasts, the President gave the toast of

The Pharmaceutical Society,

to which body, he said, the chemists of the country owed a deep debt of gratitude.

The President of the Pharmaceutical Society, in reply, after thanking the North Staffordshire Association for its invitation and kind reception, said he hoped for the time when there would be some scheme formulated whereby it would be possible to have local representation on the Council of the Pharmaceutical Society, because that would give more interest to the elections, but he was sure North Staffordshire could not be better represented than it was by his two colleages who were present that evening—Mr. Cross and Mr. Young. He would not, however, go into that question then, as he was sorry that the members of the Society were not altogether unanimous in the matter. He would confine himself to political matters. He was glad to think that during the time of his presidency the Council had passed a resolution whereby the future pharmacists in the country would be tested more thoroughly as to their general education. He referred to the educational scheme, but of that he would not say more, neither would he speak in detail as to the grand work done by the Society in connection with the Benevolent Fund, but would merely express the hope that in the future the Fund would be distributed with the catholicity and liberality which had hitherto obtained. He would like to speak to them more of the political questions which they had specially before them. Their President had alluded to the Pharmacy Acts Amendment Bill, in the passing of which he took a humble part. He thought that Act was a very wise one. He was sorry that the Bill was necessitated, but it was, and he thought they did wisely in getting it passed. He regretted with many others that when they had the Pharmacy Act of 1868 it was not insisted upon by the Legislature that every one should pass the Major examination and become a fully qualified pharmaceutical chemist. Owing to dissatisfaction among their ranks it was held by the Legislature at that time to be sufficient for the protection of the public that the Minor examination should be the statutory qualification for all those calling themselves chemists and druggists or who dealt with or dispensed poisons. Recent experience had shown that owing to one reason or another something like 87 per cent. of those who obtained the statutory qualification were satisfied with that qualification or did not see their way to go on to the higher qualification. Therefore, it was necessary in order that they should have a strong Society that they should have members throughout the whole of the country, and to do that they must allow each one holding the statutory qualification to be a member of the Society in the highest sense—members who were able to take part in all its proceedings and become members of its governing body. He was told when he went to the House of Commons that there was little chance of the Bill passing, but he was glad to say that, owing to the efforts of their friends throughout the country, and especially owing to the efforts of such local associations as that in North Staffordshire they were able without much difficulty to get that Bill through the Houses of Parliament. Now, he was glad to think every man who had the statutory qualification might become a full member of the Pharmaceutical Society. Having got to that stage they at headquarters naturally looked for some response to the efforts that had been made, for it was only natural, perhaps, that he, as the mouthpiece of the Society, should some few weeks ago address a letter to all the chemists and druggists on the Register who were not members of the Society. He was glad to say that a large number responded favourably, and up to the time when he was speaking very nearly 1500 had either been elected or had sent in application to become members at the ensuing meeting. While he said this he was not altogether satisfied with the number, and he hoped there would be twice that number in the next two months. Some of the replies, however, were not satisfactory, and were indicative of more or less hostility to the Society and also indicative of childishness. The Pharmaceutical Society now should be representative of all those who had the statutory qualification—the Pharmaceutical Society should be co-extensive with all registered chemists. The President then turned to the suggested draft Bill, which is now under the consideration of the Lord Chancellor. After the remarks made by the Lord Chancellor and the late Lord Herschell during the third reading of last year's Bill, it was only natural that they should again renew their efforts on the question of company trading. That question he wished to say had been considered by the Council with the very greatest care for many years; but it had been considered in Committee. They had been working quietly for some time in order to get some amendment to the Companies Act which would prohibit seven unqualified persons from entering a profession which, in the case of a natural person, would require special education and stiff examination. The General Medical Council had also taken the matter up, and after the expressions of the Lord Chancellor and Lord Herschell it was considered desirable to again take up the matter. The object of the Pharmacy Act was that the owner of every open shop where poisons were sold or dispensed should be a qualified person. This was, however, only a suggestion at present. It was a source of sorrow to him and others that the Pharmacy Act of 1868 was in many respects only a Poisons Act. It was an Act to protect titles to some extent, and it was also a protection to the public as regarded the sale of poisons. There was, as they all knew, no line of demarcation between poisons and non-poisons, and therefore he thought the dispensing of all medicines, whether containing scheduled poisons or not, should be in the hands of qualified persons. Speaking of dispensing by medical men, he said he believed that half the medicines supplied to the public were dispensed in the surgeries or dispensaries of medical men. While this state of things existed the condition of pharmacy could never be thoroughly satisfactory. They had to look at the question in a calm and dispassionate manner. First of all, what was reasonable? He thought all would agree with him that in the interests of the public as far as possible, the prescribing and dispensing of medicines should be performed by qualified men. He contended that the more medical men knew of the sciences of which they had made special study, and the more they (the chemists) were educated in theirs the less they would be willing to encroach upon the domains of the other. He thought they might reasonably expect that when dispensing was not done by medical men themselves it should be done only by qualified men, or under the direct supervision of qualified men. They would, however, first of all have to see that their own record was good, and before they could ask the medical men to do anything they must stop unqualified assistants having charge of branch shops. Not till then could they reasonably hope that the public would see what an advantage it would be to them if the dispensing of medicines was done solely by qualified chemists and druggists. He held it to be the duty of every chemist and druggist to send every case they received, except those of simple ailments to those who had made the cure of disease their study from the beginning of their career. It did seem hard, he admitted, to a chemist who found it difficult to make both ends meet, and then to see nothing of a prescription from the medical man to whom the customer had been sent. In conclusion, the President thanked the Association again for its hospitality, and wished it every success

Mr. Cross also responded. He repudiated the assertions that had been made that the Society was in search of guineas. It was members they wanted—not guineas. He was one of those who believed that the Society had done the best for its members as far as it could. Now they had a chance to rectify any mistakes that had been made and pursue a thoroughly democratic policy in future.

The toast of the "Medical Profession" was given by Mr. E. H. Croydon, and Dr. Hatton (Newcastle) responded by a neat and very appropriate speech.

The toast of "The North Staffordshire and District Chemists' Association" was humorously proposed by Mr. J. Rymer Young, the President of the Association and Mr. Edmund Jones (Hon. Secretary) replying.

Mr. W. Oldham gave "The Wholesale Houses," and Mr. Brinson (of Evans, Sons and Co., Liverpool) returned thanks. The Mayor of Stoke responded for "The Visitors," the toast being ably proposed by Mr. Cornwell. Mr. W. Hills, in an appreciative and complimentary speech, proposed the toast of "The Local Secretaries," to which Mr. Hartley and Mr. Cornwell responded. Some excellent songs were rendered by Mr. J. L. Forrester (Royal Apollo Glee Singers) and others. Mr. D. H. Oxen gave two humorous recitations. The meeting was a very enjoyable one, the visit of the President of the Pharmaceutical Society being much appreciated by the members of the Association.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

At a special meeting of this Association held on Wednesday, March 15, Mr. O. A. Reade occupied the chair, in the unavoidable absence of the President, Mr. C. J. Park.

A discussion on the

Suggestions for a New Pharmacy Bill

was introduced by Mr. J. Cocks, and the following resolutions were agreed to:—

That the term "Medicines" should be more clearly defined, and made to include the preparation and dispensing of such drugs only as are intended to be used in medical treatment, and not to cover ordinary drugs intended for general household uses.

That the Clause in the present Pharmacy Act, known as the "Widows' Clause," should be withdrawn, and one substituted affixing a definite time, of twelve months, during which the business of a deceased chemist might be carried on by his widow or executors, but that the Council of the Pharmaceutical Society should have the power to extend the period to an additional term, not exceeding six months, if special circumstances should in their opinion warrant it.

That wherever the word "Person" is used in the Pharmacy Act, the words "or persons" should be added, and that the proprietor or proprietors of every retail drug business should be qualified by examination under the Pharmacy Act.

The Forthcoming Council Election.

The following resolution was then passed:—

That this meeting desires to express the fullest confidence in the conduct of Mr. C. J. Park as a member of the Pharmaceutical Council, and pledges itself to render all possible assistance in promoting his return at the forthcoming election.

It was also unanimously resolved, on the motion of Mr. J. Cocks, to support Sir John Lubbock's Early Closing Bill.

The meeting, having discussed the

Sale of Food and Drugs Bill

recently brought into the House of Commons by the President of the Board of Agriculture, whilst in fullest sympathy with every effort made to maintain the purity of food and drugs and to prevent adulteration, was of opinion that the proposed Act is not calculated to bring about any great improvement outside the sale of agricultural products, and suggested the following amendments as necessary to be incorporated for the protection of the public and honest traders.

1. That a board of reference should be created consisting of twelve members appointed as follows:—Three principal chemists in laboratory, Somerset House. Three to be nominated by the Local Government Board. One to be nominated by the Board of Agriculture. One to be nominated by the Pharmaceutical Society. One to be nominated by the General Medical Council. One to be nominated by the London Chamber of Commerce. One to be nominated by the Institute of Chemistry. One to be nominated by the Federation of Grocers' Associations. Whose duties should be: To make necessary arrangements and appoint suitable persons who shall from time to time at any port of entry, quay, custom house, railway station, take samples from original parcels as imported of food and drugs and have them duly examined and analysed.

2. To decide what qualification or proof of competency shall be deemed necessary to be held by any person seeking an appointment as public analyst. To take such other steps as may be deemed necessary from time to time to enforce the carrying out of the Act in a fair and legitimate manner throughout the country.

The meeting also considered that where a food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation, the seller shall not be considered to have committed an offence under the Act. That whenever a prosecution is carried out and the reserved portion of the article in dispute has been examined by the chemists of Somerset House or other official referee, and declared by them to be pure, and the defendant therefore not guilty of the charge, all expenses incurred by him in the inquiry shall be ordered by the Court before whom the case is tried to be paid by the prosecutor.

A telegram conveying the best wishes of the meeting was despatched to the Bristol Association, which was holding its annual dinner that evening.

CHEMICAL SOCIETY.

On Thursday, March 16, Professor Dewar, LL.D., F.R.S., presided at the last ordinary meeting of his present year of office.

After the conclusion of the formal business, the President presented to the Society the promised original Daguerrotype of Dalton, and gave it into the hands of the senior Secretary, Mr. Wyndham R. Dunstan, for safe-keeping, with the understanding that the Council should suitably provide for its accommodation. He had much pleasure in announcing that Mr. Peter McEwan and Mr. S. W. Woolley had made the Society a present of an extremely interesting relic of Dalton, in the shape of a Christmas card, signed with his own signature, and accompanied by a list of elements and compounds, with their symbols, such as he distributed among his friends on the occasion of a visit of the British Association to Manchester in 1842.

Dr. Tilden, in proposing a vote of thanks to the donors, expressed the conviction that the Council would take care that these valuable curiosities were properly preserved. No doubt the chemical symbols were lithograph copies taken from the original, as written by Dalton himself. There was a pathetic interest attached to the original Daguerrotype of one who, more than any other, deserved the title of "Father of Modern Chemistry." The vote of thanks was carried with acclamation.

The President then called on W. O. Forster, Ph.D., to read a paper on the

Influence of Substitution on the Specific Rotation of the Bornylamine Series.

The investigation, which had for its object the determination of the relation of substitution to optical activity, gives somewhat different results from what might be expected from the theory formulated by Crum-Brown. As a matter of fact the rotations of the dialkyl derivatives of this series differ but slightly from those of the original base, *e.g.*, on comparing bornylamine, $C_9H_{15}\cdot CH\cdot NH_2$, $[\alpha]_D = +55\ 6°$, with the di-methyl derivate, $C_9H_{16}\cdot CH\cdot N(CH_3)_2$, $[\alpha]_D = +\ 59\ 6°$, it is seen that there is a difference of only 4° in the specific rotation of these two compounds.

Dr. Armstrong opened the discussion by lightly remarking that the paper showed that there yet remained plenty of original work for chemists to do, that was not reduced to mathematics.

Dr. Crossley and Dr. Lewkowitsch having spoken, the President asked the junior Secretary, Dr. Wynne, to read an abstract of a communication from Professor Ladenburg, entitled

A Contribution to the Characterisation of Racemic Compounds.

This was, in fact, a reply to a criticism on Professor Ladenburg's former test for racemic compounds, which has recently been made by Stanley Kipping and Pope. Professor Ladenburg modifies that test, which now stands as follows: Determine the solubility of the substance with and without the addition of an equal weight of the active substance. If the solubilities so obtained are different the substance is a racemic compound, if the same it is an enantiomorphic mixture.

Dr. Pope considered that the new test differed very little from the old, and expressed doubts as to its accuracy.

As the President said, Dr. Pope's remarks did not seem to close

the controversy, though Professor Ladenburg had hoped that his communication would have this effect.

Dr. Armstrong then took the chair, while Professor Dewar gave a brief account of his recent determinations of the

Boiling Point of Liquid Hydrogen.

After two months of fruitless effort, about a quarter of a litre of liquid hydrogen was prepared during the second week in March. The difficulty arose through small quantities of air that invariably get into the apparatus along with the hydrogen, and block the nozzle by a gradual process of accumulation. The platinum resistance thermometer at first used was calibrated to a range of temperature from + 100 to − 214° C. The figure obtained by this instrument for the boiling point of hydrogen was − 238° C, and Mr. Dixon, of Peterhouse, has obtained a similar figure by exterpolation. Another similar instrument gave the same result; while with an alloy of rubidium and platinum, the figure − 246° was obtained as the boiling point. The last-mentioned figure is the nearest to the truth in Professor Dewar's opinion, and accords best with the theoretical results of Wroblewski and Olszewski.

Further experiments will be made to determine the boiling point of hydrogen in terms of the air thermometer, using a hydrogen thermometer under diminished pressure. The extreme evanescence of liquid hydrogen is due to its latent heat being so low, *i.e.*, about one-third that of air.

Professor Armstrong, in congratulating the President on his skill, courage, and perseverance, expressed the opinion that he had appropriately ended his period of office, and it might truly be said of him that he had kept cool to the last.

A paper by Thomas Purdie, F.R.S., and James C. Irvine, B.Sc., entitled "The Rotatory Power of Optically Active Methoxy and Ethoxy Propionic Acids Prepared from Active Lactic Acids," having been taken as read, the meeting adjourned.

ROYAL INSTITUTION.

On Friday, March 10, a lecture was given by Professor H. L. Callender, M.A., F.R.S., on

Measuring Extreme Temperatures.

The lecturer explained that his original intention was to discuss the measurement of both extremes of temperature, but, though Professor Dewar had kindly offered the use of pints of liquid air, and though at the moment there was about a quarter of a litre of liquid hydrogen in the adjoining laboratory, he was compelled, for lack of time, to confine himself to the question of measuring high temperatures only. The difficulties of the subject received more attention from him than the achievements. The discrepancies in the results of different observers as to the heat of the sun were fully detailed. In attacking this great problem it is necessary to first measure the radiation from the sun and then determine the law of radiation. By calculation the heat of the sun may then be obtained. The discrepancies are in all cases due to the fact that the method of exterpolation, which was used, gave different results in each case. At this point the lecturer remarked that if he were lecturing to a popular audience he should feel bound to apologise for using the term. As, however, he was lecturing to the members of the Royal Institution, he should not apologise, but explain its meaning. This created some amount of amusement among the audience, to whom it was not quite clear whether or not the lecturer intended to be sarcastic. The experimental range of temperature measurement is at present limited to about 1200° on the absolute scale. The extension of this range is one of the main objects of present-day experimental research.

The lecturer went on to a comparison of the methods of high temperature measurement now in vogue, some of the most important being the platinum methods, in which the metals of the platinum group are employed. One of these methods depends on the expansion of platinum. Joli's meltometer is an excellent instrument of this class, though its use is restricted to metallurgical operations. The specific heat method is of more general application, but somewhat tedious. The principle involved is that the specific heat of the metal used increases uniformly with the rise in temperature. The thermo-couple method has given excellent results, using, *e g.*, a junction of platinum and palladium or gold and silver. Copper has so far given low results, probably from the fact that the cheapness of that metal has led the experimentalist to use too much of it; as a consequence too much heat is absorbed. The last method, also an electrical one, is the platinum resistance thermometer, which was invented in 1870 by Sir William Siemens, who took advantage of the fact that the resistance of a wire to a current of electricity increases as the temperature rises, and may be measured in the usual way by means of a Wheatstone's bridge.

The use of the gas thermometer has succeeded in approaching nearest to the absolute zero of temperature. It may yet be possible to extend the range of the instrument in the other direction. There are several varieties of the air thermometer for use in pyrometry, The various methods are: (1) the bulb methods, which may be concerned either with expansion of volume or increase of pressure; (2) an optical method, depending on change of refractivity; (3) an acoustical method, whereby the wave-length of sound is noted; (4) resistance methods, dealing either with effusion through a small orifice, or transpiration through a fine tube. The advantages and disadvantages of these methods were next discussed. The bulb pyrometer should be of porcelain instead of glass for very high temperatures, preferably of the form figured and described by the lecturer in the 'Philosophical Transactions,' 1887. The defects, however, are numerous. The volume of the bulb is liable to irregular changes of volume; this difficulty may be overcome by using a metallic bulb, but in that case, owing to the porous nature of the material, it is not possible to measure changes in volume of the gas. Porosity may give some trouble in the case of glass or porcelain, as also may leakage, while occlusion and dissociation may occasion further inaccuracies.

Professor Callender considered that the resistance methods have many advantages, and showed many careful experiments, proving the extreme delicacy with which the measurements may be made, by reflecting light from the mirror of a galvanometer upon a properly graduated scale. The operations are simple, rapid, and economical, the apparatus is highly sensitive, and among other advantages, there is only one scale to read. There is no question of leakage or porosity, and no irregular changes in volume have to be taken into account. The resistance of a tube to the passage of air is measured, because it is found that the resistance to effusion is proportional to the temperature on the absolute scale. The transpiration method has a serious defect, in that, as Maxwell has shown, the viscosity of a gas increases with rise in temperature, though not, as he thought, in direct proportion to the absolute scale. This has been proved by certain German workers. The lecturer concluded with an acknowledgment of the valuable services rendered by these workers in this field of experimental science.

On Saturday, February 25, the Right Hon. Lord Rayleigh, M.A., D.C.L., LL.D., F.R.S., gave the third of his interesting course of lectures on

The Mechanical Properties of Bodies.

The flow of water under various conditions was shown to be a complicated question; for example, when water flows from a nozzle under pressure, or from a hole in a tin canister, the flow is not in one direction only, since there are all grades of direction from the vertical to the almost horizontal. Even in the flow of liquid through a vertical tube of uniform cross section, a great difference in pressure exists. Thus, when the tube is full the pressure above is not equal to the pressure below, though the rate of flow is the same. If there happens to be a leak in the upper portion of the tube, air will enter, and this fact has been utilised in the case of the Sprengel air-pump, which is one of the best forms of apparatus for producing high vacua. In the case of water running horizontally in a given course, it is remarkable that, neglecting friction, the highest velocity is associated with the smallest pressure, while the converse also hold good. An example of this law may be found in the case of a vessel in a canal which is not much wider than the vessel itself. It may be noticed that the level of the water of the canal is lower amidships than it is at either bow or stern. The explanation of this apparent anomaly is found in imagining the vessel to be stationary. The water is rushing along the canal, and where there is the greatest speed will also be found the highest velocity, the lowest pressure, and consequently the lowest level. The common experiment of suspending a ball in a jet of water was varied by replacing the water by a stream of air from a compressed air cylinder. This led to the consideration of the forces acting on a surface exposed to a stream of wind.

Speaking of kites, Lord Rayleigh remarked that though a tail gives increased stability to a kite, yet its presence acts prejudicially, because the wind drags upon it, and consequently the kite does not fly so high. Many highly interesting facts were mentioned concerning the flight of birds. It is difficult at first sight to understand how a bird is enabled to remain poised up aloft without flapping its wings for minutes or for even hours. This may be noticed especially well in tropical countries. In India it is possible to see kites, vultures, pelicans, and other birds perform this feat. The explanation was long in being arrived at, chiefly due to a muddle, because two interested classes of people investigated the phenomenon only from their own standpoint. The naturalist explained the matter in a way that showed clearly how little he appreciated all mechanical considerations, while the physicist had few, if any, opportunities of making his own observations, and looked at the question entirely from a theoretical point of view. It appears, from Lord Rayleigh's observations, that where a wind strikes against an object, *e g.*, a wall, building, or hill, an upward current of air is set up. This current need not be very strong or quite vertical for a bird to avail itself of in mounting without trouble to itself. In hot climates it is the fierce heat of the sun that causes hot air to rise and set up a breeze, its place being taken by other air. On islands this phenomenon is easily noticed on hot summer days, creating what is called a sea-breeze, because the air which replaces that which was heated is drawn from the sea. There are cases, however, where there is no vertical current, and a bird is obliged to take advantage of the varying velocities of different layers of air. Thus a wind at one level may be of a different speed from the wind at a lower level. The bird will then pass from the lower to the upper stratum in going up-wind, and from the upper to the lower in going down-wind. At each change he then will gain a mechanical advantage. Gulls and albatrosses and other birds that fly just above the water especially avail themselves of this principle, but they can only do so when a strong wind is blowing. Vultures are, however, remarkable for their power of floating motionless in the air, even when there is no wind blowing. One observer has put forward the theory that they take advantage of the instability of a mass of heated air just above the surface of the ground. The bird has then only to perform a circle or two in this unstable layer to upset the equilibrium, and set it in motion. The fact that a second bird starting from the same point soon after was able to mount without attempting to disturb the equilibrium by a preliminary circular sweep lends colour to the theory.

NEW REMEDIES.

Hydrogen Peroxide as an Antemetic.—P. Gallois and Bomrel find that hydrogen peroxide is equally useful as a remedy for the vomiting of pregnancy and in preventing the sickness which frequently follows the ingestion of food with phthisical patients. A tablespoonful of the peroxide is added to a litre of drinking water, which the patients take *ad libitum* during a meal.—*Nouv. Rem.*, 14, 150.

Cocaine in Dermatology.—P. Unna employs a dusting powder composed of cocaine hydrochloride, 0·5 to 1 gramme, magnesium carbonate, 10 grammes, to render cauterisations or scarifications less painful. The parts are dusted with this mixture, then covered with a piece of moist aseptic cotton held firmly in place with slight pressure for 10 or 15 minutes. The same authority finds that cocaine alkaloid is markedly more effective than its salts for producing anæsthesia of the unbroken skin. Thus, to relieve itching, he employs sponging or dressing with the following: Cocaine alkaloid. 1 to 2 grammes; Hoffman's solution, 50 grammes; collodion, 1 gramme. Or the following oil: Cocaine alkaloid, 1; oil of sweet almonds, 50; dissolve.—*Nouv. Rem.*, 14, 190, after *Sem. Med.*

Quinine Sulphocresotate.—This salt, which occurs in yellow scales, which are readily soluble in water, giving permanent solutions, is employed by Tarozzi as an internal antiseptic. The maximum dose in twenty-four hours is 1 gramme.—*Zeit. des allg. Ost. Apoth. Ver.*, 52, 515.

Ipecacuanha in Epilepsy.—C. K. Bond reports a case of epilepsy successfully treated with increasing doses of ipecacuanha. Beginning with 10 minims of the wine, the dose was gradually increased to 40 minims. The severity and number of the attacks gradually diminished, until a complete cure appeared to have been effected.—*Lancet*, Sept. 17, 75, 1898.

EXTRACTS FROM CONSULAR REPORTS.

The Makers of Olive Oil in Calabria complain that their oil is taken abroad, mixed with inferior stuff, adulterated in every possible way, and then re-sold to a confiding public. To remedy this, according to a recent report, they propose to establish commercial agencies in the chief foreign markets, and to remove the oil in bulk to the care of the agents, thus giving the foreign buyer the chance at least of obtaining a pure article. They point out that a sample of oil is very poor criterion of the quality of the bulk, for a sample repeatedly opened and lying perhaps for months on an agent's desk will deteriorate, while the oil in bulk will retain its quality.

A Short Olive Crop is expected this year in Calabria, great complaints being made of the ravages of the *Dacus oleæ*, a small fly which lays its eggs in a lesion made by its spur in the olives. The larvæ tunnel the fruit, leaving only the shell and the stone.

The Purity of Essence of Bergamot, those interested in the manufacture of perfumes will probably be glad to note, is at present occupying the attention of the Calabrian authorities, who are making great efforts to detect and prevent adulteration. The essence has, hitherto, been largely adulterated with lemon juice, consequently the Chamber of Commerce of Reggio sent samples of the essence to the Agricultural School of Palermo for examination, and asked for information on two points—first, whether a method could be suggested for discovering adulteration; and second, whether the perfume of essence of bergamot arises exclusively from the "linalile" contained in it. The replies obtained are considered to be unsatisfactory, as the tests proposed — such as the polarisation of light — are thought not to be sufficiently practical for the use of ordinary people. In August, 1897, a law was passed by the Italian Parliament against the adulteration of essences, but according to the report of Consul Neville-Rolfe it will be inoperative as far as bergamot is concerned on account of the present unsatisfactory chemical methods for the detection of adulteration.

The Export of Bergamot from the Calabrias in 1896 was 180,835 kilos., at 19·02 lire the kilo. Although this is a low price, the average price during the last ten years being 22 lire, it having realised as much as 32 lire the kilo in 1891, it is still a higher price than is paid for essence of lemon, 13·05 lire being the average, and of orange 13·22 lire. Thus it will be seen that until the adulteration of bergamot with lemon juice can be easily detected there is great temptation to increase the quantity of the more expensive essence by the addition of the cheaper one.

A Good Opening for Perfumery Works is to be found in Southern Italy, so, at least, the British Consul for the district is of opinion. He points out that the flowers of the orange and lemon trees so carefully collected in the South of France are allowed to rot upon the ground in South Italy, and may be had in any quantity for the asking. Roses and many other scented flowers are said to grow in wonderful profusion, while alcohol, at one time one of the main productions in the district, is still produced in large quantities, and bergamot, the active ingredient of many scents, is to be had in plenty.

The Importation of Chemical Products of all kinds into France decreased from £4,500,000 in 1896 to £4,380,000 in 1897, while the exports increased from £2,500,000 to £3,016,000 in 1897. Nitrate of soda takes the first place in the imports with a total of £1,620,000 in 1897, as against £1,800,000 the previous year. Sulphate of copper comes next in the list, then tar products, chemical manure, ammoniac salts, superphosphates of chalk, etc. Nitrate of soda is imported almost exclusively from Chile; sulphate of copper from England; tar products from England, Belgium, Germany and Spain; chemical manures from Belgium, Germany, and England; ammoniac salts from England and Belgium; and superphosphates of chalk from Belgium, England, and Germany.

The Principal Chemicals Exported from France are manures (which increased from £164,000 in 1896 to £396,000 in 1897), glycerin, raw tartar, potash and carbonate of potash, cream of tartar, vegetable dyes, and superphosphates of chalk.

LETTERS TO THE EDITOR.

The Determination of Uric Acid in Urine.

Sir,—Permit me to draw attention to a practical point in connection with F. Gowland Hopkins' "Method for the Determination of Uric Acid in Urine." In the ninth line of your report of Dr. Luff's description of the method (*P.J. ante*, p. 266) it is stated that the precipitate (ammonium urate) is to be washed three or four times with a saturated solution of ammonium chloride. It will, however, be of considerable advantage if the precipitate is washed with a saturated solution of ammonium sulphate in place of the am. chlor. solution, (1) because the am. sulph. solution dissolves any excess of am. chlor. on the filter; (2) because, in view of the subsequent use of potassium permanganate solution, it is necessary to get rid of chlorides.

London, March 17, 1899. A. B. Passmore.

The Strength of Solution of Strychnine Hydrochloride, B.P.

Sir,—In last week's Journal I brought before your readers two corrections which I hoped they would make in their copies of the 'Companion.' Another correction has been proposed, viz., to substitute 1/5th for 1/6th on page 611, line 14. Until, however, the controversy with regard to the composition of strychnine hydrochloride is definitely settled the figure given in the 'Companion' should stand, and in any case it is sufficiently near for the purpose of the note.

London, March 21, 1899. P. W. Squire.

The Chemists' Ball.

Sir,—I beg to inform you that at a Committee meeting of the Chemists' Ball held to-day at 17, Bloomsbury Square, the Secretary reported that he had handed to the Treasurer a balance of £30 from the 1899 ball. A sum of 25 guineas was voted to the Benevolent Fund.

London, March 20, 1899. W. Warren, *Hon. Sec.*

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Homœopathic Tincture.—The strength of the mother tincture is calculated on the basis of the dry plant, so that all the soluble matter of 1 grain of the dry plant may be contained in 10 minims of the tincture. [*Reply to* A. G. W.—25/3.]

Use of the Title "Pharmacy."—The question of the use of the title by unregistered persons has never been raised in a court of law, but the terms of Section 12 of the Pharmacy Act, 1852, might be held to restrict the use of the title to persons duly registered as pharmaceutical chemists. [*Reply to* J. W.—25/9.]

Botanical Collecting Case.—You can obtain one of Messrs. Watkins and Doncaster, 36, Strand, London, W.C., or of any dealer in natural history appliances. A portable press suitable both for field work and for subsequent drying is sold by Messrs. Poths and Co., 4, Gracechurch Lane, Leadenhall Street, E.C. [*Reply to* C. I. J.—24/31.]

Book on Essential Oils.—Idris' 'Notes on Essential Oils (London: Geo. Da Boisel and Co., Broad Street House, E.C. Price 3*s.* 6*d.*), is the most recently published work on the constitution and analysis of essential oils. The most comprehensive report on the subject is Bornemann's "Die flüchtige Oele," but there is only a German edition of this. [*Reply to* W. A. K.—25/10.]

How to Become a Dentist.—See the article under this heading in the Journal for September 10 last. [*Reply to* G. R. T.—25/4.]

Botanical.—Your plant is *Mercurialis perennis*. Holmes' 'Botanical Note-Book' (Dulau and Co., 1*s.* 6*d.*) and Hayward's 'Botanists' Pocket Book' (G. Bell and Co., 4*s.* 6*d.*) are the best books for your purpose. [*Reply to* J. W. H.—25/14.]

Thiocol.—It is the potassium salt of guaiacol-sulphonic acid, containing 60 per cent. of guaiacol, and its action resembles that of guaiacol. It has been introduced to replace creosote and guaiacol in the treatment of tuberculosis. Thiocol is readily soluble in water, but is usually administered in cachets each containing 0·25 Gm. of the remedy. One such cachet is to be taken twice to four times daily. [*Reply to* E. E. I.—25/11.]

Formulæ for "Liquors."—It is not clear what is the nature of the formulæ you require, but preparations on the lines of the U.S.P. liquid extracts may serve your purpose for Nos. 1, 3, 4, and 6. No. 2 is official in the B.P. No. 5 is presumably a tincture made stronger than the official article, as Nos. 1 and 4 may also be, for that matter. You will find many useful hints for the construction of formulæ in Braithwaite's 'Pharmaceutical Formulary' (Churchill, 6*s.* 6*d.*). [*Reply to* R. M.—25/6.]

Syrupus Glycerophosphatum.—Robin's formula appeared in the *P.J.* for June 22, 1895, but is repeated here:—Calcium glycerophosphate, 6; sodium, potassium, and magnesium glycerophosphates, each 2; iron glycerophosphate, 1; tinct. ignatiæ amaræ, 2; pepsin, 3; diastase, 1; tinct. kolæ, 10; syr. cerasi, to 200. All the ingredients are to be weighed, and the resulting bright cherry-red syrup should be free from deposit. Tincture of nux vomica may be used instead of tinct. ignatiæ amaræ. [*Reply to* H. L. S.—25/13.]

Marsh-mallow Cough Syrup.—Syrup of Virginian prune, 2 fl. oz.; oxymel of squills, 2 fl. oz.; ipecacuanha wine, 1 fl. oz.; syrup of marsh-mallow, U.S.P., to make 10 fl. oz. The last is prepared as follows. Marsh-mallow root cut small, 4; alcohol (94 per cent.), 3 fl. parts; glycerin, 10 fl. parts; sugar, 70; water to produce 100 fl. parts. Wash the root with cold water and reject the washings; then macerate it in water 40, to which the spirit has been added; let stand for one hour, strain without pressure. Dissolve the sugar in the liquor, without heat; add the glycerin and enough water to make up to 100 fl. parts. [*Reply to* S. H.—25/8.]

Compound Syrup of Trifolium.—The following is an American formula for this: Fluid extract of liquorice, 24 fluid parts; fluid extract of red clover, 24 fluid parts; fluid extract of burdock, 12 fluid parts; fluid extract of stillingia, 12 fluid parts; fluid extract of *Phytolacca decandra*, 6 fluid parts; fluid extract of *Xanthoxylum*, 3 fluid parts; fluid extract of *Berberis aquifolium*, 12 fluid parts; fluid extract of cascara (tasteless), 12 fluid parts; glycerin, 20 fluid parts; spirit (94 per cent.), 20 fluid parts; water, 60 fluid parts; sugar, 120; potassium iodide, 5½; oil of sassafras, $\frac{1}{8}$th fluid part; oil of wintergreen, $\frac{1}{10}$th fluid part; oil of anise, $\frac{1}{32}$nd fluid part. [*Reply to* G. H. P.—24/30.]

Furniture Polishes.—(*a*) Pearlash, 1; soft soap, 4; beeswax, 8; water, 80. Boil together for thirty minutes, then remove from fire and stir till cold. If not thin enough, add more water. (*b*) Soft soap, 2; turps., 12; water, 6. Rub the soap smooth with water, 4; gradually add the turps., rubbing in thoroughly; and lastly the water. If not thin enough, add more of the latter. (*c*) *Varnish Polish:* Shellac, 2; linseed oil, 14; benzoin, 2; amber resin, 2; oxalic acid, 1; methylated spirit, 24. Macerate the solid ingredients in the spirit for twenty-four hours, decant, and add the oil. Shake well before use. The furniture should be thoroughly cleaned before applying the polish. (*d*) Linseed oil, 12; vinegar, 6; methylated spirit, 6; solution of antimony chloride, 1; Mix. Shake well before using. [*Reply to* W. W.—25/7.]

Hair Wash.—The following is said to be the original formula for Erasmus Wilson's hair lotion:—Almond oil and strong solution of ammonia, each 1; spirit of rosemary, 4; honey water, 2. To reduce the cost of this, you might replace part of the spirit by water. An inexpensive hair wash may be prepared by dissolving soft soap, 4, in 60 per cent. alcohol, 8, then adding a mixture of rosemary oil and tincture of quillaia (say, 1 to 4), 1, and distilled water, 32. [*Reply to* J. B. H.—25/16.]

OF SURGEONS OF

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Assay of Emplastrum Belladonnæ. Frank X. Moerk publishes a process for assaying the emplastrum belladonnæ, U.S.P., 1890, depending upon the decomposition of the soap and of the lead salts by sulphuric acid. The plaster differs from that of the British Pharmacopœia in containing soap plaster. It is prepared by incorporating 20 grammes of the extract of belladonna with 40 grammes each of resin plaster and soap plaster. Ten grammes of the plaster are placed in a beaker and covered with a mixture of 1 C.c. sulphuric acid (92·5 per cent. by weight) and 15 C.c. of water. The plaster is disintegrated by stirring, as heating causes the lead sulphate and fatty acids to separate out in a pulverulent form that is difficult to manipulate. The acid solution is filtered into a separator and the residue in the beaker treated with successive portions of acidulated water (2 C.c. of sulphuric acid in 500 C.c.), two portions of 10 C.c. each being followed by three 5 C.c. lots. To the mixed filtrates in the separator are added 25 C.c. of ether-chloroform and 10 C.c. of 10 per cent. ammonia water, and the process is completed on the lines laid down by C. C. Keller. The assay is effectually blocked by the formation of a persistent emulsion. The author finds that the addition of a small quantity of stearic acid, say 10 or 15 milligrammes in several small fragments, is effectual in separating the emulsified alkaloidal solvent, and that by adding it before agitating the alkaline solution with the solvent serious emulsification may be prevented. Experiments were made to determine to what extent the stearic acid interferes with the accuracy of the assay. From these it appears that the influence exerted by the stearic acid does not exceed 0 05 C.c. of the hydrochloric acid used in the test assays, corresponding to about 0·005 per cent. of alkaloid on the basis of 20 grammes of leaves, or about 0 01 per cent. on the basis of 10 grammes of leaves. The plaster prepared from an extract made with cultivated English leaves gave from 0 371 to 0·570 per cent. of alkaloids, the German wild and cultivated leaves giving figures ranging between 0 3003 and 0·3445 per cent.—*Am. Journ. Pharm.*, **71**, 110.

Fungi of Rotten Fruit. The fungi which cause the rotting of fruit—apples, pears, plums, cherries, apricots, grapes, currants, tomatoes, walnuts, etc.—are, according to Dr. J. Behrens, *Botrytis vulgaris*, *Penicillium glaucum*, *P. luteum*, *Mucor stolonifer*, and *Oidium fructigenum*. Of these the first differs from the others in attacking all parts of the plant, producing a poison which kills living protoplasm.—*Centralbl. f. Bakteriologie*, 2te Abth., 4, 1898.

Carbohydrates in Bulbs and Tubers. M. Leclerc du Sablon states that the reserve food materials in underground organs always consist essentially of carbohydrates, such as starch, inulin, dextrins and sugars, separately or associated with one another. In the tubers of the potato, the rhizomes of *Arum* and *Iris*, and the corms of *Colchicum* and *Ranunculus*, they are formed almost exclusively of starch, with small quantities of dextrin and sugar. In the tubers of *Ophrys* and the bulbs of *Lilium*, *Tulipa*, and *Hyacinthus*, starch is associated with dextrins; in the corms of *Ficaria* with dextrin and non-reducing sugars. In the tubers of *Dahlia* inulin and levulin is found; in the tubers of the artichoke inulin, levulin, and non-reducing sugars; in the bulbs of *Allium* and *Asphodelus* chiefly reducing and non-reducing sugars. The digestion of the carbohydrates is a very uniform process. Starch is transformed into dextrin, then into non-reducing sugars; then into reducing sugars. With inulin the process is the same, except that levulin takes the place of dextrin, and the last term is not glucose but levulose. *Stachys tuberifera* is exceptional in forming galactan, a carbohydrate intermediate between dextrin and sugar. In all cases the digestion of carbohydrates is due to the action of a diastase. In the formation of carbohydrates the processes are as a rule the inverse of those which take place in their digestion. In biennials the reserve-materials are formed during the first and digested during the second year, with an intermediate period of rest. In perennial organs, such as the rhizomes of *Arum* and *Iris*, the tubers of *Dahlia*, etc., the amount reaches its maximum at the commencement and its minimum at the close of each period of vital activity. During the period of repose active internal changes are going on, due to the action of diastases formed from the protoplasm.—*Bonnier's Rev. Gén. de Bot.*, **10**, 1898.

Germinating Power of Winter-Spores. The time during which the spores of parasitic fungi retain their vitality is a question of considerable practical importance for agriculture. Professor J. Eriksson states that in the case of the Uredineæ examined—*Puccinia graminis* and *P. coronata*—the hibernating spores are capable of germinating only in the spring immediately following the autumn in which they are produced.—*Centralbl. f. Bakteriologie*, 2te Abth., 4, 1898.

Poisonous Fungi. Professor G. Arcangeli records a case of poisoning in Italy by *Amanita verna*, which, however, he regards merely as a variety of *A. phalloides*. He gives the following list of seven species of poisonous Italian fungi: *Amanita phalloides*, *A. muscaria*, *A. panterina*, *Armillaria tumescens*, *Pleurotus olearius* *Bo'etus luridus*, *B. satanas*.—*Atti Soc. Tosc. Sci. Nat.*, 11, p. 92.

Proteid Formation in Green Plants. Bernhard Jacobi's recent researches throw considerable light on proteid formation in green plants. The special centre for the synthesis of proteids is the foliage leaf. The process may be begun in darkness in those cells participating directly in proteid formation, since carbohydrates react with nitric acid, ammonia, or amides to this end; nevertheless, how far the process progresses depends on the amount of available carbohydrates. If the latter are present in abundance, the formation of proteids will take place; with small amounts of carbohydrates the process ceases in darkness with the formation of amides. The natural supply of carbohydrates can only be augmented to an adequate amount by providing, through the access of light, the conditions necessary for assimilation of carbon dioxide. In this case the light co-operates indirectly in the synthesis of proteids. The special source of energy is supplied by the carbohydrates themselves; however, in many cases, light also appears to play a part as a source of energy.—*Biologisches Centralblatt*, through *Bot. Gazette*, **27**, 148.

Botanical Source of Myrrh. During the past week specimens of the bark, gum, and leaves of the true myrrh tree, collected from the same plant, have been received from Somaliland for the Museum of the Society. These specimens were collected from the same tree by Mr. and Mrs. Lort Phillips, and clearly prove that the plant figured in Bentley and Trimen in the 'Medicinal Plants' is the true myrrh, and that *Commiphora myrrha* of Engler and the *C. schimperi* and *C. abyssinica* are not the plants recognised by the Somalis as the source of myrrh.

UGANDA ALOES.

BY W. A. H. NAYLOR AND J. J. BRYANT.

We think it may be of interest if we supplement the observations of Mr. E. M. Holmes (*P.J.* [4], 8, 238) on this new variety of aloes by placing on record some experiments made by us with a view of ascertaining the kind of aloes to which it is most nearly related. Our examination has been confined to the brick wrapped in red paper marked "Crown" and to the "chips." As the results from both are identical, there can be little doubt that they represent parts of the same manufacture.

The *aloin* was determined by Schaefer's process, the main feature of which is the formation of an aloin-calcium compound and its decomposition by hydrochloric acid. For a brief outline of this process see 'Year-Book of Pharmacy,' 1898, p. 178.

The *aqueous extractive* represents the portion dissolved by hot water, filtered when cold, the filtrate evaporated on a water bath, and the residue subsequently dried at 100° C.

A *bromine compound* was obtained by dissolving the aloin in water, adding an excess of bromine water, collecting the yellow precipitate, and crystallising it from 90 per cent. alcohol. The bromaloin separated out from the concentrated alcoholic solution in crystalline plates.

The action of *nitric acid* on the aloes is to produce at first a crimson red, which gradually turns to brown, and finally passes into green. On ignition the aloes left 0 919 per cent. of mineral matter.

From these results it will be seen that Uganda aloes approximates in character and tests to Cape aloes, a good average sample of which we have recently examined. For purposes of comparison the results of the two are presented in the annexed form :—

Sample.	Aloin.	Aqueous Extractive.	Inorganic Matter.	Moistened with HNO_3 on a white Tile.	Bromine Product.	General Description.
		P.c.	P.c.			
Uganda ..	Cake, 6·16 p.c. Brick, 5·9 p.c.	80·300	0 919	First crimson red, gradually becoming brown, and finally green	In yellow crystalline plates, readily soluble in 90 p.c. alcohol	A reddish-brown colour, with a chippy rather than resinous fracture, a pronounced aromatic odour, and a very bitter taste
Cape ..	6 5 p.c.	85·440	0 505	First crimson red, gradually becoming brown, and finally green	Yellow and granular, not crystalline, readily soluble in 90 p.c. alcohol	A deep reddish-brown colour, with a greenish tinge, a glassy fracture, an odour less aromatic than Uganda, and a bitter taste

ANTISEPTIC MOUTH WATER.—(1) Thymol, 0 25 ; benzoic acid, 3 ; tincture of eucalyptus, 15; alcohol (90 per cent.), 100 ; peppermint oil, 0·75. Ten to fifteen drops in a glass of water. (2) Thymol, 0·30 ; compound spirit of melissa, spirit of horseradish, aa 30 ; tincture of kameria, 50 ; peppermint oil, 0·50 ; clove oil, 0·10. Ten drops in half a tumbler of water. (3) Tincture of myrrh, 5 ; spirit of lavender, 95 ; saccharin, 1. Half a teaspoonful in a glass of water. (4) Saccharin, 5 Gm. ; alcohol (68 per cent.), 200 Gm. ; peppermint oil, 10 Min. Half a teaspoonful to a glass of water. (5) Eau de Cologne and rose water, aa 50; saccharin, 1. Half a teaspoonful in a glass of water.—*Pharm. Post*, 32, 39.

THE STUDY OF STARCH GRAINS AND ITS APPLICATION.*

BY HENRY KRAEMER.

(*Concluded from page 283.*)

MICRO-PHYSICAL EXAMINATION OF STARCH GRAINS.

Starch grains generally occur in isolated grains. Not infrequently, however, they are found in groups of 2 to 4 grains, when they are distinguished as 2-, 3-, or 4-compound. In rice they are from 4- to 100-, in oats as many as 300-, and in spinach as numerous as 30,000-compound. The individuals of compound grains are in some cases easily separated from each other. This separation of the grains occurs frequently in the mounting of the specimen, and is especially noticeable as a result of the processes to which the plant has been subjected in the manufacture of food and medicine. The single grains thus separated are more or less angular. It sometimes occurs that a single starch grain possesses apparently two points of origin of growth, when it is spoken of as being half-compound.

While there is considerable variation in the shape of the grains isolated from different species of plants, there is also a greater variation in the grains from different, or even the same, plants of the same species. This variation more frequently occurs than is generally supposed, so that the greatest care must be exercised in utilising the shape alone in determining the botanical source of the grains present in the specimen under examination. There is also considerable variation in the size of the grains not only from the same plant, but even in the same cell.

Some foods and drug products are variously treated in preparing them for the market, and there is necessarily more or less of an alteration of the typical starch grains. For instance, they may be treated over the naked fire as a jalap root, or moistened and dried either by exposure to the sun or near a fire as in guarana, or in hot water as aconite tubers. In such cases the starch grains are changed to swollen masses or are more or less corroded.

One of the most striking properties of starch grains is that when viewed by polarised light they show a neutral cross which extends from the point of origin of growth to the periphery of the grain. This neutral cross appears to turn as Nichol's prism is revolved and to produce the various colours of the rainbow. We likewise find that starch grains from different sources do not behave alike towards polarised light. The distinctness of the cross, as well as the kind of colours produced, as Nichol's prism is revolved, varies considerably, and we are inclined to the opinion that this subject is well worth careful study from a practical, as well as scientific, standpoint.

MICRO-CHEMICAL EXAMINATION OF STARCH.

It has already been shown that most starch grains give a blue colour when treated with iodine solutions, but that some are turned red by the employment of this reagent. It is supposed by some investigators that there is an actual chemical combination which takes place between the iodine and starch. Meyer, on the other hand, does not consider the so-called iodide of starch to be either a chemical combination or a mechanical mixture, but says that it is "ein wohl definirte blaue Lösung von Iod in Stärke."

It ought to be borne well in mind that between the pure blue and red reaction of starches, intermediate colours may be produced, depending on the varying amounts of dextrin present.

Another important fact that may be mentioned in this connection is that if the aqueous solutions of iodine contain hydriodic acid, or if alcoholic solutions contain ethyl iodide, there is produced according to the amount of these foreign substances, as well as the

*Address to the Pure Food and Drug Congress, Washington, D. C., January, 1899. Communicated by the author.

character of the starch, colours which vary from yellowish or reddish-yellow to reddish or reddish-blue, or even purple.

The starch in plant cells which is still surrounded by the plastids or imbedded in other materials, as resin, may be determined by means of a chloral-iodine solution, which clears the other substances and causes a swelling of the grains which are at the same time coloured blue. It is useful in certain cases when much resin is present to dissolve out the starch by heating the sections in glycerin, and on the addition of excess of water the starch will separate from the solution in the form of minute grains.

A still more characteristic property of starch grains is that when they are heated in contact with water to 45-77° C., they swell and form a pasty mass. The temperature at which the different starches begin to form a paste is likewise deserving of practical consideration.

Not only do starch grains swell when heated with water, but they swell upon treatment with various reagents, as chloral, potassium hydrate, chlor-zinc-iodide, chloral-iodine, etc.

Various investigators since the time of Nägeli, who appears first to have experimented with the action of saliva on the starch grain, have used this and other ferments, as well as other substances, as reagents in the examination of starch. All of this work has been done by botanists, and has been for the purpose of ascertaining the composition and structure of the starch grain. There is, however, a very practical application to be made of the character of the interaction between reagents and starch grains; considering in this connection the amount of time and temperature required to complete the reaction; and the strength of reagent, etc. The writer has made some experiments, in connection with Florence Yaple, on commercial starches, as well as the starches in the cells of the tuber of potato and fruits of wheat and corn, with the following reagents:—

(1) Chloral iodine+iodine solution; of each 5 parts.
(2) Chlor-zinc-iodide solution.
(3) Chromic acid solution (15 per cent.).
(4) Calcium nitrate solution (30 per cent.).
(5) Chloral solution (saturated), water and glycerin; of each 3·3 parts. To this solution as much iodine is added as the solution will take up.
(6) Saliva.
(7) Silver nitrate (2 per cent.).
(8) Sulphuric acid (C. P. acid 90 parts and water 10 parts).
(9) Taka diastase (saturated solution).
(10) Sodium acetate solution (50 per cent.).
(11) Potassium hydrate solution (1/10th of 1 per cent.).
(12) Potassium nitrate solution (saturated).
(13) Tannin solution.
(14) Potassium phosphate solution (saturated).
(15) Hydrochloric acid.

The numerous drawings which we present, indicate that there are characteristic results obtained by the use of these reagents. I will not take the time, however, to consider the details of the aforesaid experiments, as they will be incorporated in a subsequent paper to be presented before the Cincinnati Section of the American Chemical Society.

An examination of the commercial starches shows that there are certain amounts of impurities associated with them which may further serve as a means of identification. Meyer has shown that potato starch contains from 0·27 to 0 62 per cent. of mineral substance; the amount of water is generally about 20 per cent.; and that it generally contains about 0·322 per cent. of nitrogen; there is also present a body which is soluble in ether and which gives a bad odour on heating a solution with hydrochloric acid. The starch may be purified by washing with water containing ammonia which does not alter the starch grain as potassium hydrate does.

Wheat starch of commerce reacts acid and contains lactic acid, acetic acid and protein matters. Rice starch gives an alkaline reaction.

Application of this Knowledge.

From what has been said it is apparent that we are for the most part indebted to botanists and pharmacognocists for the advancements made in our knowledge of the constitution and composition of starch grains. This follows as a natural sequence of their studies in the plant kingdom. It may be noted that there are many facts at the command of the student of botany which may be turned to practical account in the study of this and similar subjects. It has been shown in this article that micro-physical and micro-chemical examinations reveal an abundance of information which might be turned to practical account in the study of plant products containing starch. I am aware that this Congress has met to secure the desired legislation on pure foods and drugs and prevent undesirable amendments, but it is extremely important that it shall also consider what departments of science shall furnish the judges, who shall determine what the standards of purity shall be. It is exceedingly important, and, indeed, absolutely necessary that every precaution should be taken to insure the public who use the foods and drugs, as well as the business man who manufactures and supplies these products, that there is a standard that can be determined and that is just and fair. It is very manifest, from the complications which have arisen by reason of food and drug legislation thus far enacted, that a certain amount of odium attaches to pure food and drug laws. This arises because of the difficulty of securing officers who understand either natural and practical conditions in the manufacture or commerce of these products, and who have been sufficiently trained and developed in all of the sciences which are involved in the study of the origin and manufacture of them, so as to comprehend the possibilities of either truth or error. Unless there is an advance in the action of this Congress in deciding who are to be the judges of purity and adulteration in foods and drugs over that of previous legislative acts, it is not unlikely that considerable trouble and annoyance will be caused to the most conscientious manufacturers and business men rather than those who wilfully adulterate or admix their products. One of the first steps of this Congress should be to make sure that there is sufficient scientific knowledge at our command which can be utilised in establishing standards of purity, etc., and that there are sufficient competent practical persons able to carry on this work with justice to consumer and producer. A legislation that is based on ignorance is arbitrary and is surely not what this Congress desires. The legislation must be based on knowledge—and this knowledge must be manifest not only in the ability of legislators to frame laws, but they must see far enough that in the application of the laws through the judges of standards, it is not the manufacturer or seller of pure foods and drugs that is to be inconvenienced, but that he who adulterates these products shall be punished.

Some years ago it was considered necessary to present arguments upon the value of the microscope in the study of drugs. It is noteworthy that during the past year scarcely a paper has appeared on this subject in the pharmaceutical world, and it appears that all of our colleges and schools of pharmacy are utilising the simple and compound microscope and giving a more or less thorough training in the study of botany (particularly of the plant cells and their contents), preparatory to the study of crude and powdered

drugs, foods, etc. It has been shown by the author on a number of occasions that the microscope is not only sufficient, but absolutely necessary in some cases in determining the purity of a drug, food, or spice. It is needless to repeat that this instrument is safe only in the hands of him who is thoroughly trained in the sciences, the subjects of which are involved. The products of the animal kingdom can only be examined authoritatively by the zoologist; those of the plant kingdom by the botanist, etc. It may be necessary to illustrate the above remarks with one or two examples, indicating the value of the microscope to the specialist. Recently a sample of black pepper was submitted to the writer which was supposed to have been adulterated with cayenne paper. A chemical examination gave no clue to the problem. But by means of the microscope the adulterant was detected with certainty. Some years ago a fruit jelly was upon the market, which was sold at an unusually low price. It was naturally supposed to be adulterated, but with what was not known until, by means of the microscope, the presence of a diatom (*Arachnoidiscus ehrenbergii*) was revealed. The next question was where and upon what does this diatom grow? It was found that it grew only upon certain seaweeds in the waters near Japan, and not upon fruit trees in France, and this led to the conclusion that the jelly was made from this seaweed. These examples are sufficient to indicate how long are the ways that lead to the solution of the problems that concern this Congress. It may, therefore, be asked how much training shall be represented in its Board of Judges of Standards? Would it not be better to err on the side of having more sciences represented and more men of special training than by limiting the knowledge which the Board shall possess? Some may say that no limit is indicated. It is nevertheless manifest in its prescribing that chemists and medical doctors shall decide on the standards to be adopted and that it does not specify any one who is a student of either of the two kingdoms that yield us our most important foods and drugs.

If more attention could be directed rather in the direction of strengthening the scientific part of the work involved by this Congress and assuring the manufacturer of pure products that he will be protected, and that he who adulterates will be liable to punishment, than to the philosophy of food legislation, the cause would be strengthened materially and a desirable condition at a not very far distant day realised. If it were not for the fact that the importance of this subject is scarcely realised even by the chemical analysts themselves, I would not bring it forward in this rather forcible manner. Only recently an analyst of some reputation sent to my laboratory to ascertain the reagents which were employed in detecting adulteration in spices. He desired this information to examine certain products that he had received from another State, in which the quality of the products had been questioned. I replied "that I employed at the most but three or four reagents, including mounting media, and that it was not so much colour reactions as it was ability to determine tissues and their contents that was necessary for work of this kind, and that this only would follow prolonged and careful training in the examination of plant tissues and their contents." We know that iodine gives a blue reaction with starch, but we have also seen that our knowledge of the starch grain is far more extensive than this, and that for purposes of identification much other work must be done.

The foregoing remarks apply likewise to many related subjects, as stone cells, pollen grains, etc. In the black pepper examination referred to above, the adulteration was determined by the presence of the characteristic-shaped stone cells of the seed coat of cayenne pepper. The crucial test is not the absence or presence of tissues or contents which give a characteristic stain or reaction; but it is what both a micro-physical and micro chemical examination yield the botanist and pharmacognocist.

Some may object to my remarks in that I lay too much stress on the training necessary for research work of this kind. Time will show that competency in setting standards for, and in examining, foods and drugs is acquired only by proper training. This training cannot be too broad, and at the same time specific. The chemical analyst spends four to seven years in attaining competency. How can any one consider, then, that a few days or weeks are all that is necessary to make one competent to pronounce on commercial food and drug products which require for their examination a knowledge of the foundation-stones and principles in other sciences of which he may know comparatively little, if anything. A chemist may use a microscope, so may a lawyer, but it is not to be supposed that they can use it with the same degree of certainty and skill as one who has been trained in its use. Of all the instruments yet devised in the prosecution of scientific research, there is none that requires that its user shall be better taught in the foundation and guiding principles of the science in which he engages than the microscope.

The chemist may make a chemical examination of water, but it requires the bacteriologist (or specialist in another department of science) to make a biological examination of the same. The knowledge of the latter is as essential, if not more so, in some cases, than the former, and, in fact, unless made may result in an error in the deductions that are drawn. It may also be said that the chemist may make a chemical analysis of foods and drugs, but a biological examination requires the aid of the biologist, *i.e.*, the specialist in botany and zoology. As in the examination of water so in the examination of these products; the different sciences mentioned should work conjointly, each contributing its share to the truth. This is the age of specialists, and, even in the different departments of science, we have a further division of labour among experts. We believe that the best efforts of this Congress will be served and materially strengthened if not only the division of chemistry of the United States Department of Agriculture, but the other divisions of the department that can furnish material assistance in this work are instructed to furnish experts; and if, in addition to the chemists of the American Chemical Society and physicians of the army and navy, the pharmacists of the American Pharmaceutical Association are invited to send representatives. There is no question but that such action—the bringing together of experts in the different departments as its judges of standards—would place the Congress in good faith among all who are concerned in pure food and drug legislation. This part of the subject is deserving of your most earnest consideration, as, to my mind, it is the keystone of all food and drug legislation. When this is decided, there will be no difficulty in framing a law that is at least rational, and which may be perfected as the judges of standards of purity are enlightened, and manufacturer, merchant, and consumer recognise its justice.

Cats and the Dissemination of Disease.—That the family cat may be the medium of the dissemination of diphtheria has been known for some time, but renewed attention has been drawn to the fact by the Medical Officer of Health for Paddington, who reports two cases of the kind which had recently come under his notice. Unfortunately, in each case the cat had been killed and the body been disposed of before the nature of its illness could be scientifically verified. Nevertheless, the evidence was indisputable, that after the illness in the cat had declared itself diphtheria broke out in the household.—*Med. Press*, 65, 390.

HOLY WELLS, CHARMS, ETC.: THEIR HEALING AND REGENERATIVE AGENCY.

BY PHARMACIST.

The verdict of manslaughter against two Christian scientists has naturally called public attention to the various unauthorised schemes which are promoted for the restoration of health and cure of disease in opposition to the regular established systems of the country.

Christian science (as it is called) affects the treatment of nervous troubles more than physical ailments. The reason for this is said to be that wealthy ladies, burdened with *ennui*, and whose imagination or desire to be unwell makes them quite the material suitable for the Christian scientist, are thus the principal patrons.

The mode of treatment is of the simplest. The patient reclines on a lounge. The apostle of Mrs. Eddy reads in a "crooning voice" selections from Christian science literature, which inculcate with "damnable iteration" the fact that there is no disease, and belief thuswise banishes the delusion. There is probably the exercise of some mesmeric influence, and it is possible that a strong-minded lady could not fail to control to some extent the weak imaginings of the victim of morbid subjective impressions. There is to-day a recrudescence of the old forms of therapeutic juggling—Lourdes, Christian science and "faith-healing," which never cures anything beyond a cold or some trifling ailment. Even Cardinal Newman in his 'Apologia' firmly announces his conviction that a certain holy well in Germany had wrought miraculous recoveries. "Imagination cures or kills."

HOLY WELL OF STRULE, NEAR DOWNPATRICK, IRELAND.

Anyone who considers the British Pharmacopœia, which is a compact digest of all that is known in regard to the concoction, preparation, and selection of drugs and chemicals, with the tons of rubbish written on the art of medicine previous to the century now closing, may thank goodness that human intelligence broke at last through the thraldom of superstition, magic, and priestly medicos.

The philosopher who consumed his time searching for the elixir vitæ did not, perhaps, pause to ponder on the modern query, "Is life worth living." During the Christian era, at least, that part of it dominated by Catholic influence, attempts were made to cure diseases rather than lengthen life, and that by extraordinary if indeed not insane methods. For in the dark ages, having little or no knowledge of medical science or physiology (and, indeed, pathology and surgery are nineteenth-century arts), all ailments were exorcised by treatment mostly theological or concoctions not less horrible than the recipe of the witches in Macbeth. It shall be seen that it was not the lower classes alone who resorted to these superstitious preparations, the educated and high in rank were as fanatical. Centuries after the priests' clutch had released the medicine bottle, the influences of a besotted and ignorant craft were still powerful. Even in our day there are still symptoms of its survival, for no pill or patent poison is so popular as that which is vouched for by a parson, minister, or Salvation Army captain.

Father Kniepp's water cure (more beneficial than a sacred well) is very much followed by those who are rich. The regimen is very suitable for people who overfeed themselves, and to tender young ladies the tramp through the dew-covered grass with bare feet, while in some respects æsthetic if a neat ankle is displayed, acts as a tonic in strengthening the system, like Socrates in the snow; but rustic lasses possess all these privileges with great regularity and in abundance. There is on the Continent also an establishment conducted on the principle that nudity is man's natural state, this and alternate applications of water and sun is the main treatment; labourers in a harvest field have all this to their hearts' content. Plain diet and physical exercise are all that were inculcated by Kniepp, and they are the only "medicines" for leisure and luxury.

Bathing and baptism are in the Biblical records always associated with some miraculous curative treatment, or some rite of purification. Indeed, ancient Oriental races in some sort conferred upon their respective rivers powers and properties which the Greeks attributed to Æsculapius, the god of physic. The Hindoos and the Ganges, Egyptians and Nile, Hebrews and the Jordan are well-known instances.

Naaman, the Syrian captain, dipped seven times in the latter and was cured of leprosy. There is also mentioned by St. John a pool of water in Jerusalem, which, being troubled by invisible influence, destroyed disease in the person first entering into it. The Hindoo's religion to-day is entirely wrapped up in the sewer-charged Ganges. He bathes in it and drinks it to banish fever and small-pox. There is the Well of Fate, of Long Life, of the Earring, etc., "the sacred water is ladled out to them," with it comes the banishment of every ailment. And strange to say, modern science has discovered that "this water is the most puissant purifier in the world," for its proximity is fatal to the cholera germ.

In Papal times there was a custom in this country, if a well had an awful situation, if its waters were bright and clear, or had some medicinal quality, of dedicating it to some saint, who returned the

compliment by working cures. Holywell, or St. Winifrede's Well, in North Wales was considered a natural wonder. After the death of the guardian saint the waters were miraculously sanative. Votive crutches and barrows were strung round the walls as evidences of cure. Many of the devotees sank in the well up to their chins. A small spring close by was an infallible cure for weak eyes if a certain charm was ejaculated. In 1635 Sir George Peckham died at this well, "having continued so long mumbling his Paternosters and Sancta Winifreda ora pro me that the cold struck into his body, and he never spoke more." A proper retribution for the old dotard. A person named White was really cured here in 1805, according to an account given by a learned gentleman of London. Madern Well, in Cornwall, was the resort of all who had pains, aches, and stiff limbs; many cures were reported. The Wishing Wells of Walsingham were efficacious in curing disorders of the head and stomach, the special gift of the Holy Virgin, for the water has no such virtue now.

A photograph is given of the Holy Well of Strule, near Downpatrick. This shrine has been the rendezvous for three centuries of the afflicted, belief in its infallible hydropathic virtues is still prevalent, and reputable witnesses aver that they have seen remarkable cures, of the usual class, viz., lameness.

The Stream of Blood (the meaning of Strule) flows once in the year, in midsummer, at midnight. The water rises in a rudely circular well in the centre of the building, around the walls of which is a stone settee knee-high, upon which the impotent pilgrims sit and dangle their feet in the stream. It is either this well or one in the vicinity to which the Irish Hudibras makes the following allusion :—

> "Have you beheld when people pray
> At St. John's Well on patron-day,
> By charm of priest and miracle
> To cure diseases at this well,
> The valley's filled with blind and lame
> And *go* as limping as they *came*?"

It appears that the Strule would flow all the year if it were not dammed by human agency in order to augment the volume of a neighbouring stream, and that some person or persons unknown by a strange coincidence remove the dike on the very night the Holy Well fills.

It should be noted that incredulity or some other fault of the votary often frustrated the healing power of these wells.

In Lothian, two miles from Edinburgh, there was, in 1700, a spring called St. Katharine's Well, which had a kind of black oil (from the coal) floating on the surface of the water. This oil was used to heal scabs and diseases of the skin.

At Aberdeen was a well which was drunk for urinary troubles and colic. It appears to have been a mineral spring.

In Perthshire, Trinity Gask Well was remarkable for the purity and lightness of its water. It was affirmed that baptism here was a sure preventative of the plague. The downfall of superstition destroyed its properties.

St. Tecla had a church dedicated to her in Llandegla, Wales, for which honour she bestowed on a small spring near by power to remove the falling sickness. The charge was fourpence and a cock or hen.

Madness was cured by plunging the maniac in a pool in the vale of Strathfillan, Scotland. As madness is sometimes associated with a heated brain external applications of cold spring water might not be ineffective.

Rickety children and those afflicted with ophthalmia were brought to St. John's Well in Kincardine, as the sanative quality of the water was held in great estimation.

It is said of a well in Somersetshire in 1464 that large numbers of persons "who had found no benefit from physic and physicians for their diseases were, by the use of this water, restored to their pristine health." What "physic and physicians" meant in those times shall be seen further on. It is feasible enough that ailing people, whose disease was being aggravated by ignorant remedies, would get some benefit by a cessation, even if they did not plunge in a well. The inhabitants of Skye were wont to frequent a well which had the reputation of assuaging stitches and headaches, and was a specific for stone, consumption, and megrim. Just like our modern quack pill.

The following recipe for making a holy well is found in a work written in 1631 by Thomas Powell: "Let them find out some strange water, some unheard-of spring. It is an easy matter to discolor or alter the taste of it in some measure (no matter how little). Report strange cures that it hath done. Beget a superstitious opinion of it. Goodfellowship shall uphold it, and the neighbouring towns shall all swear for it."

The present-day "charmers" throughout Ireland are entirely wanting in that mysterious witchery and assumption of supernatural powers which one is led to associate with their "office" by tradition. The more ancient "performers" practised their incantations away from human habitation, dwelling in a cave maybe, and speaking in an unknown tongue. The moderns, however, are humbugs; they wear bowler hats, high collars, and check ties. No one can consider gentlemen necromantic who dress in this fashion.

Dr. Adam Clarke tells of a reputed witch who affected to cure sunstroke by measuring the cranium and then appealing by incantations to supernatural agents "to lift the bones that they might not compress the brain." Of all people who ever lived the Persians were perhaps most remarkable for their unshaken credulity in amulets, spells, periapts, and similar charms, framed, it was said, under the influence of particular plants and bestowing high medical powers.

A story of this kind concerning a Scottish crusader is often told in the west of Scotland. It relates that Sir Simon Lockhart, of Lee and Cartland, having captured a notable Saracen emir, would only permit of his being ransomed by a certain amulet being included in the payment. This was a pebble inserted in a coin of the Lower Empire. The uses of it were various, but its principal application was rendering water in which it was dipped powerful as a styptic and a febrifuge.

This was the famous Lee penny, to which the Church of Scotland considered "God had annexed certain healing virtues." It was in existence in 1832, and its powers were sometimes resorted to. "Of late they have been chiefly restricted to the cure of persons bitten by mad dogs, and as the illness in such cases frequently arises from imagination, there can be no reason for doubting that water which has been poured on the Lee penny furnishes a congenial cure."

This observation can be borne out by what occurred in Co. Cavan in 1886. A mad dog had bitten some pigs, which were subsequently killed and sold. When this became known, numerous persons who had eaten the pork thought themselves afflicted with rabies. M'Govern, of Cavan, possesses a traditional recipe for the cure of this disease, and some dozens of patients were successfully treated by him. A doctor on the spot denied that any of the persons showed symptoms of hydrophobia, and averred that they might have eaten the dog itself with impunity.

M'Govern still flourishes as a hydrophobia specialist, and scores yearly testify to the efficacy of his charm.

Toothaches, agues, cramps, and fevers were supposed to be healed by murmuring an incantation over the head of the diseased. There were charms to staunch blood, charms for a swelling, a scald, and canker.

"For warts," says Sir Thomas Browne, "we rub our hands before the moon and commit any maculated part to the touch of the dead." Grose's prescription is different. "To cure warts, steal a piece of beef from a butcher's shop and rub your warts with it, then bury it, and as the beef decays your warts disappear."

"A halter, wherewith anyone has been hanged, if tied about the head will cure the toothache." Probably it would if properly adjusted.

The carrying of herbs on one's person was reckoned a capital talisman. Rosemary drives away contagious diseases, so does ricinus or palma christi. A sprig of elder prevents horsemen being galled. Its leaves were an antidote to erysipelas, and the following preparation secured perennial youth :—"Make powder of the flowers of elder gathered on a midsummer day, having been well dried, use a spoonful thereof in a draught of borage water morning and evening for a month."

The best and most infallibly efficacious herb, according to Cole, in his "Knowledge of Plants," is one known as the Devil's-bit. As part of the root was a cure for all diseases, the enemy of mankind prevented that happy consummation by biting it off. Satan, however, is no match for the ingenuity of old women. A fasting spittle was a universal panacea, and as it was obtainable every morning before breakfast without visiting the druggist's, its cheapness was not its least recommendation. It cured tetters, itch, scabs, and sores ; it will, if the part be rubbed, allay the sting of hornets, bees, etc. Browne also believed that it cured amorous desire, holding that spittle was a distillation of the humours and heaven knows what else ! Lupton tells of a coal gathered on St. John the Baptist's eve from under the "root of plantane," which cured the plague and any other malady. In the practice of Paul Barbette, 1675, this is shown to be old acid roots, consisting of much volatile salt, always found under mugwort.

Burton, in his 'Anatomy of Melancholy,' 1621, says, in regard to amulets, "they are not altogether to be rejected. Piony doth help epilepsies. Precious stones most diseases. A wolf's dung carried about helps the cholick. A spider, an ague, etc." So much for Buckingham ! Dr. Herring, in 1625, warned anyone from the pernicious practice of wearing "amulets confected of arsenic" over the heart as a preservative against pestilence.

"To hold your left thumb with your right hand in shortness of breath or a fit of convulsion" was condemned by St. Austin as superstitious. Yet there may be something in it, for a cramp whilst bathing can be obviated by the swimmer bending the left big toe towards himself, and some epileptics who wear a band round their left wrist can stop a fit coming on by tightening the strap.

The old doctors differed as much and as dogmatically over their theories as theologians. Levinus Lemnius confutes Gellius in regard to the assertion that the ring-finger communicates by a nerve directly with the heart, he maintaining it to be an artery. It was called the medicus, and physicians were wont to mingle their potions and medicaments with this finger because of its freedom from venom. One must not be surprised at anything an old physician did. Lemnius "used to raise such as swooned by pinching this joint and rubbing the ring of gold with saffron, for thus, a restoring force in it, passeth to the heart, refreshing the fountain of life, to which this finger is joined." This is delightful. It was thought that fern seed worn on the person made one invisible. Addison, in the 'Tatler,' laughs at an old doctor who was arrived at the knowledge of the green and red dragon, and had discovered female fern seed.

Sir Thomas Browne, on the authority of Hippocrates, says : "Sneezing cures the hiccough, is profitable in lethargies, apoplexies, and catalepsies. It is a pernicious sign in diseases of the chest and in the beginning of catarrhs." Aristotle considers it something sacred and a sign of sanity in the diviner part, and the practice of physicians was, in persons near death, to use sternutatories (medicines to provoke sneezing), which, if effective, they receive as an omen of life. So we find in Howell's 'Proverbs,' 1659, "He hath sneezed thrice, turn him out of the hospital." That meant he was convalescent.

Elias Ashmole writes in his diary, 1681, the following : "I took early in the morning a good dose of elixir and hung three spiders about my neck, and they drove my ague away. Deo gratias." He was a judicial astrologer. Rupture and rickets were cured by passing the child through a split ash, and whoopcough by putting the young sufferer under the belly of an ass. Cases of this kind are recent.

Coles, in his 'Art of Simpling,' says that the eating of quinces and coriander seed "represses vapours that ascend to the brain."

In Buttes's 'Dryett's Dry Dinner,' 1599, it is asserted that "if one eats three small pomegranate flowers for a whole year he shall be safe from all manner of eyesore." The root of vervain hung at the neck destroyed the king's evil. Boorde, in his 'Breviary of Health,' reckons this among the divine right of kings. Bulwer's 'Chirologia' refers to the "disease called struma," as succumbing to the "sovereign salve." This affliction, which Shakespeare termed "the despair of surgery," is now positively known never to have been cured by the royal touch.

An old writer in a tolerable long poem shows that each disease had its patron saint :—

> Rooke healeth scabbes and maungines, with pocke and skurfe and scall,
> And cooleth raging carbuncles and byles and bothches all ;
> Erasmus heals the collick and the griping of the guttes,
> And Laurence from the backe and from the shoulder sickness puttes, etc.

The efforts of these saints seemed to increase the number of patients. A ring blessed by the King cured the cramp and was recommended by Andrew Boorde in his 'Breviary of Health,' 1557.

Dr. Jorden mentions that a Roman physician prepared a medicine out of "crow's galle and oyle," whereof the patient took so great conceit that upon the use of it, he presently recovered his health."

Newton in his 'Herball to the Bible' mentions "a cock-brained priest who gave a young man ashes of boxwood" to cure the ague, which killed the patient, "for the leaves of boxe be deleterious and poisonous."

Dr. Jorden, in a 'Brief Discourse on Disease,' 1603, refers to the "superstitious remedies which have crept into our profession," but seems to feel it is useless to strive against their influence, and quotes Avicen as saying "that the confidence of the patient in the means is ofttimes more available to cure diseases than all other remedies whatever." Osborne advises his son not to rail at the King's touch for the evil because of its improbability to sense, as the Antipodes and the earth's motion were opposed on similar grounds !

In a tract published in 1605, the title of which was 'A Caveat for Sick Folks to Beware of Unlearned Physicians and Unskilful Chirurgians,' the author inveighed against amulets, charcts, exorcisms, etc., which were foolishly held to cure all diseases. He gives an instance of "a great learned Clerke in our land who in a dangerous sickness, being moved by some friends to use an unlettered empiricke—'Nay,' quoth he, 'I have lived all my life by the book, and I will now likewise dye by the book.'" Ramesey speaks to the point in his 'Eliminthologia,' 1668 : "Neither doth fancy only cause, but also as easily cure diseases."

REVIEWS AND NOTICES OF BOOKS.

Comments on the Alkaloidal Estimations of the British Pharmacopœia, for Pharmaceutical Students. By R. C. Cowley. Pp. 23. Price 1*s.* net. Liverpool: F. and E. Gibbons, 19, Ranelagh Street. 1899.

The editor of the British Pharmacopœia employs the word "estimations" in that work, presumably because the results of the operations referred to are approximate only—guesses, in fact. Mr. Cowley is therefore justified in making use of the same word in explaining those operations, though we believe him to be much too good a chemist to employ it generally in the sense of "determination" or "assay." In the preface to this little work he points out that the principle of standardisation as applied to galenical preparations has been greatly extended in the new Pharmacopœia, and that as our knowledge of the active constituents of drugs increases, we may justly hope to see it further extended. An endeavour is made therefore to explain the subject fully for beginners, suggestions for amendment of the official processes being included in some cases.

The composition, extraction, and testing of alkaloids are first considered; a general method is described for the alkaloidal assay of galenical preparations, and useful hints are given on the treatment of emulsions formed during the operation of shaking out, and on the recovery of solvents. The standardised preparations are then treated in alphabetical order: Belladonna—liquid extract and tincture; cinchona—liquid extract, tinctures, and citrate of iron and quinine; ipecacuanha—liquid extract; nux vomica—liquid extract and tincture; opium and its tincture. Wherever required, copious explanatory notes help to smooth the path for the young analyst, and alternate blank pages serve for recording personal experiences and impressions. The little book should prove extremely useful, and a large demand for it may be anticipated.

Text-Book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.G. Fifth edition, revised and enlarged. Pp. i.-xiv., 17–738, with 96 illustrations. Price 10*s.* 6*d.* net. London: H. Kimpton. 1899.

Although the author's preface is dated September, 1898, and beneath the publisher's name on the title-page the year 1899 is given as the date of publication, it would seem, from the references to official substances, that the author has ignored the 1898 edition of the British Pharmacopœia. This is evident from the statement on p. 492, that "the British Pharmacopœia does not recognise any of the salts of strychnine," and also from the references, among other things, to ammonium nitrate (p. 250), hydrated peroxide of iron (p. 298), and proof spirit (p. 351), as official in the British Pharmacopœia. This must considerably modify the value of the book as a work of reference in this country.

From the author's preface one gathers that the book is intended as a text-book for medical students, and represents the subject matter of the courses of lectures delivered by him at the Long Island Cottage Hospital. However well it may fulfil the requirements of the medical curriculum in the United States, it is quite certain that it cannot do so on this side of the Atlantic. One may say at once that it does not agree in style or scope with the opinions of our authorities on scientific education in relation to medicine and pharmacy.

The book is divided into five parts. Part I. comprises eighty-three pages devoted to the whole range of physics, and Part II., twenty-five pages, disposes of theoretical chemistry. It is obvious, therefore, that considerable condensation has been employed, especially since Part I. includes the polarisation of light, spectrum analysis, and a description of international electrical units. The natural consequence of this condensation is rendered evident by the author's treatment of "Chemical Reactions and Equations" commencing on p. 106. The main outcome of this must be to give the elementary student the impression that a chemical equation can be written without any knowledge of the reaction, and solely by reference to tables of positive and negative radicles. This is how the trick is done, in the author's own words, p. 108.

"To write chemical equations place the formulæ of the factors, connected by a plus sign equal to the formulæ of the products, also connected by a plus sign. Now take such a number of molecules as factors that only whole molecules can be produced in the products.

Examples.

$$\underset{\text{Silver Nitrate.}}{\overset{+\ -}{AgNO_3}} + \underset{\text{Sodium Chloride.}}{\overset{+\ -}{NaCl}} = \ ?$$

"We first determine which are positive and which are negative radicals. The metals are positive and the non-metallic radicals are negative, as indicated by the signs above the symbols.

"We next cause the positive radicals to exchange places, whence we have AgCl and $NaNO_3$. On referring to the table of equivalents (p. 97), we find all these radicals to be monad, and therefore chemical equivalents.

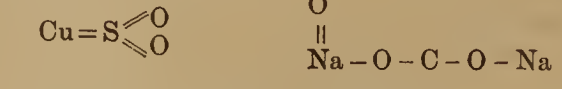
"The completed equation will therefore be :—

$$AgNO_3 + NaCl = AgCl + NaNO_3.$$"

On the basis of this exposition, the student is then invited to juggle with a set of formulæ representing the left-hand side of various equations, the problem being to complete the equations, although the actual facts relating to the reaction may be unknown to the student, as well as the conditions under which they are carried out. The following is one of the problems set :—

$$MgSO_4 + HNa_2PO_4 + NH_4OH = \ ?$$

The following graphic formulæ, given on p. 94, for copper sulphate and sodium carbonate, one must assume to be the result of accident rather than intention :—



Part III. is devoted to inorganic chemistry.

Part IV. contains about 250 pages dealing with organic chemistry in a manner which seems to reflect credit upon the ability of American students to master the difficulties of this subject. For, after about twenty pages, the reader is introduced to structural formulæ for pinene and other similar bodies, the alkaloids and glucosides being dismissed with very short notice.

Part V. deals with physiological and pathological chemistry, and is likely to be useful to medical practitioners. It contains a good account of foods, digestive and excretory products, and gives suitable processes for their examination for clinical purposes.

Apart from errors which we have not noticed, it is evident that this book is unsuited for the elementary student's use, although it should be useful for qualified men, both medical and pharmaceutical, for reference, assuming that they have sufficient elementary knowledge of the subject. This especially applies to many modern substances which are in use in medicine, although not contained in the Pharmacopœia, and of which a readable although somewhat brief description is given.

GENERAL FORMULÆ FOR MODIFICATION OF MILK.*

BY FIELDING LEWIS TAYLOR, M.A., M.D., NEW YORK.

It is desired to make a mixture of water, cream and milk with the addition of sufficient milk sugar, such that it shall contain known percentages of fat, proteid and sugar. How much of each is required to make a given quantity, Q?

Desired percentage of fat = F.
Desired percentage of proteid = P.
Desired percentage of sugar = S.
Quantity of milk sugar to be added = X.
M, represents milk; C, cream, and W, water.

a, a' stand for known percentage of fat in cream and milk, respectively.

b, b' stand for known percentage of proteid in cream and milk, respectively.

c, c' stand for known percentage of sugar in cream and milk, respectively.

$$Q \times P = b' M + b C$$
$$Q \times F = a C + a' M$$
$$\frac{S \times Q}{100} = \frac{c' M}{100} + \frac{c C}{100} + X$$

hence

$$(1)\quad M = \frac{1}{b'}(Q P - b C)$$

$$(2)\quad C = \frac{Q (b' F - a' P)}{a b' - a' b}$$

$$(3)\quad X = \frac{S \times Q - (c' M + c C)}{100}$$

$$(4)\quad W = Q - (C + M)$$

Example.—If whole milk contains 4 per cent. of fat, 4·30 per cent. sugar, and 4 per cent. proteid, 12 per cent. centrifugal cream will contain 3·80 per cent. proteid and 4·20 per cent. sugar, according to Holt.

Now if we should desire 40 ozs. of a mixture which shall contain 2 per cent. fat, 5 per cent. sugar, and 1·25 per cent. proteid, by substituting $a = 12$, $b = 3{\cdot}80$, $c = 4{\cdot}30$, $a' = 4$, $b' = 4$, $c' = 4{\cdot}20$, $F = 2$, $S = 5$, $P = 1{\cdot}25$, $Q = 40$, we find:—

$$C = \frac{40 (4 \times 2 - 4 \times 1{\cdot}25)}{4 \times 12 - 4 \times 3{\cdot}80} = \frac{120}{32\,8} = 3{\cdot}6 \text{ ozs.}$$

$$M = \tfrac{1}{4}(40 \times 1{\cdot}25 - 3\,8 \times 3\,6) = \frac{36{\cdot}32}{4} = 9+$$

$$X = \frac{50 \times 40 - (4{\cdot}30 \times 9{\cdot}1 + 4{\cdot}2 \times 3{\cdot}6)}{100} = 1{\cdot}45$$

If we take $b = b'$ and $c = c'$.

$$(1)\quad M = \frac{Q \times P}{b} - C$$

$$(2)\quad C = \frac{Q (F - P)}{a - a'}$$

$$(3)\quad X = \frac{S \times Q - c(M + C)}{100}, \quad M + C = \frac{QP}{b}$$

$$X = \frac{BS \times Q - c Q \times P}{100b}$$

when $b = c$

$$X = \frac{Q (S - P)}{100}$$

* Reprinted from *Pediatrics*.

THE STUDENTS' COLUMNS.

EXPLANATORY NOTES ON THE B.P. 1898.

Olive Oil.—Compare the congealing point with that of almond oil. The test for cottonseed oil is known as Becchi's test. The test should be performed exactly as described. The blackening is due to the reduction of silver salt by some constituent of the cottonseed oil. Presence of free fatty acid, which is found in considerable quantity in rancid oils, may be determined by titration with alcoholic potash solution in ether-alcohol solution.

Castor Oil.—The high specific gravity, viscosity, and solubility in absolute alcohol and rectified spirit are quite characteristic and distinctive of castor oil among the fixed oils. There is some doubt about the value of the carbon bisulphide and sulphuric acid test, some observers stating that genuine castor oil gives a brown or yellowish brown colour under the conditions described. The behaviour of castor oil towards petroleum ether is very peculiar among the fixed oils, which mix, with the exception of castor oil, in almost any proportion with petroleum ether. The presence of a comparatively small quantity of foreign oil in castor oil is however sufficient to cause the oil so adulterated to form a clear solution under the conditions described. The chief constituent of castor oil is ricinolein, the glyceryl ester of ricinoleic acid. The empirical formula for this acid is $C_{18}H_{34}O_3$, and by comparison with the formula for oleic acid, $C_{18}H_{34}O_2$, it will be observed to contain one atom of oxygen more than the latter. From a study of its reactions, ricinoleic acid is believed to be a hydroxy derivative of oleic acid, and the formula may be written $C_{17}H_{32}(OH)\cdot COOH$. That it belongs to the unsaturated oleic series is shown by its iodine absorption, and the presence of one alcoholic hydroxyl group is demonstrated by the acetylation which it undergoes when treated with acetic anhydride. *Vide* Students' Page, August 28, 1897, for description of acetylation process for determination of hydroxyl groups. Castor oil also yields a solid elaïdin product when treated with nitrous acid.

Cod-Liver Oil.—The Pharmacopœia now describes the commercial variety known as non-freezing oil—*i.e.*, oil which has been exposed to a temperature below the freezing point of water to cause the separation of a portion of the solid stearin. The deposit is then removed by filtration, and the filtrate consequently does not again become turbid when cooled under the conditions described in the official tests.

Oil of Theobroma.—The range of temperature for the melting point has been narrowed, and is now given as from 88° F. to 90° F., the average normal temperature of the human body being 98°·4 F. The ether test should be performed in a stout test tube capable of being closely corked during the process so as to avoid loss of ether. The test is valuable in detecting adulteration with such solid fats as tallow and suet. The specific gravity of oil of theobroma is not given in the Pharmacopœia. It varies from 0·990 to 0·995, but if taken after recently re-melting, it is considerably lower, and only attains the higher and final value after standing some time. This is a point of some importance in making suppositories, and will be dealt with under this group of preparations.

Lard.—The test for cottonseed oil has been already referred to under olive oil. Note that the titration for free acid, which is found beyond the official limits in *rancid* samples, is conducted in chloroform-alcohol solution, since water does not appreciably dissolve either lard or its free fatty acids. Unless the fatty acids are in solution, the reaction does not take place readily between the acids and alkali, and a satisfactory indication of the end of the reaction is not obtained.

ZOOLOGICAL NOTES FOR PHARMACISTS.—VI.

Arthropoda.

This large sub-kingdom of jointed-limbed animals includes several types which may be represented by the crayfish, centipede, beetle, bee, and spider. They are usually covered by an external skeleton of chitin, which in some parts is soft and pliable, and in others may become calcified to form a hard, horny shield. They are all more or less segmented, and may be considered as descendants of the annulated worms in two directions, the centipede and insect on one hand, and the crayfish and spider on the other. The Myriopoda (centipedes, etc.) possess an indefinite number of segments, each bearing one or two pairs of appendages, certain segments at the anterior end being fused in a well-differentiated head, bearing eyes, antennæ, and jaws. In the Insecta the body is clearly marked off into three regions—head, thorax, and abdomen, and in the Arachnida (scorpions and spiders) and Crustacea (crayfish, etc.) the head and thorax are fused into a cephalo-thorax. The structure and form of the appendages vary according to the habit and environment of the animal. They may become modified into antennæ, jaws, pincers, walking legs, or swimming paddles. A simple typical appendage consists of three parts—a basal segment or protopodite, a median endopodite, and a final exopodite; these in the higher forms being again divided into further segments or podomeres. In the centipede and crayfish appendages are borne by every segment, but in the insect and spider they are confined to the cephalo-thoracic region.

As in the Annulata, the cælom or body cavity is very little represented, and the circulatory system contains both true vessels and sinuses. The heart is usually well marked, and may be a long, many-chambered tube, as in insects or a flattened or bulbous body, situated in a pericardial sinus, into which it opens by a number of ostia. There is an aorta, or main arterial trunk, through which the blood is pumped to all parts, to return by means of sinuses and veins. To a large extent the well-distributed respiratory system does away with the necessity for a more highly organised vascular system. Respiration is effected by means of gills in the water-breathing Crustacea, by tracheæ in the air-breathing insects, and in some forms, as the spider, by means of lung-like sacs. A gill is a feather-like extension of the body wall in contact with the water, and abundantly supplied with blood vessels. Tracheæ are systems of minute tubes extending all over the body, and opening externally at numerous segmental apertures, stigmata. In insects which are continually on the wing and strong flyers, as bees, certain portions of the tracheal system are expanded into large air vesicles, and in cases where the adult form is air-breathing, and the larva aquatic, the larval tracheæ possess simple external gills. The nervous system is on the same plan as in the Annulata, consisting of a brain which supplies nerves anteriorly to the eyes and antennæ, and a chain of connected ganglia with their branches. The alimentary system includes a mouth, an œsophagus, a crop, or in some insects a specially modified sucking stomach, a gizzard, if necessary, often containing a grinding and sifting apparatus, a digestive stomach supplied with secretory glands, and an intestine. The excretory organs of simple arthropods are nephridia, as in the Annulata. In the Crustacea they are specially modified forms of nephridia called shell glands or green glands, or they may be minute tubular intestinal appendages known as Malpighian tubes, as in Insecta.

The members of the phylum are diœcious, and in most cases, especially amongst the Insecta, the male differs in form from the female. Direct development may occur, but either pseudo or true metamorphism is most common.

BILLS IN PARLIAMENT.

The following Bills were introduced into the House of Lords, by the Lord Chancellor, on Friday, March 24, and read a first time. They are now waiting for second reading.

PHARMACY BILL, 1899.

MEMORANDUM.

Under Sections 1 and 15 of the Pharmacy Act, 1868 (31 and 32 Vict., c. 121) there are penalties on persons acting as chemists or druggists without being registered.

It has been decided that the word "person" in Section 15 of the Act of 1868 docs not include a corporation, and that consequently penalties for contravention of that Section cannot be recovered from a company (Pharmaceutical Society *v.* London and Provincial Association [1880], 5 App. Cas. 857). It is obvious that a company cannot pass the examinations required to qualify for registration as a chemist or druggist.

The object of this Bill is to allow a company to carry on the business of a chemist and druggist on the condition that they employ a duly qualified manager or assistant, that is to say, to place a company in the same position as the executors or trustees of a deceased chemist, and to provide that, subject to this provision, anything which would be an offence under Section 15 of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

A BILL

INTITULED

An Act to Amend the Pharmacy Act, 1868.

BE it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. **Application of Pharmacy Act to company. 31 and 32 Vict. c. 121.**—A company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist if and so long only as the business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, as the case may require, but, subject to this provision, anything which would be an offence under section fifteen of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

2. **Short Title.**—This Act may be cited as the Pharmacy Act, 1899.

COMPANIES (MEDICAL PROFESSION) BILL, 1899.

A BILL

INTITULED

An Act to Prohibit the Profession or Business of a Physician, Surgeon, Dentist, or Midwife being carried on by a Company.

BE it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. **Companies not to Act as Doctors, etc.**—It shall be unlawful for a company under the Companies Acts, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist, or midwife, and if any company contravenes this enactment it shall be liable on summary conviction to a fine not exceeding five pounds for every day during which the contravention happens.

2. **Short Title.**—This Act may be cited as the Companies (Medical Profession) Act, 1899.

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CHEMISTS AND THE LEGISLATURE.

The course of legislation never runs particularly smoothly, but it is not usual to anticipate that suggestions for a Parliamentary measure should have such rough water to pass through as has been the experience of those made by the Council of the Society and published in the *Pharmaceutical Journal* for February 4 last. More or less unjust criticism, mainly destructive, from within and without has been freely offered by irresponsible parties; but the Lord Chancellor, to whom those suggestions were sent at his own particular request, appears to have chosen to ignore them entirely. His original views on the subject were referred to some time ago (see *P. J.* [4], **7**, 108), but those views appear to have been totally changed, for after two months' consideration of the suggestions submitted to him, he has only been able to see his way to embody in a Bill the clause, slightly altered, which he proposed to insert in the Pharmacy Bill of last year. The alterations, slight as they are, make the clause even worse than before, since it proposes not only to legalise the keeping open shop for the sale, etc., of poisons, but also to sanction the use of titles—representing two grades of qualification—by combinations of unregistered persons, while it provides no such machinery for enforcing the proposed restriction of company trading in pharmacy as the Lord Chancellor admitted last year to be necessary. The clause, therefore, would remain a dead letter, in that respect if it became law and be absolutely ineffective to remedy the very anomaly his Lordship complained of last year.

It will be remembered that, when the Pharmacy Bill, 1898, was being dealt with by the Standing Committee of the House of Lords, the Lord Chancellor directed attention to the fact that the Pharmacy Acts do not cover the case of drug stores carried on by companies of unqualified persons, and he subsequently drafted a clause for inclusion in the Bill, which stated—

> That a company may carry on the business of a pharmaceutical chemist or chemist and druggist, if and so long only as the business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, but, subject as aforesaid, Sections 1 and 15 of the Pharmacy Act, 1868, shall apply in the case of a company in like manner as they apply in the case of an individual.

When, however, the third reading of the Bill was formally proposed, the Lord Chancellor said he did not propose to move the amendment standing in his name. As he explained the matter, it appeared to him that the amendment would be inoperative unless there was a very considerable amount of machinery introduced into the measure in the way of registration. At the same time, he still adhered to the opinion that the state of the law was extremely unsatisfactory, and that some amendment of the law was required.

Subsequently the President of the Pharmaceutical Society, instructed by the Council, approached the Lord Chancellor on the subject, and asked for his assistance in an endeavour to secure that amendment of the law which he had said he thought necessary. In reply, Lord Halsbury expressed his willingness to introduce a Bill and asked for suggestions. Those were submitted in due course, but they might apparently as well never have been drafted so far as the Bill actually introduced is concerned. That Bill provides that—

> A company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist, if and so long only as the business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, as the case may require, but, subject to this provision, anything which would be an offence under Section Fifteen of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

It will be noticed that this clause would enable companies not only to keep open shop for the retailing, dispensing, or compounding of poisons, which was all that last year's clause would have permitted companies to do, but also to use the title of "chemist and druggist" as well as that of "pharmaceutical chemist." That, of course, would virtually amount to a repeal of the Pharmacy Acts of 1852 and 1868, and cannot under any circumstances be acquiesced in either by pharmaceutical chemists or by chemists and druggists registered under the Act of 1868. The Lord Chancellor's Bill ignores all that the right to use those titles implies, and it is inconceivable that he should appear to lend the support of his name to such a project of confiscation of public and private interests as the proposal to entitle unqualified persons to assume the titles by virtue of being associated together in a purely commercial enterprise.

It may be that Lord Halsbury thinks the titles "pharmaceutical chemist" and "chemist and druggist" are as easy of assumption as "grocer" or "drysalter," and that they are therefore of no greater importance. In any case, he appears to be acting somewhat inconsistently, for, in another Bill which he has introduced into the House of Lords, he is actually proposing that it shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife (*sic*). If dividends are not to be earned by companies of unqualified persons, by carrying on those four occupations, and particularly the last, it seems only reasonable to include in the same category the calling of pharmacy. It may not be entirely a professional occupation, but the practice of it involves such individual training and personal attention as are not required in any ordinary trade. And, in any case, no individual is allowed to conduct the business of pharmacy in its entirety unless he has been properly trained, examined, and registered. Why, therefore, should a layman be permitted to usurp the position the registered chemist legitimately occupies, without any qualification other than that conferred by the possession of one or more shares in a joint-stock company? The idea would be regarded as preposterous were it fairly realised by our legislators, and it must be the duty of the registered chemists of Great Britain in general, and of members of the Pharmaceutical Society in particular, to convey to their representatives in Parliament

a proper sense of what is right and fitting in this emergency. Some weeks ago it was stated in these columns (*ante*, p. 129) that if Lord Halsbury did not see his way clear to introduce a Bill or to offer suggestions likely to prove acceptable to registered chemists as a body, it would then be open to the Council of the Pharmaceutical Society to proceed independently in the matter. The time for independent action appears to have arrived, for the Lord Chancellor cannot now be regarded as other than an opponent of the just claims of the craft. The least that can be regarded as satisfactory is to secure the absolute rejection of the Pharmacy Bill, 1899, and to agitate for the inclusion of registered chemists in the Companies (Medical Profession) Bill, 1899, which provides that

> It shall be unlawful for a company under the Companies Acts, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist or midwife, and if any company contravenes this enactment it shall be liable on summary conviction to a fine not exceeding five pounds for every day during which the contravention happens.

It will be observed that veterinary surgeons are left out in the cold by this measure, as well as registered chemists, though both would appear entitled to take precedence of midwives at least. In any case it must be insisted that there are quite as strong grounds for prohibiting the practice of pharmacy by companies of unqualified persons as there are for prohibiting the like practice of medicine, dentistry, or midwifery, and nothing short of that will satisfy the registered chemists of Great Britain.

THE SALE OF FOOD AND DRUGS BILL.

It has at last been decided by the House of Commons that the Sale of Food and Drugs Bill shall be dealt with by the Standing Committee on Trade. Strenuous opposition was offered to that course by several members, mainly on the ground that the proceedings of the Committee are not public, but ultimately the motion was agreed to without a division. Another deputation has waited upon the President of the Board of Agriculture, who has charge of the measure, and it is curious to note how Mr. Long's views, as expressed to that deputation, differ from those of his colleague at the Local Government Board. When posing as an expert in adulteration law last year, Mr. Chaplin alleged that the Sale of Food and Drugs Act, 1875 and 1879, were adequate to effect the purposes for which they were enacted. Now, however, Mr. Long asserts that the law is at present insufficient to secure honest trading. Those two statements may not be so contradictory as they appear, but more confidence would probably be reposed in the Government's intentions with regard to legislation respecting the purity of food and drugs if those who constitute the Government always said the same thing when dealing with the topic. Reverting to Mr. Long's remarks, he urged the deputation to remember that there is a strong body in the House of Commons and outside of it, which, while entirely opposed to dishonest trading, is extremely apprehensive of injury being done to trades which are of importance to the great mass of the community. Whatever might be thought of the reasonableness of that view it would be idle, he said, to disregard or ignore it in any estimate of what it is possible to do. He hoped the Government would be supported in putting a practical measure on the Statute-book, such as would tend rapidly to diminish and in the end put a stop altogether to the frauds which are complained of.

ANNOTATIONS.

The Certificate of Membership which every member of the Pharmaceutical Society is entitled to possess and use so long as he continues to be a member must, in accordance with the Bye-laws, be delivered up to the Society, if the person to whom it has been granted ceases to be a member, and it may be noted, by the way, that, until the certificate is returned, no member is released from his obligation to pay his annual subscription. At the same time, it is of importance, in the interests of the members generally, that no person should be permitted to retain and use a certificate of membership unless he is legally entitled to do so. It is necessary, therefore, that the Society's Registrar should have power to compel the return of certificates if necessary, and to that end every newly-elected member is required to sign an undertaking to return his certificate in the event of his ceasing to be a member. Until that undertaking is signed the certificate is not handed over, and it is obvious that, under the circumstances, such a course of procedure is absolutely necessary in the interests of members themselves. As in most cases the certificate has to be sent to the member by post, the custom is to send to him an intimation that the certificate is ready, accompanied by the form of undertaking which must be signed and returned to the Registrar before the certificate is transmitted.

This Matter is Referred to Here because, in a case that has recently been brought under notice, objection appears to have been taken to the course of procedure described above. Mr. Claude F. Henry, of Edinburgh, has asked the Editor to publish a somewhat lengthy correspondence which he has had with the Registrar of the Pharmaceutical Society on the subject, but exigencies of space will not permit of that course being adopted. The gist of the matter is that Mr. Henry objected to sign the form of undertaking sent to him, prior to his certificate of membership being sent, because he would thus have been acknowledging the receipt of the certificate, and he considered that "such an acknowledgment would be a falsehood." In reply, Mr. Bremridge explained, as has been done above, that "it has been found necessary from an administrative point of view, and on the advice of the Society's solicitors, to adopt the precedure of only issuing the certificate in exchange for the form of receipt." It was also added that the exchange could, if desired, be effected personally or by an agent. Dealing with the matter by post, it was an occasion for mutual trust, and the Registrar formally undertook to send the certificate upon receipt of the signed form. In reply, Mr. Henry disclaimed any feeling of doubt that the certificate would be sent in due course, but said he regarded the affair as a matter of principle rather than one of procedure, and declined to send the receipt until he had received his certificate. Ultimately, the "difficulty" was overcome by the simple expedient of Mr. Henry calling at the Society's House in Edinburgh and handing over the receipt in exchange for his certificate. The same course can be adopted in other cases if necessary, and doubtless the views of conscientious objectors in other parts of the country might be overcome by effecting the exchange through local secretaries, though it is doubtful if it is worth while burdening those officers of the Society with such apparently superfluous tasks. It may be observed, in conclusion, that inasmuch as it is quite a common thing to have to sign receipts in advance when transacting business with lawyers, there does not appear to be any question of principle involved in the matter which Mr. Henry has brought forward.

Company Trading in Pharmacy will not be allowed to exist unchecked if the persistency of the Council of the Pharmaceutical Society of Ireland counts for anything. At the instigation of that body, Mr. P. O'Brien asked the Attorney-General for Ireland, in the House of Commons, on Monday, whether he had received a copy of the resolution adopted by the Corporation of Dublin on the 20th instant, calling attention to the practice of persons incriminated and fined for a breach of the pharmacy laws continuing under cover of the Companies Acts to keep open shop in contravention of the Statutes which require that the person keeping open shop should be qualified by examination, etc. He also asked whether the Government would introduce a Bill to amend the Companies Acts so as to prevent the continuance of such breaches of the law. In reply, the Attorney-General for Ireland said he had received a resolution to the effect mentioned, and to the further effect that the Companies Act should be amended so as to prevent a company of which any of the members were not qualified as apothecaries from carrying on the trade or business of apothecaries. Those, however, were matters which would appear to call for consideration when any amendment of the law is proposed affecting Great Britain and Ireland as a whole, and he could not undertake to say that the Government will introduce legislation in the direction suggested.

The Board of Education which the Government proposes to establish for England and Wales—to superintend matters relating to education—is intended to consist of a president, the Lord President of the Council, the principal Secretaries of State, the first Commissioner of the Treasury, and the Chancellor of the Exchequer. This proposed new body is to take the place of the Education Department, including the Department of Science and Art, and may have transferred to it by an Order in Council any the powers of the Charity Commissioners in matters relating to education. It is further proposed that a consultative committee may be established by the Privy Council to frame regulations for the formation of a register of teachers, and to advise the Board of Education with regard to the inspection of secondary schools and other matters. The salary of the President of the Board is not to exceed two thousand pounds per annum, and the person holding the office will be eligible as a member of the Commons House of Parliament. The existing Vice-President of the Committee of the Privy Council on Education will become a member of the Board, but when he vacates the office it is to be abolished.

The Reform of Secondary Education was to have been effected by the Bill establishing the new Board, but the *Daily News* describes the measure as an even more skimpy one than the shrivelled and decrepit thing that appeared under the same guise in 1898. Like the Bill of last year, it purports to establish a Board of Education "charged with the superintendence of matters relating to education in England and Wales," and for that purpose taking the place of the Education Department and the Science and Art Department, though no legislation is required for the re-union of those two semi-separated Departments. The only power conferred by the new Bill on the Board of Education is that of inspecting "any school supplying Secondary Education, and desiring to be so inspected" for the limited purpose of "ascertaining the character of the teaching" and "the nature of the provisions made for the teaching and health of the scholars." Not an atom of power is taken for correcting the character of the teaching if bad, or improving the nature of the provisions for teaching if found to be deficient. All this in an endowed school is left to the uncontrolled discretion of the Charity Commissioners, and in any other school to chance, as now. Inspection, when the authority behind the inspector has neither means to reward, power to punish, nor capacity to change, is, the *Daily News* thinks, perhaps as innocent an amusement as could be devised for a Government office.

Great Yarmouth must now be added to the list of towns in which the registered chemists of the district have banded themselves together for mutual support and the discussion of means of improvement. We are informed by Mr. Harvey Palmer that a thoroughly representative meeting of the chemists in business in Great Yarmouth and Gorleston was held on Thursday, March 23, when Mr. W. S. Poll occupied the chair, and it was unanimously resolved to form a Great Yarmouth Chemists' Association. The following officers were elected: President, Mr. W. Shepherd Poll; Hon. Secretary and Treasurer, Mr. Harvey Palmer; Committee, Mr. H. E. Goddard, Mr. J. F. Roberts, Mr. J. S. Shearman. It was decided to meet on the first Thursday in every month, except during the season (July, August, and September). The proceedings are described as being of a most hearty and enthusiastic character throughout, promising well for the future usefulness of the Association.

Self-Lighting Gas Burners of an apparently satisfactory kind are described in a recent issue of the *Times*, where their action is said to depend on the well-known fact that spongy platinum when placed in a stream of hydrogen or coal gas becomes so hot as to ignite the gas. This is by no means the first time that attempts have been made to turn this property to practical account, but in many cases the endeavour has been unsuccessful because the platinum was allowed to remain in the flame. Hence it became clogged with deposited carbon and failed to produce the desired effect. In the present arrangement this mistake has been avoided, and the igniting material is fixed near, but not actually in, the flame. In a Welsbach burner, for example, a form with which it seems specially suited for use, it is placed inside the chimney, but outside the mantle. The little jet above which the spongy platinum is arranged is ignited in from six to ten seconds after the gas is turned on, and the heat it gives off acts on a slender nickel rod placed close to it. This by expanding actuates a two-way valve, which gradually opens the gas supply to the main burner while closing that to the jet. When the former has become ignited the additional heat it produces expands the rod still more, so that finally the jet is extinguished by the valve, which entirely cuts off its gas. The valve, of course, remains in this condition so long as the burner is in use, but when it is put out the nickel rod cools and contracts, and so closes the passage leading to the main burner while opening that which supplies the jet. Hence the apparatus is ready to work again when light is required.

Regulations for Testing Antitoxin Serum have been approved by the Laboratories Committee of the Royal College of Surgeons. The serum is examined—(*a*) For potency, *i.e.*, for number of antitoxin units per C.c.; (*b*) for any excess of antiseptic; (*c*) for the presence of micro-organisms. It may be sent to the laboratories in bulk, and may there—after being tested and bottled—be labelled with the laboratories' certifying labels. When a batch has been bottled away from the laboratories, the bottles are to be counted and samples selected by the laboratories' assistant, who, after the serum is tested, is to provide labels to be affixed to the bottles and to the cases in which they are contained; these are to be affixed in his presence. The regulations have been drawn up, not with the idea of questioning the *bonâ fides* of any firm, but simply with the object of affording to the public a guarantee that the testing and certification are not merely nominal.

PHARMACEUTICAL SOCIETY.

SCHOOL OF PHARMACY PRIZE EXAMINATION QUESTIONS—ADVANCED COURSE.

BOTANY.

Thursday, March 23—from 10 till 1.

Professor Reynolds Green.

[*Four questions only to be attempted.*]

1. Show how the influence of environment upon structure can be seen in the case of a Xerophilous plant.
2. What is *heterospory?* In what groups of plants does it occur? Point out its bearing on the question of the formation of the seed.
3. Describe the structure of the *pulvinus* of Mimosa. Explain the purpose of this organ, and give as complete an account as possible of the way in which it works.
4. Give an account of the group of plants known as the *Amentiferæ*. What Natural Orders are comprised in this group? What are the characteristic eatures of each of them?
5. Give a sketch of the mode in which the Fungi are classified, and point out the special features of each group.

PRACTICAL BOTANY.

Thursday March 23—from 2 till 5.

Professor Reynolds Green.

1. Prepare a section of an ovule and mount it in glycerin. Sketch your preparation and determine what its condition is with regard to the process of fertilisation.
2. Refer the flowers A, B, C, D to their Natural Orders, stating your reasons in each case.
3. Identify and briefly describe E, F, G.

MATERIA MEDICA.

Friday, March 24—from 10 till 1.

Professor Henry G. Greenish.

1. Describe and comment on the official process for the Assay of Liquid Extract of Ipecacuanha.
2. By what process is Caffeine prepared? In what other drugs does it occur and to what extent? How would you identify it?
3. State what you know of the constituents of Balsam of Peru. By what means may it be identified and its relative value determined?
4. Describe minutely the microscopic and macroscopic characters of foxglove leaves. What are the active constituents, and when are they present in the leaves in most abundance?
5. The last edition of the British Pharmacopœia contains, in certain instances, brief details of the anatomy of vegetable drugs. Discuss the object and desirability of this introduction. In what way would you suggest the extension or curtailment of the descriptions in the next edition?

MATERIA MEDICA.

Friday, March 24—from 2 till 5.

Professor Henry G. Greenish.

1. Make as complete an examination of the drug supplied to you as time will permit.
2. Is the powder supplied derived from the drug you have examined or not? State the grounds upon which your answer is based.

PRACTICAL CHEMISTRY.

Professor N. Collie.

Monday, March 27—from 10 till 1 and 2 till 5.

1. Ascertain the impurity present in the sample of milk supplied.
2. Analyse qualitatively the salt in box A.
3. The solution supplied contains a mixture of two substances; determine quantitatively the amount of each present. (One determination must be by a gravimetric method.)

CHEMISTRY AND PHYSICS.

Professor N. Collie.

Tuesday, March 28—from 10 till 1.

1. What is the action of carbon dioxide on ammonia gas, also on a solution of ammonia gas in water? Give, as well, two instances of carbon dioxide gas combining with an organic substance.
2. Write a short account of the various oxidising agents employed in the laboratory for oxidising organic compounds; also give instances of their individual use.
3. State what happens when the following compounds are heated: Potassium ferrocyanide, urea, an aqueous solution of bleaching powder; also the action of strong sulphuric acid on benzene, alcohol, aldehyde; and how would you prepare a pure specimen of anhydrous hydrocyanic acid, also of oil of bitter almonds from toluene?
4. Discuss the properties of the various different classes of organic compounds containing the hydroxyl (OH) group.
5. Define unit current, unit potential. What is the relationship between the current that flows through a wire and the heat evolved?
6. Give an account of the methods that have been used in liquefying the so-called permanent gases.
7. A beam of light falls obliquely on the surface of a plate of transparent material; give an account of the various changes which the ray and the light composing it undergo.

LIVERPOOL CHEMISTS' ASSOCIATION.

At a meeting held on March 23, Mr. John Bain (senior Vice-President) in the chair, the recent communication from the Secretary of the Federation of Local Pharmaceutical Associations came up for discussion, with the result that it was decided to take no immediate action respecting the sale of such things as liquid ammonia stronger than that of the B.P. by unqualified persons, who take upon themselves to prescribe them internally in dangerous doses, but to make a note of the communication so as to incorporate it with others of similar purport from other sources, and make a representation to the Privy Council at a convenient season.

A note was read by Mr. Harold Wyatt, jun., on

Tinctura Aurantii, B.P. 1898.

He said, in making tincture of orange of the Pharmacopœia of 1885, it had often struck him that what is known as cortex aurantii differs considerably according to the source from which it is procured, the English cut peel being fairly in accordance with the description "white within, from a portion of the inner spongy part of the rind not having been removed," as the 1885 B.P. puts it, whilst the foreign cut peel has usually the whole of the white adhering. It follows naturally that tinctures made from carelessly trimmed peels must vary both in bitterness and aroma. The tincture now official renders it easy for a pharmacist to satisfy himself that he has the best possible product, for fresh peel being required, he has only to perform the simple operation of peeling the fruit himself to be certain that peel "with only a very small amount of the white spongy portion of the pericarp" has been used. The new "maceration process" is simplicity itself, and can be carried out without either special manipulative ability or expensive apparatus. As this is the season when those who wish to make their own tincture must perforce obtain their material, he thought it might be of interest to the members of the Association to give a few figures he had obtained in making a couple of small batches of the tincture, showing the proportion of peel yielded, the amount of white rejected, and the volume of tincture obtained.

No. 1.—16 fine Seville oranges weighed 81½ oz, yielded:—

Peel	21½ oz.
White from Peel	11½ oz.
Juice	18 fl. oz.

Tincture.

20 oz. Peel,
80 oz. Alcohol, 90 per cent.

When pressed gave	91 fl. oz.
Dried exhausted Marc of Tincture	3½ oz.

No. 2—Twenty medium Seville oranges good as to peel but woolly internally weighed 88 ozs. yielded:—

Peel	22 ozs.
White from Peel	13½ ozs.
Juice	12 ozs.

Tincture.

20 ozs. Peel,
80 ozs. Alcohol, 90 per cent.,

When pressed gave	89 fl. ozs.
Dried exhausted Marc of Tincture	3¼ ozs.

These tinctures differed but slightly in colour, and when diluted with water were of the same aroma but more bitter to the taste in the case of No. 2. The lower yield of tincture in No. 2, coupled with the more pronounced taste, pointed to the fruit being not quite so fresh, and therefore not containing so much water as No. 1. This was borne out by the yield of juice, which was smaller. With the desire of as far as possible making use of a bye product the juice was brought up to the boil to coagulate mucilaginous matter and pectin, skimmed, and when cold percolated through enough granulated sugar to make it into a syrup of the same strength as syrup of lemons, and to this the tincture was added in the amount directed in the B.P. syrupus aurantii. This formed a good and palatable syrup, which will doubtless be found useful for extra pharmacopœial flavouring purposes.

Mr. Stockdale said his results as regards tincture of orange practically tallied with Mr. Wyatt's, and, moreover, he would point out that another factor in favour of each chemist preparing this tincture himself was that it paid very well indeed to do so.

Mr. Marsden asserted that when any quantity of fruit had to be operated on hand-peeling was tedious, and it was to be hoped that some satisfactory mechanical peeler would be invented for the purpose.

Mr. Wyatt, on behalf of Monsieur A. Serée, of Paris, also read a short paper on

Latin in Pharmacy,

in which it was urged that the use of the Latin language in prescriptions should be retained. The hope was also expressed that medicines everywhere may come to have the same designations, that the processes for their preparation may be identical, that weights and measures may be of the same system and value everywhere, and, finally, that there may be an international pharmacopœia, with Latin as the international or universal language of medicine, so that prescriptions shall be understood everywhere.

Mr. Wardleworth was then called upon by the President to read Mr. Edwin Dowzard's note on

The Determination of the Alkaloids in Belladonna Root.

It was said to be advisable, now that standardised belladonna preparations are official, to obtain a root containing as high a percentage of alkaloids as possible, that being all the more necessary as the alkaloidal content of the root varies greatly. A simple and reliable method for the determination of the alkaloids in belladonna root is that described by Lyons in his 'Manual of Pharmaceutical Assaying.' Sampling is a most important operation, because, if a representative sample is not obtained, the analysis is practically useless, a difference of 18·9 per cent. having been noted between the alkaloidal content of a dried average sample and that of the whole batch from which the sample was taken. Prollius's fluid as a solvent was recommended in preference to ammoniated alcohol, as it takes up very little besides the alkaloids.

Mr. Cowley thought it would be better if powdered belladonna root was sent out with its alkaloidal content indicated, as such a method would reduce the labour of standardising the preparations in which it was employed. Standardising from picked samples of the entire root was not only fallacious but useless. The yield of alkaloid in the tables before them pointed to some very old root being used if one might judge by the work of Mr. A. W. Gerrard.

Mr. Wardleworth pointed out that though regular increase in the alkaloidal value of wild belladonna root as the age of the plant rose had been observed, this was only relative, and in the case of cultivated root it was much more irregular than in the wild, so much so that the age of a root was of little use in arriving at even an approximation of the amount of alkaloid which might be looked for.

The attention of members was directed to the fact that

The Jubilee Dinner

of the Association would be held at the Exchange Hotel, on Thursday evening, April 20, when it was hoped a full muster of members and their friends would assist.

MIDLAND CHEMISTS' ASSISTANTS' ASSOCIATION.

At a meeting of this Association, held at the Exchange Rooms, Birmingham, on March 22, Mr. J. Spilsbury communicated some

Notes on Practical Pharmacy.

Referring to spirit of nitrous ether, he said it was somewhat surprising that it still retained an official position. There could be no doubt that year by year it found less favour with medical practitioners. The results of the examination of numerous samples were quoted to show what great variation exists in the preparation, and it was suggested that the less free acid there is present the more stable are preparations of ethyl nitrite. With regard to

Solution of Ethyl Nitrite,

the following simple modification of Dunstan and Short's process was suggested :—

Take of

Sodium Nitrite, 95 per cent.	12 oz. 45 grains.
Sulphuric Acid, by weight.....	8 oz. 114 grains.
Alcohol	1 gallon.

The sulphuric acid is gradually mixed with half the alcohol, keeping it cool by surrounding the vessel with cold water, and this is added to the other half of the alcohol containing the sodium nitrite. A glass vessel of the capacity of about 1½ gallons well stoppered is all that is required in the way of apparatus, and the mixture is shaken about twice a day until the reaction is complete. That may be ascertained by periodically testing a sample with a pipette. When solution of barium chloride ceases to give a precipitate and the solution is only very faintly acid, the decomposition is complete. Coming to the subject of

Tinctures,

it was stated that the tendency in pharmacy, as reflected in the Pharmacopœia, appears to be the extension of the use of highly concentrated preparations of drugs. That is a retrogressive step in pharmacy, as the concentrated preparations deposit continuously on keeping and do not faithfully represent the entire medicinal properties of the drug. Tinctures are better prepared direct from the drugs than by diluting imperfectly prepared liquid extracts. Tincture of belladonna prepared from a weight of root calculated to produce about twenty-four gallons of tincture, actually produced thirty-five gallons of full alkaloidal value and containing double the amount of extractive contained in a tincture made from the liquid extract. In other words, a given weight of root will yield nearly 50 per cent. larger volume of tincture than if a liquid extract was first prepared and then diluted. The official process also encourages the employment of inferior quality drugs and imperfect exhaustion, with the result that the product has the full alkaloid value of a liquor with the characters of an imperfectly prepared tincture. To insure a perfectly uniform preparation minimum and maximum specific gravities are necessary. The standard for jalap required by the Pharmacopœia is a trifle high. Of twelve samples examined eight yielded between 7 and 8 per cent. of resin, while the remaining four gave respectively 8 per cent., 8·2 per cent., 9·1 per cent., and 9 3 per cent. In conclusion, reference was made to the difficulty constantly experienced in the preparation of

Nitrate of Mercury Ointment.

In order to prepare a satisfactory sample it is necessary that the whole of the ingredients should be beyond suspicion as to quality. The next and most important point is to insure the maximum reaction between the acid mercuric solution and the fats, and the entire liberation of the gaseous compounds of nitrogen. That may be attained at any temperature from 180° to 290° F. If the preparation in the course of a month or six weeks assumes a more or less dull brown colour it can sometimes be restored by the addition of a further small proportion of nitric acid, but success depends upon the amount of care previously bestowed in liberating the nitrogen compounds, and completing the reaction.

MIDLAND PHARMACEUTICAL ASSOCIATION.

A general meeting of members of this Association was held at the Great Western Hotel, Birmingham, on the 23rd ult., principally to discuss the proposals of the Federation of Local Pharmaceutical Associations. The chair was taken by Mr. Jeffrey Poole (President), and there were also present Messrs. J. Barclay, W. Jones, R. Darton Gibbs, F. H. Prosser, Freeman, and others. Letters of apology were received from Mr. C. Thompson and Mr. Hinds (Coventry). The President opened the meeting with a few remarks in which he emphasised the importance of the proposals that were to be discussed. Mr. R. Darton Gibbs began the discussion with a general review of the whole question, taking the proposals and explaining them *seriatim*. A general discussion ensued on each proposal and the following resolutions were put to the meeting and carried unanimously :—

Ancient Titles.—It is desirable in the interests of pharmacy that firms trading under ancient and non-descriptive titles should also in each pharmacy or shop use or exhibit the name of the existing qualified manager or managers thereof.

Pharmaceutical Society.—The Midland Pharmaceutical Association promises to do all in its power to induce registered chemists to become members of the Pharmaceutical Society.

Poison Regulations.—This meeting of the Midland Pharmaceutical Association approves of the new poison regulations.

Company Trading.—That the discussion be postponed until the Council of the Pharmaceutical Society is in a position to state what form the proposed Pharmacy Bill is to take.

Additions to Poison Schedule.—The Midland Pharmaceutical Association considers the present time a favourable one for urging on the Privy Council the necessity of adding to Schedule II. such poisons as liquid carbolic acid, stronger solution of ammonia, and strong acids.

Distinctive Title for Chemists.—This meeting of the Midland Pharmaceutical Association urges the Pharmaceutical Society to take steps to secure for qualified chemists a distinctive title.

In the course of the discussion on the new poison regulations, the SECRETARY drew attention to Messrs. Southall's "safe poison deposit"; labels and safeguards from Messrs. Silverlock, Townsend and Thonger; clips for stock bottles, and a device for distinguishing poison bottles in the dark or when only part of the wrapper has been removed.

GRIMSBY AND DISTRICT CHEMISTS' AND DRUGGISTS' ASSOCIATION.

This Association held its annual dinner at the Oberon Hotel on Thursday, March 23. Mr. ROBERT COOK, J.P., Vice-President, presided, in the unavoidable absence, through illness, of Alderman E. Palmer, J.P., the President, and there was a fair attendance of the Grimsby representatives. Amongst those present were Messrs. J. A. Hawdon, Treasurer; T. D. Sneath, Secretary; C. Dewing, Assistant-Secretary; Henry Colley, Herbert W. Colley, S. J. North, J. Wharton, and J. Wright, members of the Council of the Association; R. M. Hearne, J. Field-Williamson, T. C. Palmer, Cor. Willson, and W. Willey.

The Annual Meeting and Dinner.

Prior to the dinner, the chief business was the election of officers. These were chosen as given above, with the addition of Messrs. Moore and Cor. Willson as auditors.

The annual report was presented by the retiring Secretary. Mr. NORTH, which showed the number of members to be the same as last year. Meetings had been held every month, at which subjects of interest to their own profession were discussed. Attention had been called during the year to the advisability of asking the Borough Member to do what he could in his Parliamentary office to further the interests of chemists, and it was decided that he be approached on the matter. Alderman Doughty expressed his willingness to serve the Association should opportunity occur. The Committee had received during the year various communications and suggestions from the Federation of Local Pharmaceutical Associations, and has adopted several. The financial statement showed there was a balance in hand of £13 4*s.* 5*d.*, the largest known in the history of the Association.

The CHAIRMAN gave the loyal toasts in excellent taste, and

Mr. SNEATH then submitted that of the

GRIMSBY CHEMISTS' AND DRUGGISTS' ASSOCIATION.

He remarked that he considered they were honoured in having so excellent a President as Alderman Palmer, a gentleman who was widely respected in Grimsby, and who filled the Mayoral chair with distinction and success. They had also the Chairman of that gathering, Mr. Robert Cook, who took a very great interest in their affairs, and was always present at their public gatherings. They had also with them Mr. Tom Palmer, the respected son of their President. With the ex-Mayor and ex-Councillors he thought they were distinctly honoured as an association. He declared they were doing excellent service and proving a very great success. He thought it distinctly creditable that out of the twenty-three chemists in Grimsby they had twenty members of that Association.

Mr. NORTH responded to the toast.

Mr. C. DEWING, the Assistant-Secretary, also responded. He showed that the Grimsby Association were watching keenly the various questions which were brought before Parliament, and giving the same every consideration.

Mr. J. A. HAWDON proposed "The President and Members of the Council," eulogising the excellent services they had rendered, and contending that they could not be better served than in retaining their services.

The CHAIRMAN responded, and expressed the opinion that the Association would grow and prosper.

Mr. J. WHARTON responded on behalf of the Council, and

Mr. TOM PALMER responded feelingly on behalf of his father, the President of the Association.

Mr. COR. WILLSON proposed "The Town and Trade of Grimsby," and said he was always proud of the fact that he was the originator of the Association.

Mr. FIELD-WILLIAMSON responded in the absence of Mr. J. C. White.

The toast of

THE PHARMACEUTICAL SOCIETY

was proposed by Mr. H. W. COLLEY. As a loyal member of the Society he urged them to join it, as he believed it would confer benefits upon them. He thought that, as at Birmingham, all their members should be compelled to join. He coupled with the toast the name of Mr. R. Cook.

The CHAIRMAN, in response, said that the Pharmaceutical Society was the leading body in regard to England. The Society had done a great work for pharmacy, and would do a great deal more if properly supported. He thought they should have the bulk of the chemists of this country members of the Pharmaceutical Society. With regard to visiting the various chemists in Grimsby, he was afraid he was like his friend Mr. Hawdon—he did not see why he should go to every man in the town when they knew he (the speaker) was the local secretary for that Society. If they had the support of the chemists of Grimsby there would be many measures which the Society would be strengthened in pressing forward. In conclusion, he referred to the Benevolent Fund in connection with the Pharmaceutical Society, and thought that the objects of that Fund appealed to all of them.

The toast of "The Ladies" was proposed by Mr. J. WRIGHT, and responded to by Mr. TOM PALMER in a humorous speech, and the proceedings closed.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

At a meeting held on Wednesday, March 22, Mr. G. H. C. ROWLAND, President, in the chair, Mr. GEORGE SINCLAIR made a communication entitled

Notes from an Old Edinburgh Prescription Book.

The book dated back to 1821—78 years ago—and belonged to the firm of H. C. Baildon and Son, Princes Street. One feature of the book was the superior quality of the paper compared to that now in common use for such books. Many examples of polypharmacy were quoted. The practically complete absence of nostrums or proprietary preparations, so great a source of trouble and annoyance in contemporary pharmacy, was pointed out. There appeared to be no recognised sizes for mixtures such as are now universal, all kinds of odd quantities being met with. The elegant and palatable medicaments of to-day were also conspicuously absent, the prevalent features being the number and variety of medicines prescribed for the same patient, the large quantities ordered, and the coarseness and repulsiveness of many of the compounds. An interesting formula for Dr. Thatcher's chalybeate pills, dated 1821, was almost identical with the formula for Dr. Blaud's pills, now so much in vogue. The original formula for Dr. Hamilton's pills—compound extract of colocynth and extract of henbane—occurred several times. Potass. sulph. *c.* sulph. for use in baths was of very frequent occurrence. What seemed to be the original formula of black draught also appeared often. Nux vomica and hydrocyanic acid were not mentioned. There was a prescription for powders of granulated tin. There was one prescription containing as an ingredient essential salt of cinchona, but whether this was the cinchonino (a mixture of quinine and cinchonine) of Gomes, discovered in 1810, or the sal essentiale de la Garaye (calcium kinate) of Count Garaye, discovered in 1746, was not quite clear. Probably it was the latter. Altogether the book was a most interesting illustration of the state of pharmacy in Edinburgh nearly eighty years ago.

Mr. RUTHERFORD HILL, in a practical demonstration entitled "Back-Shop Experiments," showed how, by means of simple appliances usually to be found in the back shop of a pharmacy, it was easy to illustrate the processes of distillation and electrolysis; the physical and chemical properties of carbon dioxide were illustrated by means of a syphon of potash water; combustion of sulphur in oxygen and bleaching by means of sulphur dioxide as contrasted with bleaching by chlorine were illustrated and explained. Electrolytic analysis of water and synthetic production of water by explosion of measured volumes of oxygen and hydrogen were also demonstrated and explained.

On the motion of the CHAIRMAN, votes of thanks were awarded to Messrs. Sinclair and Hill.

PULVIS ANTI-DIABETICUS.—A secret remedy which has been introduced on the Continent as a remedy for diabetes is said to consist of salol, 36; fol. uvæ ursi, 10; pulv. rad. valerian, 20; lycopodii, 30.—*Pharm. Zeit.*, **43**, 669.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

At a meeting held on Friday, March 24, Mr. Cyril Baker in the chair, Mr. Horace Finnemore read a paper entitled

The Sagacity of Plants.

Taking the various organs of plants in order, the relation of structure to their functions was pointed out; the different parts of plants which are modified for special purposes were described, *e.g.*, the aerial roots of ivy, the tendrils of bryony, and many others. The structure of Dionæa was explained, and the method of catching its prey illustrated by means of diagrams and a preserved specimen. The way some plants protect themselves was then gone into in detail. The means adopted by flowers to attain cross-fertilisation were shown, the flowers explained being *Arum maculatum*, *Salvia*, *Berberis*, and others. The dichogamy of many flowers was pointed out. Entomophillous and anemophillous flowers were discussed, and the influence of these two ways of pollination on the structure of stigmas and pollen of various plants was shown. The means by which plants keep away unwelcome visitors from their flowers was also described.

At the conclusion of the paper, which was illustrated by living specimens, diagrams, and drawings on the blackboard, various questions were raised by Miss Rayner and Mr. Padwick, and those having been replied to, the proceedings terminated.

BRADFORD CHEMISTS' ASSOCIATION.

A general meeting of the members of this Association was held on Tuesday, March 28, Mr. A. H. Waddington, President, in the chair, and opened a discussion on the

Proprietary Articles Trade Association.

Mr. Pickard said that the P.A.T.A. was not the outcome of a manufacturer's or wholesaler's movement, but of a retail chemist in business like themselves. In the year 1895 and in the early part of 1896, Mr. Glyn-Jones approached some of the most important wholesale house proprietors of patent medicines with a view to securing their co-operation. After securing such number as he thought was necessary to make a start, he set to work, with the result that the P.A.T.A. was formed. The objects of the Association were (*a*) the discussion of matters of common interest to the branches of the trade represented with a view to decision and, if necessary, concerted action; (*b*) to take such steps as the Association might be advised were legal to deal with extreme cutting of prices, and to give advice and render assistance to its members in preventing substitution, and (*c*) to do all such other things as might appear to be of benefit to the trade. The prevention of cutting was, of course, the chief object. As to substitution, the term was used in the sense of describing a growing practice amongst retailers by which, without the slightest fraudulent deception, every endeavour was used to induce customers to accept, in lieu of the advertised article they inquired for, and which would be sold at an infinitesimal profit, a similar article, upon which the retailer was unable to secure an adequate return. It was maintained that this practice was due to the fact that the business in advertised proprietaries was conducted at almost cost price, and if the proprietors insured on the distribution of their goods an adequate profit they would be removing the necessity for this substitution. Hence the ground of the appeal to the proprietors. He would specially point out that no compulsory undertaking was asked of retailers as to pushing their own or any other preparation in the place of protected articles. They were not asked to pledge themselves against their will not to substitute. On the other hand, it was contended that, where a fair profit was guaranteed, substitution did not pay, and this fact alone safeguarded the interests of proprietors on the P.A.T.A. list. That this was so was proved by the fact that so many retailers had written to the proprietors of the articles on the P.A.T.A. list, volunteering the statement that they always handed their articles to customers who asked for them without attempting as they formerly did to sell a rival article. The plan by which prices were secured was simple, and obviated the very great difficulties and annoyances experienced, especially by the wholesale trade, owing to the various separate agreements issued by an ever-increasing number of individual proprietors. The proprietors of the articles upon the P.A.T.A. list undertook to withhold supplies of their articles from any firm selling any one of them below the minimum price; or from any firm who after due notice supplied such a "cutter" with any of the goods. Retailers buying through the wholesale houses were not required to give agreements, but immediately intimation of their cutting reached the Association their names were sent to the proprietors and to the wholesale trade, and supplies of the whole list withheld until the correct prices were maintained. The man who said he preferred selling his own preparations, whether he made a profit or not upon an advertised article, and urged this as an objection to the Association seemed to overlook the fact that by joining the movement he was quite at liberty to push his own articles, though he maintained he would find it better business to sell the article he was asked for, provided the transaction showed a fair profit, than to risk offending a customer by pressing him to take something in its place. Their prospects were just what retail chemists and druggists chose to make them. The principal obstacle in the way of an increased list and the chief weapon in the hands of the "cutters" opposing them was that they did not speak for the whole trade. A number of leading proprietors had promised to add their articles to the list directly a fair proportion of the trade showed their desire for such a step by becoming members of the Association. A suggestion that the work of the Association was in opposition to the work of the Pharmaceutical Society was entirely unfounded, and might at once be dismissed, as the objects of the P.A.T.A. were of a character which it would be impossible for the Society to deal with. The first P.A.T.A. list comprised fifteen articles. That was in July, 1896. In the list for March of this year there were over 260 such articles. The membership in the same time had grown from 600 to over 3000. At a meeting of the Sheffield chemists the Vice-President of the Pharmaceutical Society, Mr. G. T. W. Newsholme, during his remarks, said it was becoming a question of getting protection for the proprietors of an article, but for the retailer there was not much protection. Many of the things that had been put on the list had been advanced in price, and the increase did not go into the pockets of the retailers, but into the pockets of the proprietors. Mr. Newsholme said it was a great mistake for chemists to lend themselves to the appearance of evil, and they should not encourage the sale of such medicines at all. The first statement showed Mr. Newsholme to have been mistaken. It was true that the trade had to pay more to the wholesale houses for some articles than formerly, but not more to the proprietors, as Mr. Newsholme stated. As to the statement that the P.A.T.A. sought to secure profit on all classes of proprietary articles, for example, B. and W's., A. and H., the mineral waters (such as Apenta, Hunyadi, etc.), and toilet preparations—all these were proprietaries, and even Mr. Newsholme was interested in them. Would Mr. Newsholme ask them to discourage the sale of such articles as Dinneford's, Savory and Moore's, Benger's, etc., and if not, were they wrong in seeking a guaranteed profit?

In the discussion which followed the reading of the paper,

Mr. J. D. Moulson said the Association could not prevent a man from selling to anyone whether he was a cutter or not.

Mr. J. A. Mitchell said he should continue to subscribe to the P.A.T.A. as long as he saw a chance of profit thereby, but it occurred to him that at present it was the proprietor who got the benefit of it, because if a customer, for instance, came in for a disinfectant, and of three noted disinfectants one was connected with the Association, that one would be recommended. He thought that it paid the chemist best to push his own articles, and he thought there was not much chance of its ultimate success. At present there were not more than half a dozen proprietors of any note on the list.

The President said he was very much in the same position as Mr. Mitchell, but he thought that the Association should have a fair chance, and he thought it was the duty of every chemist to do his part in enabling Mr. Glyn-Jones to do what he could with it. He believed that many of the Association's three thousand members were by no means wholly satisfied with the Association. He was afraid the Association had failed to some extent.

Mr. Pickard then moved the following resolution:—

> That this meeting of the members of the Bradford and District Chemists Association, having watched the career of the P.A.T.A. from its commencement, hereby records its unabated confidence in the aims and methods of the Association, and notes with satisfaction the progress which it has made. It is also urged upon local associations throughout the country the great desirability, in the interests of the trade at large, of according their warm and unwavering support to the Association, which has shown itself so potent an agency in the maintenance of a living profit for the chemist.

Mr. J. M. NEWBOULD expressed some doubt as to whether the resolution did not carry them somewhat farther than they felt impelled to go, and the PRESIDENT also suggested that perhaps it went rather too far.

Mr. E. ROGERSON expressed his very hearty appreciation of Mr. Glyn-Jones's self-sacrifice in the matter of the Association, and also thought that the Association was doing good work in upholding prices.

Mr. SOL TAYLOR, a visitor from Manchester, said he found that throughout the kingdom there was a general opinion on the part of retail traders that they were still waiting for tangible benefit. Upon the suggestion of Mr. Taylor a clause was added to the resolution urging the Association to endeavour to prevail on proprietors to maintain the face value of the goods in every case, and with that addition the resolution was carried.—The proceedings terminated with a vote of thanks to Mr. Pickard.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.

The second annual dinner of this Association was held on Wednesday evening, March 22, at the Hotel Metropole, Newcastle-on-Tyne, and considering the inclemency of the weather was very well attended. The PRESIDENT, Mr. F. E. Schofield, Morpeth, occupied the chair, the vice-chairs being occupied by Mr. T. MALTBY CLAGUE and Mr. C. RIDLEY.

The toast of "The Queen" having been duly honoured, Mr. G. F. MERSON proposed the toast of

THE PHARMACEUTICAL SOCIETY.

He said it behoved every chemist on the Register to join the Society, which was so much calculated to benefit their business. Instead of grumbling, let them join the Society, and make it what they would like it to be now they had the opportunity, as members, of voting at the Council elections. There were indications, he said, that the Society was becoming less of a strictly professional, and more of a trade organisation; well, they were all tradesmen, and he personally felt proud to be so.

Mr. F. R. DUDDERIDGE, in responding, said if they became members of the Pharmaceutical Society they would be able to assist in the carrying of measures in the right direction. The Society last year carried a Bill conferring membership on those who were previously only associates, and put a stop to most pernicious legislation, which would have been the thin end of the wedge to take away all their privileges. He referred to the privilege of retailing certain scheduled poisons. If they stuck together and gave the Council their support, then the privileges they had and their influence as a body, not only of tradesmen, but as professional men, would be extended, and they would secure legislation which, if it did not give them all they wanted, would at any rate go a long way in that direction.

Mr. T. MALTBY CLAGUE proposed the toast of

THE MEDICAL PROFESSION,

which he believed did more than any other profession for humanity at large. It used to be said that surgery was going ahead, whilst medicine was lagging behind, but this was heard less frequently now, and he thought there was less reason why it should. Medicine had made very considerable advances during recent years, and amongst other things in the use of those extracts of various glands, but long before this became common all the knowing physicians had found there was an animal extractive from one of the most mysterious parts of the body which was of great use in the treatment of maladies, and that was the extract of "gumption" got from the brains of the pharmacist. Great progress had also been made in the science of public health, and gratifying success had been achieved in the reduction of mortality by sanitary measures, and Professor Oliver, whose name was coupled with that toast, had taken no inactive part in that work. He had also been employed by a wise Home Government, jealously guarding the lives of its subjects, to inquire into such conditions of factory life as tended to premature disease and early death.

Professor OLIVER, M.D., responded. Years ago, he said, they heard a great deal about the rapid advance of surgery, and about medicine being almost at a standstill. But medicine was doing silently a great deal of work, and he believed they were now getting the benefit of its accumulated facts and experience. Customs in medicine and in their profession doubtless die hard, and in the use of animal extracts it appeared to be going back to the time when such remedies as the blood of the lizard, etc, were used, but he thought disease was now being healed on far more scientific lines than hitherto. The medical profession, however, did not take all the credit themselves. They had sometimes led and pharmacists had followed. Pharmacists had sometimes suggested, and the medical profession had only been too glad to act on the suggestions. He must say that, while he gladly recognised that it was something perhaps, after all, to present medicine in a more palatable form, he sometimes thought they went a little to the other extreme in the use of such things as palatinoids, etc.

Mr. R. H. BELL gave the toast of the

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' AND KINDRED ASSOCIATIONS.

He urged the chemists to keep such associations as these going, to keep up their attendance at the meetings as far as practicable, and then these societies would be able to make themselves felt.

Mr. C. RIDLEY responded. He said this was an age of unions. He believed that never was the trade more united than at present, and he was pleased that the chemists were adopting that method. He reminded them that their Society was the means of influencing support from twelve members of Parliament for the amended Pharmacy Bill when before the House of Commons last year, and that was one instance which showed what these associations would do for the welfare of the trade.

Mr. F. GILDERDALE, F.C.S., responded on behalf of other associations, and also directed attention to the address delivered by Mr. G. T. W. Newsholme, Vice-President of the Pharmaceutical Society, before the Bradford and District Chemists' Association on February 21, 1899, on "The Improvement of Local Organisation," which was fully reported in the *Pharmaceutical Journal*. He would like them to give that address their careful study and attention, as there was much in it which, if followed, would raise the position of pharmacy to a higher level than at present.

After the PRESIDENT had ably proposed "The Municipal Corporations of Tyneside and District," which was duly responded to by Ald. GREY (Mayor of Morpeth),

Mr. W. KERSE proposed "The Visitors." He said the Newcastle-on-Tyne and District Chemists' Association were proud to welcome those visitors who had come amongst them that night. It showed by their presence that they were in perfect sympathy with such organisations, and he trusted that the trade would become thoroughly united. Councillor L. THOMPSON responded.

The PRESIDENT proposed "The Teaching Staff of Newcastle," which was replied to in a neat speech by Mr. A. M. ELLIS, Principal of the Rutherford College.

Mr. T. MALTBY CLAGUE proposed "The President," which toast was drunk with musical honours.

Mr. SCHOFIELD, in reply, thanked them very much for the kind manner in which they drank his health, and could assure them that at all times he would be willing to do what he could for the benefit of the Association.

NEW REMEDIES.

PARAPHENETIDINE FURFUROL.—On heating together furfurol and paraphenetidine, flat tabular crystals of a compound of the two bodies are obtained. This is stated to possess an antipyretic and analgesic properties.—*Zeits. des Allg. Osterr. Apoth. Verein*, 52, 569.

OX BLOOD AS A REMEDY.—Blech recommends ox blood as a useful therapeutic agent. The blood is caught direct in an antiseptic vessel and beaten for a few minutes with a sterilised glass rod to prevent coagulation. It is then bottled into sterilised flasks. Certain commercial preparations consist of ox blood prepared in this way, to which a little whiskey and dried white of egg has been added. For internal use a little salt and pepper improves the taste, and boric acid (1:1000) tends towards its preservation. This preparation is an excellent tonic and blood enricher; the dose is 15—30 gms. four to six times per diem, before meals. For obstinate ulcers the external application of a tampon of gauze, saturated in the preparation, is productive of highly beneficial results.—*Pharm. Zeit.*, 43, 860, after *Deutsch. Med. Zeit.*

EXTRACTS FROM CONSULAR REPORTS.

The Exports of Liquorice Root from Batoum in 1897 declined by some 41 per cent. as compared with the export of the previous year. The strong competition of the root-pressing factories of Syria in furnishing the root to America is considered to be the cause of the decline of the Trans-Caucasian trade. The successful competition of the Syrian factories is attributed chiefly to the fact that the peasantry of the root-growing districts of Asia Minor rests satisfied with a less rate of payment for collecting the root than is the case in the liquorice root bearing lands of the Trans-Caucasus. In Syria, too, the transport of the root on camels from the places where it is collected to the ports of shipment is said to cost less than the charges made by the State railway for carrying the pressed root to Batoum, while the freights from Syria to American ports are also lower than they are from the Black Sea.

A Factory for Pressing Liquorice Root, according to a recent report, is to be established at Novorossisk (Russia), where there is said to be an immense reserve of the root near the railway line and within easy distance of Novorossisk.

The Manufacture of Lime Juice, if taken up by persons of small capital in the Virgin Islands, Dr. N. G. Cookman is of opinion, would be nothing short of salvation for the islanders. The lime tree is reported to flourish wherever grown on the islands; there is no blight, no lengthened period of drought, nothing but what is eminently suited for it. The natives, however, do not seem inclined to plant the lime tree more extensively in their gardens, having a conservative dislike to any innovation, beneficial or otherwise.

The Yield of Cloves from Zanzibar and Pemba during 1897 was the lowest recorded for many years, being 883,785 lbs. less than the preceding year. The reason is said to be two-fold, in the first place it was due to the unusually dry weather which prevailed during the beginning of the clove season of 1897-98, and in the second place, to the important and difficult question of labour. The clove tree requires a good deal of care and attention, and well repays the labour bestowed upon it. Experiments have shown that the buds should be picked when the calyx tubes or stems are of a pink colour; if left until the stems become red, the latter will be brittle and the flowers apt to open during the process of drying, with the result that many of the heads will drop off, and the sample deteriorate in value. If picked green, the dried cloves will be shrivelled. The buds grow in bunches, and in each bunch there may be buds in various stages of ripeness, so that to obtain a good and uniform sample the trees should be carefully watched and the buds picked as each reaches the condition in which experience has shown that it can best be submitted to the subsequent process of drying. To properly carry out this method a large number of labourers is required, but the decree abolishing the legal status of slavery following the reduction of the number of slaves by natural causes, and the effectual suppression of all the methods by which a fresh supply used in former times to be obtained, has made it impossible for the Arab clove planter to carry out any of the methods by which he has learned to improve his crop and so increase his income. The result is that he is often only too glad, if he can, by mutual agreement with his neighbours, to engage a sufficient number of hands to clear his trees in whatever condition the buds may be, consequently the quality of the cloves suffers and fewer trees are being cultivated.

Elementary Education in Germany for 1898-99 was estimated to cost the State, according to the Prussian Budget for that period, £4 025,000; higher schools, £580,000; technical schools, £102,000; while £86,000 went for medical purposes.

The Olive Crops in the districts of Batoum and Artvin are reported to have been completely destroyed by the severe frosts, and it is stated that in some of the villages of these two districts the olive trees will bear no fruit for the next two or three years.

Mexican Vanilla is produced principally in Papantla, Misantla, and Tuxpam, and is harvested from November to February, being divided into four classes. There is much risk in the curing of vanilla, so that cultivators generally sell their crops to professional curers.

SELECTED PRACTICAL FORMULÆ.

Cod-Liver Oil Plaster.

Emplastrum plumbi, 300; cera flava, 125; ol. jecoris aselli, 175. —*Pharm. Cent.*, **39**, 697, after *Revue Med. Pharm.*

Floor Polish.

Shellac, 1500; resin animi, 525; yellow resin, 750; alcohol, 95 per cent., 6000; yellow ochre, 1500; umber, 100.—*Pharm. Cent.*, **39**, 697, after *Sudd. Apoth. Ztg.*

Meerschaum Cement.

Mass together casein and sodium silicate to the consistence of a soft paste; then add enough magnesia to make it stiffen. Use as soon as mixed, and press the joined pieces firmly together for some minutes.—*Deut. Amer. Apoth. Zeit.*

Complexion Lotion.

Milk of almonds, 300; naphthalin, 10; nitrobenzene, 2. M.s.a. This emulsion forms a most efficient complexion lotion.—*Formulary of Bull. Gen. de Therap.*, **135**, Sept., 1898.

Formoformine.

This dusting powder for the feet is composed of formaldehyde, 0·13; thymol, 0·1; zinc oxide, 34·44; starch, 65·27.—*L'Union Pharm.*, **39**, 449, after *Revue de Flandres.*

Pyrogallol Collodion.

The rapid darkening of colour of pyrogallol when dispensed in the form of ointment may be entirely obviated, according to Bompied, by employing a flexile collodion as the vehicle, as recommended by Unna. The formula advocated is pyrogallol, 1; Canada balsam, 2; collodion, 17. When applied to the skin this forms a brilliant varnish, which may easily be removed, when desired, by the aid of a little alcohol or ether-alcohol. The same vehicle also forms an excellent means of applying zinc oxide.—*L'Union Pharm.*, **39**, 436.

To Prevent Hair Falling off.

Hydrochloric acid, 1; alcohol, 30; mix. A little of the mixture is rubbed on the scalp every evening at bedtime.—*Formulary of Bull. Gen. de Therap.*, **136**, September, 1898.

Purgative Draught.

Infuse senna, 12 grammes, in water, 300 grammes; add chloral hydrate, 1·5 to 3 grammes, and simple syrup, 30 grammes. This mixture is said to give good results where jalap and even croton oil have proved inactive.—*Formulary of Bullet. Gen. de Therap.*, **136**, September, 1898.

Fentozone.

This is composed of acetic acid, 5; phenol, menthol, camphor, and eucalyptus oil, of each 2; oil of verbena and oil of lavender, of each 1.—*Bullet. Commerc.*

Healing Ointment.

The following composition has a good sale in America as a domestic healing ointment: Resin and yellow wax, of each, 240; Venice turpentine, 120; sassafras oil and tannic acid, of each, 15; zinc oxide, 240; prepared lard, 960. Mix intimately.—*Pharm. Post*, **32**, 7.

Djamboe Preparations.

Liquid extract of djamboe is prepared as follows: Djamboe leaves in coarse powder, 100; alcohol, 90 per cent., 20; distilled water, 10; glycerin, 10. The leaves are moistened with these fluids, previously mixed, and allowed to stand. Percolation is then conducted with a menstruum of alcohol, 90 per cent., 2; water, 1. The first 85 fluid parts are reserved and percolation continued until the drug is exhausted. The second percolate is then evaporated to 15 fluid parts, mixed to the reserve, and finally adjusted to 100 fluid parts with more menstruum. Djamboe wine is prepared from djamboe leaves, 1; sherry, 9; and alcohol, 50 per cent., or cognac, 1. The incised leaves are macerated in the menstruum for eight days, pressed, and filtered. The addition of 2½ per cent. of 90 per cent. alcohol will prevent any further deposit.—*Pharm. Cent.*, **39**, 700.

LETTERS TO THE EDITOR.

The Forthcoming Council Election.

Sir,—Your remarks in the editorial last week are extremely appropriate and well-timed. From it we may assume there has been an addition to the number of adherents to the Pharmaceutical Society who are qualified to vote at the next election of councillors of about 3000, making the number entitled to vote nearly double that of any previous year. This circumstance shows that a considerable interest is being taken in pharmaceutical matters by those who have been previously apathetic, and one may justly assume that a larger proportion of voting papers will be returned filled. We may further assume that a number of candidates will have put themselves forward for election who are able to voice the opinion of that large section of the craft which has recently joined the Society, a section whose views ought to be represented. For the benefit of pharmacy it is essential that capable men only be returned, and as some of the candidates may probably be of local reputation only, though possibly possessing sterling worth, a statement of their views and the line of policy they propose to adopt, should they be elected, would be of the utmost value to those who have recently jointed the Society, as well as to members of longer standing. From the remarks in your last issue, I understand that you are willing to print in the Journal any statement a candidate is prepared to make. It would greatly assist those gentlemen if the executives of local associations or individuals interested in the election would draw up and post to them, when their names are published, a list of questions, the answers to which would assist voters in their selection of candidates. It is to be hoped that candidates will make full use of the offer that has been made them, and that members of the craft will take advantage of the power they possess of defining the line of policy to be adopted in future by their representatives by placing themselves in a position to vote, and by returning their voting papers filled.

6, Sandon Terrace, Upper Duke Street, Liverpool, March 27, 1899. R. C. COWLEY, *Hon. Secretary of the Federation of Local Pharmaceutical Associations.*

Erythrol Tetranitrate.

Sir,—An accident, by which a chemist lost his life, happened at a tabloid factory at Dartford on December 15, 1897. He was engaged in mixing erythrol tetranitrate with finely powdered lactose in a mortar when an explosion occurred. Again, at the end of 1898, an accident was caused by erythrol tetranitrate being inadvertently thrown into a fire, and one person was injured. Erythrol tetranitrate is possessed of explosive properties and is highly sensitive, more so, indeed, to percussion than dynamite or guncutton. As it has lately come into some use in the place of nitro glycerin as a remedy for angina pectoris, I should be glad if you would draw special attention in your Journal to the dangers attending the handling of this drug.

Home Office, Whitehall, S.W. March 24, 1899. A. FORD, *Colonel, H.M. Chief Inspector of Explosives.*

"Rough on Rats."

Sir,—Observing in your current issue a pointed reference to "Rough on Rats," may we be allowed to say that the preparation appears to be most carefully labelled by the manufacturer, who also indicates prominently on each package the various antidotes available in case of accident. So far as we are concerned, remittances reaching us are invariably returned to the senders with an intimation that the poison is obtainable only from a qualified chemist. We feel sure the comment in question has been made under some misapprehension of the facts.

London, March 27, 1899. F. NEWBERY AND SONS.

The Determination of Uric Acid in Urine.

Sir,—I fully endorse Mr. A. B. Passmore's recommendation that the acid ammonium urate precipitated in F. G. Hopkins' process for the determination of uric acid should be washed with ammonium sulphate, not with ammonium chloride. I may point out, however, that the proposal is not novel. I suggested it originally in my 'Chemistry of Urine' (page 171), published in 1895, and the recommendation is repeated in the same words in my 'Commercial Organic Analysis' (vol. 3, part 3, page 365), published in 1896. I may add that the titration of uric acid by a standard solution of piperidine, as proposed by Tunnicliffe and Rosenheim (*Brit. Med. Journ.*, February 5, 1898), is, in my opinion, a method likely to increase in favour when it becomes generally known.

Sheffield, March 24, 1899. ALFRED H. ALLEN.

ANSWERS TO QUERIES.

Removing Indian Ink Marks.—Nothing short of a surgical operation is likely to remove them. [*Reply to* H. R. H.—25/4.]

Glycerin and Cucumber.—See reply to C. T. J., *Pharmaceutical Journal*, March 11, 1899, p. 250. [*Reply to* G. S.—24/23.]

Preliminary Examination.—The last occasion on which the Pharmaceutical Society's Preliminary examination will be held will be in July, 1900. [*Reply to* L. R.—25/23.]

The Title "Pharmaceutical Chemist."—A registered chemist is not entitled to style himself "pharmaceutical chemist" unless he passes the Major examination. [*Reply to* T. J. G.—25/18.]

Botanical Sections.—Cross and Cole's 'Modern Microscopy' (Baillière, 3*s.* 6*d.*) contains the information you require, and is an extremely practical book. [*Reply to* I. R. B.—25/19.]

Botanical.—(1) Arnold's 'Flora of Sussex,' published by Messrs. Hamilton, Adams and Co., London, in 1887, at 3*s.* 6*d.*; (2) see reply to C. I. J. in last week's issue. [*Reply to* W. H. W.—25/5.]

Science Examination Papers.—The papers are published by Messrs. Eyre and Spottiswoode, East Harding Street, Fetter Lane, E.C., and those for any single year will be sent post free on remitting 8½*d.* in stamps. [*Reply to* W. J. D.—25/20.]

Chelidonium Majus.—The note you refer to appeared in the Journal for January 30, 1897, page 86. See also the note at page 61 of the issue for January 15, 1898, as well as the monographs in the new editions of the 'Extra Pharmacopœia' and Squire's 'Companion.' [*Reply to* A. W. H.—25/25.]

Medical Examinations.—You will not be exempted from passing the medical preliminary unless you have passed one of the scholastic examinations recognised by the General Medical Council, and passing the Minor examination will not exempt you from any of the subsequent tests. Write to the Registrar of the General Medical Council, 299, Oxford Street, London, W., for further information. [*Reply to* T. G. W.—25/17.]

Marking Ink.—Your failure with the marking ink was probably due to adding the potassium bichromate too quickly. It should be added in very small quantities at a time, allowing the action to cease before adding more. Another formula similar to the first, which gives good results, is:—Aniline hydrochloride, 120; powdered gum acacia, 120; glycerin, 120; water, 500; dissolve, add a solution of copper chloride, 15; ammonium chloride, 10; sodium chlorate, 20; in water, 100. Expose the linen to steam for a time after marking. [*Reply to* J. M. C.—24/32.]

Liquor Ferri Phosph. "Magnetic."—This preparation is supposed to contain ferroso-ferric phosphate, and may be prepared as follows:—Solution of persulphate of iron, 11; solution of ammonia, 17 fl. pts. or *q.s.* Dilute the ammonia with 2 pints of water, gradually add the solution of ferric sulphate previously diluted with two pints of water; take care that the mixture at the completion of the mixing smells distinctly of ammonia; wash by decantation until free from sulphate, thrown on to a calico strain and drain well. Dissolve the moist magma in citric acid, 7½, and dilute phosphoric acid, 3; then gradually add, with constant stirring, dilute solution of ammonia, 6½. [*Reply to* B. M.—28/22.]

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Influence of Electricity upon Plants.

G. E. Stone bases conclusions as to the influence of electricity on plants upon measurements of about twenty thousand plants. He finds that electricity exerts an appreciable influence on plants, the application of certain strengths of current for one minute or less being sufficient to act as a stimulus, while germination and growth are both accelerated by electricity. Plants so stimulated do not respond immediately, but possess a latent period of about twenty-five minutes. The reaction to electrical stimulation is limited to a narrow range in current intensity, and is manifested in an acceleration or retardation of metabolic activity, according to the nature or the strength of the current employed. There is a minimum, optimum, cessation, and maximum stimulus, and the excitation produced by alternating currents is more marked than that produced by direct currents.—*Bot. Gazette*, 27, 123.

Microscopic Cements and Varnishes.

According to Charles F. Rousselet, in order to obtain a microscopic cement varnish that will permanently prevent the escape of the mounting fluid and protect it from evaporation, a substance must be chosen, irrespective of its brittleness, that will neither affect nor be affected by the preservative fluid; the cement selected must then be protected by a trustworthy varnish. Three kinds of cements are available: (1) Those gums and balsams soluble in the mineral naphtha series of solvents, such as turpentine and benzol; (2) those gums and lacs soluble in alcohol and wood naphtha; (3) oil varnishes, such as gold size. The choice of cement depends on the nature of the preservative fluid. Canada balsam and similar mounts may be protected by ringing with a solution of shellac in alcohol; the addition of Venice turpentine or else of twenty drops of castor oil to the ounce of the shellac varnish, overcomes the brittleness of the shellac. Watery fluid mounts are best secured by using two, or, better, three cements. Gum dammar in benzol, two volumes, mixed with gold size, one volume, is first applied; gum dammar is a bad and brittle cement, but is especially useful in sticking firmly to glass, even in presence of water or glycerin. A few layers of gold size are then applied; the solvent evaporates and the oil hardens by oxidation. In order to prevent the oxidation of the gold size going too far it is well to finally cover with a layer of some alcoholic cement, *e.g.*, a solution of shellac and Venice turpentine. Glycerin, the most difficult substance to seal securely and permanently, requires first a ring of dammar gold size cement, then, after washing away traces of glycerin, ring successively with shellac varnish, gold size, and finally with Ward's brown cement, the basis of which is shellac. Glycerin mounts so treated will not leak. Asphalt varnish, zinc white and similar substances are more ornamental than practically useful. —*Science Gossip*, 58, 297.

Juice of Fungi in Snake Poisoning.

Having previously found that certain ferments and tyrosin are capable of acting as antitoxins to the venom of vipers, C. Phisalix finds that the juice of various species of fungi, both edible and poisonous, has when injected the same immunising power. The material employed in over two hundred experiments was obtained from cultivated mushrooms, as these were most easy to procure. Equal weights of finely cut mushrooms and of chloroform water were macerated for twenty-four hours, and then filtered; the filtrate, preserved by the addition of a few drops of chloroform, was then used as a vaccine. This substance was not in itself harmless, and in large doses even caused death. In spite of all antiseptic precautions, it often caused mortification of the tissues, unless filtered through a Chamberland filter, or sterilised by boiling. The immunising effect of the injections was, however, in the case of guinea-pigs, very marked, and was increased by repetition on the same subject at an interval of fifteen to twenty days. The immunity thus acquired lasted for from fifteen days to a month.—*Comptes rend.*, 127, 1036.

Closed Stomates.

According to Th. Wulff, the closing of the stomates by a layer of wax, hitherto known chiefly in the Coniferæ, is a widely spread phenomenon, having evidently for its object the reduction of transpiration. To this may be attributed the very low energy of transpiration in conifers as compared to angiosperms, about as 1 to 6. Even when the stomate is not completely closed on the outside, the communication is often cut off between the pore and the internal air-chamber. The stopper of wax does not consist of a homogeneous mass, but of rounded or angular granules. It appears to be formed from the guard-cells themselves, or from epidermal cells contiguous to them. Carbon dioxide diffuses readily through the thin layer of wax, so that assimilation may proceed even when transpiration is greatly hindered.—*Oesterreich. Bot. Zeitschr.*, 48, 1898.

Permanent Stain for Starch.

J. H. Schaffner states that a good and durable stain for starch may be obtained by the use of (1) aniline safranine in alcoholic fifty per cent. solution, prepared by combining equal parts of aniline water and a saturated alcoholic ninety-five per cent. solution of safranine; (2) gentian violet, a two per cent. aqueous solution. Stain from two to four hours in the safranine, and from two to eight minutes in the gentian violet. The slides should be taken from the alcohol quite rapidly, or too much stain will be washed out.—*Journ. Applied Microscopy.*

Fertilisation of Araujia.

Dr. John Lowe has communicated to the Linnean Society some observations on the fertilisation of *Araujia albens*, G. Don, a Brazilian climber, which in the South of England grows in the open air. Last summer it was blooming freely in Lord Ilchester's garden at Abbotsbury, where the flowers were visited by numbers of butterflies, diurnal moths, humble-bees, wasps, and large flies, many of which were captured and imprisoned for a time in the pinching-bodies (*Klemmkörper* of Müller). All those insects, with the exception of some humble-bees, in their visits to the nectar left their proboscis behind, and sometimes a leg, being not strong enough to detach the pinching-body. Dr. Lowe described the structure of the pinching-bodies, which are flat horny plates situated, above the nectar-cups, at each angle of a 5-sided hollow cone in the centre of the flower, in which is placed the stigma. There is only a small opening at the apex and a narrow slit at the base of each facet of the cone. To the upper point of the pinching-body the pollinia are attached. When an insect has its proboscis caught in the slit, which narrows always to its point, it can only escape by tearing away the body with its pollen-masses or by leaving its proboscis in the slit. In the former case it carries the pollinia to the next flower it visits, and thus effects cross-fertilisation by leaving the pollen-mass between the anther-wings, whence it rapidly passes into the cone. In some flowers the proboscis of a butterfly or moth was found in each of the five angles of the cone, showing the great destruction of insect-life caused by the plant.

LESSONS IN PHYSICO-CHEMISTRY.

Thermo-chemical Measurements.

Much attention has been devoted in recent years to measuring the amounts of heat that are evolved or absorbed in chemical reactions. It is found, as our knowledge of the conservation of energy would lead us to anticipate, that when given quantities of two or more substances react in a given way, the amount of heat liberated or absorbed is just as definite and unvarying as is the amount of the material product of the reaction. For instance, in the reaction represented by the equation $H_2 + O = H_2O$, we know that if 2 grammes of hydrogen combine with 16 grammes of oxygen, 18 grammes of water are produced; we also know that 68,360 calories or units of heat are evolved. The study of the heat changes accompanying chemical processes has attained to great importance, and demands that a brief account of the matter should be given here. We shall first explain the terms that we shall require to use, then describe in outline one or two of the experimental methods used, and finally refer to the general nature of the results that have been obtained.

"Heat of Reaction" and other Terms.

In order that the expression "heat of reaction" may have an exact meaning, it is necessary that there should be some clear statement or understanding as to the actual quantities of the substances taking part in the reaction whose heat change is being spoken of. It is therefore taken that in all cases except where the contrary is specially stated, the reaction between one "equivalent" in grammes of each of the substances shall be that whose heat is recorded. For instance, by the heat of reaction of sulphuric acid and sodium nitrate we mean the heat change accompanying the reaction of 49 grammes ($\frac{1}{2}$ $H_2SO_4 = 49$) of the former with 85 grammes ($NaNO_3 = 85$) of the latter. The numerical value assigned to the heat of reaction indicates the number of calories that are evolved in the reaction, when the number is a positive one. If, however, a minus sign is prefixed to the number, it indicates that this number of calories has been absorbed or has disappeared. Processes in which heat is given out are called exothermic, and those which are accompanied by the disappearance of heat are called endothermic. The term "heat of reaction," with the meaning here given, may be applied to any chemical change whatever; other terms with more limited meanings, however, are also in use.

Thus in the simplest of all reactions, those in which two elements combine directly, the "heat of combination" is frequently spoken of instead of the heat of reaction. It is reactions of this kind that are first studied, and from them we can proceed to more complex ones. It is often convenient to refer to the heat of reaction with regard to the final product rather than to its constituents, in which case the term "heat of formation" is employed. The heat of formation of a substance may of course include the heat of combination of several elements, since the substance may be composed of several; it is understood that the heat of formation from the constituent elements, and not merely from simpler compounds is intended, unless the contrary is stated. We may also class together those reactions in which a substance is completely oxidised or burnt by means of oxygen; in such cases the heat changes are spoken of as "heats of combustion," while another group is those in which an acid and a base neutralise each other with formation of a salt; we here speak of "heat of neutralisation."

Experimental Methods.

Passing now to the methods used in thermo-chemical measurements, the full working details need not be entered into, as such measurements can only be satisfactorily carried out by those with considerable experience of them.

The apparatus by means of which heats of reaction are determined is the calorimeter (see *P.J.* [4], iii., 293), but the exact form depends largely on the particular experiment for which it is to be used. In measuring the heat of neutralisation of an acid by a base, or the heat of reaction of an acid with a salt, or of one salt with another, the two substances are separately dissolved in sufficient water to form very dilute solutions, the distribution of the reacting substances through a large mass of water giving the most properly comparable results. The two solutions are put in separate vessels in the calorimeter, and surrounded with a jacket to prevent passage of heat to the outside, in the usual way, and each is allowed to come to a constant temperature, which is accurately noted. One method is to put one of the liquids in a closed thin-walled flask, and immerse it in the other liquid; the flask is broken when they are to be brought into contact. A better plan is to have them in separate vessels arranged at different levels, and with a stopcock so that communication can be made at will, when the contents of the higher vessel will run into the lower. Each vessel is furnished with a thermometer and stirrer. The heat that is evolved in the reaction raises the temperature of the solution to an extent that is indicated by the thermometer; and from its mass, specific heat, and rise of temperature the quantity of heat is found. By some observers the specific heat of the very dilute solution is taken as the same as that of water; others have employed the mass and specific heat of the water present instead of those of the solution in calculating the result, entirely neglecting the small amount of salt present; if the specific heat of the solution is separately determined, and employed in the calculation, it is seen that the error introduced by either of the above methods is inappreciable when the solutions are very dilute; for stronger solutions this special determination is necessary.

For determinations of heat of combustion, a modification in the apparatus is requisite. The substance in the solid or liquid state is placed in a little platinum cup in the inside of a strong metal vessel called a calorimetric bomb or grenade. Oxygen is next forced in up to a pressure of about 25 atmospheres and the bomb is securely closed; it is then immersed in the water of the calorimeter until the temperature has become constant. The bomb contains a fine iron wire passing close above the substance to be burnt, and having its ends connected by stouter insulated terminals passing through the walls of the bomb to the poles of a battery. When the temperature in the calorimeter is steady, the current from the battery is momentarily allowed to pass; this heats the fine iron wire so much that it melts and burns, and the hot oxide dropping into the platinum cup ignites the substance there, which then burns by means of the oxygen present. The water in the calorimeter is stirred well and the total rise of temperature noted; the total heat evolved is found in the usual way, the water-equivalent of the bomb having been carefully determined before; the heat due to burning the iron wire is calculated and allowed for. In the case of chemical actions not requiring oxygen in the gaseous state, and in which the substances are not in solution, they are kept from contact by being separately enclosed in small bulbs, and placed in a vessel in the calorimeter; when the temperature has become equalised the bulbs are broken, allowing the action to proceed. If gases are evolved, the vessel in which reaction occurs must be closed with the exception of an exit tube coiled spirally in the calorimeter, through which the gases pass, giving up their heat to the water.

The total heat change of a reaction is often due in part to a change of state in one or more of the bodies concerned in the reaction; a common instance of this is the passing of a

substance into or out of the state of solution in the course of a reaction. It will be seen that it is here largely a question of latent heat; when a solid bccomes dissolved, it undergoes liquefaction no less than when it is fused alone, and heat will be required to liquefy it. The fact that heat disappears during the solution of a salt in water will be familiar to every pharmaceutical student. The heat change that occurs on solution, however, is often partly due to chemical action between the dissolved substance and the solvent, and it becomes necessary to measure directly the heat of solution. To do this, solids are enclosed in small bulbs, and the latter are sealed and put into the water of the calorimeter. When the temperature has become constant, the bulbs are crushed, and the contents dissolved; the heat change is found by the usual calculation from the observed data. Gases are brought to the same temperature as the water in the calorimeter, and then led into the latter in small bubbles; the water becomes saturated with the gas, the heat change is ascertained, and the amount of gas dissolved is then found by analysis of the contents of the calorimeter. Sufficient has now been said to enable the reader to form a general idea of the methods of measurement employed in thermo-chemistry; it remains to refer to some of the more important theoretical aspects of the matter.

General Thermo-chemical Relations.

It will be evident to anyone who understands the principle of conservation of energy, and who realises the fact that what we call heat is only one form of energy, that in studying the heat changes accompanying chemical processes, we are gaining knowledge about the comparative amounts of energy that are associated with different states of matter. Thus, if we have certain quantities of given elements arranged in any particular way, to form two compounds, for instance, and if these two compounds react on each other with a consequent rearrangement of the component elements and with evolution of heat, the arrangement so arrived at must "contain" or be associated with less energy than the former arrangement, since energy in the form of heat has been lost in the change. It is, of course, equally true that the heat gained or lost by a body in any changes that are not chemical, represents a change in the amount of energy associated with it. A given mass of a substance at a high temperature contains more energy, or power of doing, than an equal mass of it at a lower temperature; a given mass of a substance in the liquid state at its temperature of fusion contains more energy than an equal mass of it in the solid state at the same temperature, and so on. One of the most fundamental objects of all chemical research is to learn all that we can about the "power of doing" of different kinds of matter; it is easy, therefore, to see how important it is that so useful a means, as that afforded by thermo-chemistry, of measuring the power of doing, or energy, stored up in substances of different kinds should be fully studied.

Reference has already been made to the fact that chemical processes are often intimately associated with physical changes; it is very frequently impossible to separate and distinguish those parts of a thermal change that are due to physical from those due to chemical change; any expansion or contraction of volume or other alteration of the state of aggregation of the particles, all which are properly physical changes, being accompanied with heat change. It is impossible, further, to separate the different parts of the most simple chemical reactions; in the instance taken above, the combination of hydrogen and oxygen to form water, the actual change consists of three parts, namely, the separation from each other of the atoms which make up the hydrogen molecules, a similar separation of the oxygen atoms, and finally the union of the oxygen with the hydrogen atoms, forming molecules of water-vapour. In the two first parts of this process, that is, in the breaking up of the molecules, heat is absorbed; this is why no action occurs when the gases are mixed at common temperatures, and heat has to be supplied. This stage of the reaction is thus strictly endothermic; the second stage, when the water molecules are formed, is exothermic; and in the sum total of the whole, more heat is produced than is absorbed, and consequently less energy remains in the system. The difference in the amounts of energy before and after the change is measured by the sum total of the heat change; hence, although we cannot separate this heat change into the parts of which it must be the resultant, it is nevertheless valuable as the true measure of the difference in the energy of the system before and after the change. It is clear that when a reaction is spoken of as exothermic or endothermic, the expression is to be taken to refer to the total thermal effect of the reaction, since even the simplest complete reaction consists of an exothermic and an endothermic stage.

It is no very difficult matter to determine directly the heat of formation of water, or of any substance that can be formed directly from its constituents in a simple manner. But this restriction excludes a very large number of compounds, and in such cases the heat of formation is arrived at indirectly. It follows from the principle of the conservation of energy, and it has also been proved experimentally, that in passing from one definite condition of equilibrium of a chemical system to another, the total change of energy experienced by the system is independent of the way in which the second state of equilibrium has been arrived at, so long as the latter is in all cases the same. This will perhaps be made clearer by an analogy drawn from mechanics; if any mass is moved from any position at a certain distance from the earth to a second position at a different distance, the work done by it or on it, or the difference in the amounts of energy (of position) associated with it before and after the movement, does not depend on the route by which it has travelled. In applying this principle to the determination of heats of formation, then, if we can make the process whose heat change we want to measure part of a series of changes of which the other parts admit of direct measurement, and the whole value of which series can be ascertained, according to the rule just given, by starting from the same initial state and reaching the same final state by another method whose thermal value can be directly measured, we obtain the required value as the difference between the value of the whole change and the sum of the other partial changes.

An example will make this more easily intelligible. Formic acid, H_2CO_2, cannot be produced directly from its elements, and its heat of formation has to be found in this indirect way. (For shortness, we used the ordinary symbols for the elements, it being borne in mind that the symbol represents an atomic weight in grammes.) The heat of formation of CO_2 from C and 2O can be found directly, and is 96 960 calories; that of H_2O from 2H and O is also found directly, and is 68,360 cal. Adding together, the heat of formation of $CO_2 + H_2O$ from C, 2H, and 3O is 165,320 cal. If formic acid is burnt, the heat of formation of $CO_2 + H_2O$ from H_2CO_2 and O can be found directly, and is 65,900. Now, by the principle enunciated above, the heat of formation of $CO_2 + H_2O$ from C,2H, and 3O, which we have just seen to be 165,320, is the same, whether these products are formed directly, or after the production of some intermediate body. Suppose formic acid to be formed as an intermediate stage; then of the reactions $C + 2H + 2O = H_2CO_2$, and $H_2CO_2 + O = CO_2 + H_2O$, we know the thermal value of the latter, and also of the sum of the two. Hence, by subtraction, the thermal value of the former, which is what we want to learn, is 165,320 — 65,900, *i.e.*, 99,420; and the validity of

the reasoning is not affected by the fact that we cannot in practice separate the action into the above two stages.

Without entering into a discussion of particular cases, it may be stated as a general conclusion with regard to chemical actions, that when reaction can occur between any given substances in more than one way under the existing conditions, the action that will take place will be that which will be accompanied by the greatest evolution of heat, and consequently will leave the system with the least amount of energy remaining in it. This rule was first put forward by Berthelot, though he also enunciated with it a further statement that has been shown to be erroneous.

A certain connection between the atomic weights of the elements and the amounts of energy associated with them is shown by comparing the heats of formation of similar compounds, such, for instance, as the chlorides of a number of different metals; or the compounds of the same metal with the halogens. The heats of formation are seen to change in regular order with the atomic weights of the elements concerned, thus adding yet another property to those which the Periodic Law has shown to be connected with the atomic weight.

It is among heats of neutralisation that the most general conclusions have been reached in this department of thermochemistry. The experimental results are mainly due to Julius Thomsen, but have been confirmed by other workers. It is found that when a strong base, such as potash, soda, lime, etc., unites with a strong acid, as hydrochloric, nitric, etc., the heat of the neutralisation is the same in every case, it being of course understood that equivalent, not equal, quantities are always employed, and the substances always taken in dilute solution. Thus, if 56 grammes of potassium hydroxide (KOH = 56) dissolved in a large quantity of water, are neutralised by 36·4 grammes of hydrogen chloride (HCl = 36·4), also dissolved in a large quantity of water, the heat evolved is 13,300 cal.; and if 40 grammes of sodium hydroxide (NaOH=40), or 37 grammes of calcium hydroxide ($\frac{1}{2}Ca[OH]_2=37$), or the equivalent quantity of any strong base is substituted for the potash, or 81 grammes of hydrogen bromide (HBr = 81), or 63 grammes of hydrogen nitrate (HNO_3 = 63), or the equivalent quantity of any strong acid for the hydrochloric acid, the heat evolved still amounts to 13,300 cal. The cases where weak acids or bases are employed are somewhat different, and we will leave them for the moment. Since the heat of neutralisation is independent of the specific nature of the acid and the base, it would appear that its development is due to something other than the union of these; the explanation is given by the current theory of solution and electrolysis. According to this theory, which has been proved sound in other ways, when a salt is dissolved in much water, the molecules of the salt do not remain present as such, but undergo dissociation or separation into their "ions," one of which, the positive ion or kation, consists of the basic part of the salt molecule, and the other, the negative ion or anion, consists of the acidulous portion. Sodium nitrate for instance, does not exist in a dilute solution as molecules of $NaNO_3$, but as the free ions Na and NO_3.

The same applies to metallic hydroxides or "bases," and to acids; thus, denoting a monad metal by M, a dilute solution of its hydroxide does not contain molecules of MOH, but the ions M and OH. Similarly, if A stands for an acidulous radical, as Cl or NO_3, a dilute solution of an acid does not contain molecules of HA, but the ions H and A. What happens on mixing the solutions is, therefore, represented by the equation

$$M + OH + H + A = M + A + H_2O,$$

and the heat of neutralisation, so called, is really due to the union of the ions hydrogen and hydroxyl to form water, and is hence the same in all cases. This way of regarding such reactions will doubtless seem strange to anyone meeting with it for the first time, but its correctness has received abundant confirmation from experiments of very different kinds.

It can now be explained why weak acids and bases do not show this constant heat of neutralisation. Such acids and bases, of which acetic acid and ammonium hydroxide may be taken as examples, are only partially dissociated into their ions even in dilute solutions; hence in the first place there is less combination of the ions H and OH than in the former case; as this combination occurs, more of the acid and of the base become dissociated and further combination will take place, and this will continue up to a point depending on the particular substances taken, and the heat evolved will, therefore, not have a constant value. Further, the dissociation of the new molecules of acid and base is itself accompanied by heat change, and this gives rise to further irregularity in the total "heat of neutralisation."

It may here be observed that the heat of neutralisation of acids by bases is not a measure of the "affinity" between them. If one equivalent of a base is treated simultaneously with one equivalent of each of two acids, the proportion in which it distributes itself between them is a measure of their relative "affinity" for it, under the conditions of the experiment. The "affinity" of acids is found to be independent of the base used, and the "affinity" of bases is independent of the acid; further consideration of "affinity" would be apart from our present subject.

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

(*Continued from page 174.*)

RUTACEÆ.

Cusparia.—The vernacular name for the following species in New Granada. *C. febrifuga*, DC. Latin, antifebrile. It has been found of use in typhoid fever, but gained its reputation in cases of dysentery. Angostura, another name for the bark, is derived from the town of that name in Venezuela.

Pilocarpus.—Presumbly from Greek πῖλος (pilos), a hat, and καρπός (karpos) fruit. The fruit consists of five carpels, each of which is rounded at the back and possesses some slight resemblance in shape to a hat. *P. jaborandi*, Holmes. Jaborandi is a Brazilian word applied to various pungent sudorific plants. It is frequently termed *Pernambuco jaborandi*, as it grows abundantly in this province of Brazil.

Citrus.—This was the Latin name for the citron (*C. medica*). It has been said to have its derivation from the town of Citron, in Judæa. *C. aurantium*, Risso. Probably from Latin *aurum* (gold), from the colour of the fruit. The mediæval name *Arantium*, Italian *Arancia*, and Spanish *Naranja* are evidently derived from the Arabic *Nâranj*, an orange. In French the initial *n* was early lost, and the *a* being converted into *o*, the word orange was coined, and thus derived from the original Arabic, but it is also doubtless associated with the French *or*, gold, on account of the golden-coloured fruit.—The variety *Bigaradia*, Hook., is the bitter or Seville orange, the origin of the name is uncertain.—*C. limetta*, Risso. The lime is derived from the Persian *Limu*, the fruit having been introduced into Europe from Central Asia.—*C. bergamia*, Risso, is only a variety of the above. It yields the bergamot, similar in shape to the Bergamot pear, which takes its name from Bergamo, a town in North Italy.— *C. medica*, Linn., var. β *Limonum*, Hook. The name is probably derived from the Arabic, *Laymun*, a lemon. *Medica* is the Latin for Medean or Assyrian,

which appears to indicate that the lemon was originally obtained from the East. The tree is a native of Northern India.

Ægle.—The name of one of the Hesperides, the daughters of Hesperus, whose duty it was to guard an orchard bearing golden apples. Bael fruit resembles an apple in shape and when dried is golden red in colour. *Æ. marmelos*, Correa. Portuguese, *marmelo*, a quince. In the middle ages the bael fruit was called *Marmelos de Benguala* (Bengal quince). Bael is the Indian name for the tree.

SIMARUBACEÆ.

Simaruba.—Simarouba is the Caribbean name for the following species and the genus appears to have been originally spelt thus, *S. amara*, Aublet. Latin, bitter. The bark of the root, the part used in medicine, has a very bitter taste.

Picræna.—Greek, πῖκρός (pikros), bitter. The bitterness of the wood is characteristic. *P. excelsa*, Lindley. Latin, high. The tree is about 60 feet in height. Quassia is now obtained from this plant. It was originally derived from *Quassia amara*, Linn., a plant of the same genus, and possessing a similarly bitter taste, which is now distinguished as Surinam quassia, while the official is known as Jamaica quassia. It is to the *Q. amara* that the reputation of the drug is due, but the supply of the Jamaica variety being more available, the latter is now exclusively official, and thus what was formerly a substitution has become the genuine drug. The name quassia is derived from Quassy, a negro who made known the properties of the wood.

BURSERACEÆ.

Boswellia.—The genus was named after Dr. John Boswell, of Edinburgh. *B. Carterii*, Birdwood. Assistant-Surgeon H. J. Carter, of the Indian Army, first described this plant in 1847. It is one of the species yielding olibanum, the true frankincense. Olibanum is probably derived from Latin *oleum*, oil, and *libamen* a libation, indicating its use as incense.—*B. Bhau-Dajiana*, Birdwood. This species is closely allied to the above and is a source of olibanum. It is named after Dr. Bhau-Daji, a distinguished physician of Bombay.

Balsamodendron, Greek, βαλσάμον (balsamon), balsam, δένδρον, (dendron), a tree. Various aromatic resins are derived from this genus. *B. opobalsamum*, Kunth. Greek, ὀπος (opos), juice, βαλσάμον (balsamon), balsam. This plant is one source of the Balm of Gilead.—*B. myrrha*, Nees. *Myrrha* is the Latin and Greek name for the oleo-gum-resin obtained from this plant. The Arabic *murr* is probably derived from *marra*, to be bitter.

Canarium.—From Canari, the Malay name for the plant. *C. commune*, Linn. Latin, common. The oleo-resin, *Manila elemi*, is supposed to be derived from this species, and as its name implies, is exported from Manila, the capital of the Philippine Islands.

RHAMNACEÆ.

Rhamnus.—Greek, ῥάμνος (rhamnos), a prickly shrub, probably applied to *Paliurus australis*, Gärt., a plant of this natural order. *R. catharticus*, Linn. Latin, cathartic, referring to the purging property of the juice of the fruit.—*R. frangula*. *Frangula* was the mediæval name for the plant, and is probably derived from Latin, *frango*, to break, indicating the brittle nature of its wood. —*R. purshianus*, DC.—Named after Pursh, an American botanist.

VITACEÆ.

Vitis.—Latin, *vitis*, a vine. *V. vinifera*, Linn. Latin, *vinum*, wine; *fero*, to produce. The common grape vine.

SAPINDACEÆ.

Paullinia.—Named by Linnæus either in honour of Simon Paulli, a Danish botanist of the seventeenth century, or more probably after C. F. Paullini, a German medico-botanist, who died in 1712. *P. sorbilis*, Martius. Latin, *sorbeo*, to drink. Guarana, which is prepared from the seeds of this plant, is used for the preparation of a beverage by certain of the aboriginal inhabitants of Brazil. Guarana takes its name from the Guarinis, a tribe of these natives. It is also known as Guarana sticks or bread and as Brazilian cocoa.

ANACARDIACEÆ.

Pistacia.—Greek πιστάκια (pistakia), the fruit of *P. vera* (pistachio nuts). *P. lentiscus*, Linn. *Lentiscus*, the classical name for the mastich tree, from Latin, *lentesco*, to be sticky, referring to the sticky resinous exudation from the bark. Mastich is derived from Greek μάσταξ (mastax), that which is chewed. It is still used largely in the East as a masticatory.—*P. terebinthus*, Linn. Greek τερέβινθος (terebinthos), turpentine. The oleo-resin secreted in the bark, now known as Chian turpentine, was the original terebinth of the ancients.

LEGUMINOSÆ.

Cytisus, Greek, κύτῖσος (kytisos), was the classical name for some species of this order. It is supposed by some authorities to be derived from Cythnos, an island on the Ægean Sea, in which these plants are well represented. *C. scoparius*, Link. Latin, *scopæ*, thin branches, hence a broom made of twigs.

Trigonella.—Diminutive of Latin, *trigon*, a triangle. The flowers of some species of this genus are triangular in shape. *T. fœnum-græcum*, Linn. Latin, *fœnum*, hay; *græcum*, Greek. The plant was cultivated in classical times as fodder for oxen.

Indigofera.—Indigo, a blue dye, and Latin, *fero*, to bear. Indigo, a mediæval word, is derived from Latin *Indicum*, India being the geographical source of the dye. *I. tinctoria*, Linn. Latin, *tingo*, to colour, dye.

Astragalus.—Greek, ἀστράγἄλος (astragalos), a name applied by the Greeks to some unknown species of the Leguminosæ. The word indicates one of the vertebræ of the neck, and it has been supposed that certain leguminous seeds bear some resemblance to these bones, and hence suggested the name. *A. gummifer*, Labill. Latin, *gummi*, gum, and *fero*, to bear. The source of tragacanth.

Glycyrrhiza.—Greek, γλυκυῤῥίζα (glykyrrhiza), is the classical name for the plant, derived from γλυκύς (glykys), sweet, and ῥίζα (rhiza), a root. *G. glabra*, Linn. Latin, smooth. The leaves of this species are smooth, except when young.

Abrus.—From Greek, ἁβρός (abros), delicate, soft, indicating the extreme delicacy of the leaves. *A. precatorius*, Linn. Latin, *precator*, one who prays. The brilliant scarlet and black seeds are used in the West Indies as beads for rosaries, and in the East for similar purposes by the Buddhists. The plant is known as Indian liquorice, from being used as a substitute for the latter.

Mucuna.—The Brazilian name for a species of this genus. *M. pruriens*, DC. Latin, *prurio*, to itch. The hairs of the pod produce intense irritation.

Physostigma.—Greek, φῡσάω (physao), to inflate. The only species of this genus has a peculiar hooked appendage at the apex of the stigma. From the erroneous impression that this structure was hollow and inflated the plant received its name. *P. venenosum*, Balf. Latin, *veneno*, to poison. This refers to the highly poisonous character of the seeds. They are known as Calabar beans from the Calabar coast of West Africa, whence they are exported.

Pterocarpus.—Greek, πτερόν (pteron), a wing, and καρπός (karpos), a fruit. The winged legumes are characteristic of this genus. *P. Marsupium*, Roxburgh. Latin, *marsupium*, a pouch. The fruit of this species has the form of a pouch.—*P. santalinus*, Linn. This refers to its common name of red sandalwood. Sandul is the Persian for yellow sandal wood, with which, however, it has no connection.

Myroxylon.—Greek, μύρον (muron), a perfume or balsam; ξύλον (xylon), wood. The stems contain balsamic resins. *M. tolui-*

fera, H. B. K. Latin, *fero*, to bear. The balsam is said to have been first obtained from Tolu, a seaport town in New Granada. —*M. pereirœ*, Klotzsch. This plant was named after the eminent professor, Dr. Jonathan Pereira, F.R.S., author of 'Elements of Materia Medica' and other well-known works.

Hæmatoxylon.—Greek, αἷμα (haima), blood; ξύλον (xylon), wood. The heartwood is of a deep red colour. *H. campechianum*, Linn. Campeachy, a State in the South of Mexico, includes a portion of the Yucatan Peninsula, where logwood is extensively collected. Campeachy is also the name of a seaport in the State, whence much of the wood was formerly exported, and it is probably from the town that the name is derived.

Cassia.—The Greek, κασία (kasia), appears to have been applied originally to an aromatic bark allied to cinnamon. In its Latinised form, *cassia*, it was afterwards used to designate the pods of *Cassia fistula*. *C. fistula*, Linn. Latin, *fistula*, a hollow reed or pipe, indicating the tubular form of the fruit.—*C. acutifolia*, Delile. The apex of the leaflet is acute, but the characteristic is not peculiar to this species, which is the chief source of Alexandrian senna. *Sena* is the Arabic name for the drug. Alexandrian senna is so called from the port from which it is exported. It is produced in the regions of the Upper Nile.—*C. obovata*, Colladon. The leaflets of this species are oblong-obovate in shape. Although the first kind of senna known in Europe, it is now seldom seen.—*C. angustifolia*, Vahl. Latin, *angustus*, narrow. The leaflets are narrower than those of some other species.

Tamarindus.—This is derived from the Arabic *tamr*, date; and *hindi*, Indian. It is exported from India. *T. indica*, Linn. The specific name of this, the only species, merely reiterates the fact that the fruit is obtained from India. It is, however, common throughout tropical Africa, which is considered to be its original home. It has also been introduced into the West Indies, Central America, etc., where much of the fruit is now produced.

Copaifera.—*Copaiba*, the Brazilian name for the oleo-resin, and Latin *fero*, to bear. *C. lansdorffii*, Desf. This plant was named by Desfontaines after M. Lansdorff, the Russian Consul-General at Rio Janeiro, to whom he was indebted for specimens.

Acacia.—Greek, ἀκή (ake), a point or thorn. The Greek word ἀκακία (akakia) was employed by Dioscorides to designate some thorny shrub probably belonging to this order of plants, but the species is not known. When the genus *Mimosa* was sub-divided the name Acacia was appropriated for these plants. *A. senegal*, Willd. Senegal, a French colony in western tropical Africa, where the gum has long been collected. The best gum-arabic is probably obtained from this and other species which grow in more eastern parts of the continent, especially in Kordofan, a province of the Egyptian Soudan. *Acacia verek* is a synonym of *A. senegal*, Verek being the name which is given to the gum by the negroes. —*A. catechu*, Willd. Catechu is a native name for the extract obtained from the plant and is probably derived from the Indian words, *katti*, a tree and *shu*, juice. Cutch and Kashu are other native names for the extract, and probably have the same or similar origin.

ROSACEÆ.

Prunus.—Latin, *prunus*, a plum tree. *P. domestica*, Linn. The common plum tree was cultivated and used for domestic purposes in ancient times. The medicinal prune is obtained from the cultivated variety, *Juliana*, and is known in France as Prune de St. Julien.—*P. serotina*, Ehrhart. Latin, late in the season. The tree flowers and fruits later in the season than many other species of *Prunus*.—*P. lauro-cerasus*, Linn. Latin, *laurus*, a laurel, *cerasus*, a cherry. The foliage somewhat resembles that of the true laurel, while the fruit is similar in appearance to the cherry. —*P. Amygdalus*, Stokes. Latin, *amygdalum*, Greek, ἀμυγδάλη (amygdale), an almond. Two varieties are official in the Pharmacopœia (1) *dulcis*, the sweet almond, (2) *amara*, the bitter almond, indicating the respective tastes of the fruits.

Potentilla.—Latin, *potens*, powerful, indicating the powerful properties attributed to some species. *P. tormentilla*, Stokes. Latin, *tormina*, the colic. This plant was formerly used extensively as an astringent for the relief of diarrhœa and dysentery.

Brayera.—Brayer was a French physician who lived in Constantinople, and published a description of kousso in 1823. *B. anthelmintica*, Kunth. Kousso, the drug obtained from this plant, is well known as a vermifuge.

Rosa.—Latin, *rosa*; Greek, ῥόδον (rhodon), the classical name of the rose, derived from the Armorican *rhos*, red (Celtic, *rhod*). *R. canina*, Linn. Latin, *canis*, a dog. From very early times the equivalent of dog-rose has been applied to a species of common wild rose. The Greek term κυνόσβατος (kunosbatos), literally the thorn of the dog, was used by Dioscorides and Theophrastus.—*R. gallica*, Linn. Gallic or French rose. It has for centuries been cultivated in France. A variety called the "Provins rose" has long been grown at Provins, a small town, 59 miles south-east of Paris, where Thibaut VI., Count of Champagne, is said to have introduced it from the East on his return from the Crusades.—*R. centifolia*, Linn. Latin, *centum*, a hundred; *folium*, a leaf, indicating the numerous petals of this, the cabbage rose. It is largely cultivated in the flower farms of the south-east of France for the distillation of rose water, and is hence called the Provence rose.—*R. damascena*, Miller. The Damascus or damask rose, which largely cultivated in the East, is often regarded as merely a cultivated variety of *R. centifolia*. From this flower is distilled otto or attar of roses, derived from *atr*, Arabic, or *utr*, Hindu, a perfume.

Pyrus.—Latin, *pirus*, a pear tree. *P. cydonia*, Linn. Greek, κυδώνια (Cydonia), a town of Crete, in the neighbourhood of which the quince was said by Pliny to be indigenous.

Quillaya.—The native name for the following tree in Chili. *Q. saponaria*, Molina. Latin, *sapo*, soap. With water the bark produces a lather similar to that of soap.

HAMAMELIDEÆ.

Hamamelis.—Greek, ἅμα (hama), with, μῆλον (melon), a fruit. The fruit requires about twelve months to ripen, and thus is seen upon the shrub with the flower of the following year. *H. virginiana*, Linn. Virginia, one of the United States, of which it is a native.

Liquidambar.—Latin, liquid amber. The name was originally applied to the semi-fluid resin obtained from an American species *L. styraciflua*.—*L. orientalis*, Miller. Latin, eastern. The plant is a native of Asia Minor. Styrax (Greek, στύραξ) was the classical name for the balsam obtained from this tree.

MYRTACEÆ.

Melaleuca.—Greek, μέλας (melas), black, λευκός (leukos), white. In some species the stem is black in colour, while the branches are white. *M. leucadendron*, Linn. Greek, λευκός (leukos), white, δένδρον (dendron), a tree, from the yellowish-grey bark or white flowers. Cajuput, the name given to the oil distilled from the leaves, is derived from the Malay words, *kayu*, a tree; and *putih*, white. This may also refer to the whitish colour of the branches.

Eucalyptus.—Greek, εὖ (eu), well; καλύπτω (kalypto), to cover. The flower-bud during development is curiously covered by the limb of the calyx which falls off as a lid when the flower expands. *E. globulus*, Labill. Latin, a little ball. This may refer to the somewhat globular form both of the bud and the fruit. *E.*

amygdalina, Labill. Latin, *amygdalus*, an almond, referring to the shape of the leaves.— *E. rostrata*, Schletchendal. Latin, *hooked*. The lid covering the bud is beaked.

(*To be continued.*)

TESTS FOR RESINS, BALSAMS, AND OLEORESINS.*

BY K. DIETERICH, PH.D.

Siam Benzoin.—If a little finely powdered benzoin be heated with potassium permanganate solution, no odour of bitter almond oil should be noticed, even after standing. Ten Gm. of benzoin exhausted with hot alcohol (96 per cent.) until a few drops of the liquid, evaporated on a watch glass, leave no residue, should not give more than 1 Gm. of insoluble residue. The alcoholic solution should redden blue litmus, and give a milky turbidity to water. Siam benzoin should not leave more than 1·5 per cent. of ash.

Venice Turpentine.—Venice turpentine should harden with calcium hydrate, but not immediately, as with common turpentine, but remain tough and stringy for a time, without crumbling.

Resin (Colophony).—If 1 Gm. of finely powdered colophony be macerated in 25 C.c. semi-normal alcoholic potash solution for two hours or until everything is dissolved, on re-titration with semi-normal sulphuric acid and dilution with alcohol, employing phenolphthalein as indicator, 18·6 to 19·3 C.c. should be required, corresponding to an acid number of 160 to 180.

Dammar Resin.—If 50 C.c. of benzene be poured on 1 Gm. finely powdered dammar and 20 C.c. semi-normal aqueous potash solution be added, and the mixture be set aside, well corked, for twenty-four hours, on re-titration, with phenol-phthalein as an indicator, 19 to 19·3 C.c. semi-normal sulphuric acid should be required, corresponding to an acid number of 20 to 30. On ignition practically no ash should be left.

Crude Liquid Styrax.—If 10 parts of styrax be mixed with 10 parts warm alcohol (90 per cent.), it should yield a turbid greyish-brown solution of acid reaction. After cooling, if the solution be filtered off from the impurities and evaporated, it should furnish a brown semi-fluid residue, which deposits crystals after some time. When exhausted with hot alcohol (90 per cent.), it should leave only 2 5 per cent. of insoluble residue. The alcoholic solution evaporated and the residue dried at 100° C. should give at least 70 per cent. On incineration, it should give no weighable ash. When dried at 100° C. until constant in weight it should not lose more than 30 per cent.

Styrax Liquidus Depuratus.—Purified styrax should be free from ash and perfectly soluble in alcohol. When dried at 100° C. until constant in weight, it should not lose more than 8 per cent.

Ammoniacum.—Ammoniacum boiled with 10 parts of water gives a turbid liquid which is coloured dull reddish violet by ferric chloride solution. 1 part of ammoniacum mixed with three parts of water forms a white emulsion which gives a yellow colour with potash, ultimately turning brown. If 5 Gm. of finely powdered ammoniacum be boiled with 15 Gm. of strong hydrochloric acid and filtered through a double moistened filter, the filtrate, when carefully neutralised with ammonia, should not show any bluish fluorescence in a strong light. If 10 Gm. of the gum be exhausted with hot strong alcohol (96 per cent.), the residue insoluble in alcohol dried at 100 C. should not exceed 5 Gm. The amount of ash should not be more than 15 per cent. Ammoniacum should be powdered at a low temperature, without friction.

Asafetida.—One part of asafetida, mixed with 3 parts of water, should give a whitish emulsion, which turns yellow on the addition of a few drops of ammonia. If 10 Gm. be exhausted with hot alcohol (96 per cent.), not more than 5 Gm. of insoluble residue should remain, when dried at 100° C. The proportion of ash should not exceed 10 per cent. Asafetida should be powdered in the cold, friction being carefully avoided.

Galbanum.—If 5 Gm. of finely-powdered galbanum be boiled for fifteen minutes with 15 Gm. of strong hydrochloric acid, and the solution filtered through a double filter which has previously been moistened, the filtrate, after careful neutralisation with ammonia, should show in a strong light the blue fluorescence peculiar to umbelliferone. If 10 Gm. be exhausted with hot alcohol (96 per cent.), the insoluble residue, dried at 100° C., should not exceed 5 Gm.; the ash should not exceed 10 per cent. Galbanum should be powdered in the cold, friction being carefully avoided.

Myrrh.—If 10 Gm. myrrh be exhausted with alcohol (96 per cent.), the residue, dried at 100° C., should not exceed 7 grammes. If a little of the alcoholic filtrate be evaporated to dryness, taken up with ether, and a little bromine vapour brought into contact with the liquid, it should show a red or violet colour; the ash should not exceed 10 per cent.

Euphorbium.—If 10 Gm. of euphorbium be exhausted with hot alcohol (96 per cent.), the residue, dried at 100° C., should not exceed 50 per cent.; the ash should not exceed 10 per cent.

Copaiba Balsam.—If 1 Gm. of the balsam be dissolved in 50 C.c. of strong alcohol and titrated with semi-decinormal alcoholic potash solution, with phenol-phthalein as an indicator, until coloured red, between 2·7 and 3·0 C.c. of the potash solution should be used up. If 1 Gm. of copaiba be mixed in a stoppered flask with 20 C.c. of semi-decinormal alcoholic potash solution and 50 C.c. of petroleum ether (sp. gr. 0·700), after standing for twenty-four hours, on dilution with alcohol and re-titration with semi-decinormal sulphuric acid and phenol-phthalein, between 16·75 and 17 0 C.c. of acid should be required, indicating that 30 to 32·5 C.c. of the potash solution has been used up by the balsam.

Peru Balsam.—The balsam (sp. gr. 1·135-1·145) should not dry up in the air. Two layers of cork smeared with the balsam and united may adhere to each other, but should not become firm, even after some lapse of time at ordinary temperature. One Gm. of the balsam dissolved in 200 C.c. of strong alcohol, and titrated with alcoholic decinormal potash solution, with phenol-phthalein as an indicator, should not require more than 10-15 C.c to produce a permanent red tint. If to 1 Gm. of the balsam weighed into a capacious stoppered flask, 50 C.c. petroleum ether (sp. gr. 0·700) and 50 C.c. alcoholic semi-decinormal potash solution be added, and the whole stood aside for twenty-four hours, and if the fluid be then diluted with 300 C.c. of water to dissolve the separated resin soap, and titrated back with semi-normal sulphuric acid and phenol-phthalein, not more than 40·3 to 41·5 C.c. of sulphuric acid solution should be required. If 1 Gm. of Peru balsam be heated with ether and then extracted with the same solvent on a small tared filter, the ethereal filtrate shaken out once with 20 C.c. of a 2 per cent. potash solution in a separator, and the alkaline solution of the resin ester then precipitated with hydrochloric acid, the resin thus obtained, washed free from chloride and dried at 80° C., should not amount to more than 0·28 Gm. If the ethereal cinnamein solution be allowed to evaporate, then placed for twelve hours in the exsiccator and weighed; after another twelve hours in the exsiccator the weight is again taken, this should not be less than 0·65 Gm., equivalent to 65 per cent. of cinnamein and other ether soluble aromatic bodies.

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SUGAR GRANULES.

These medicated saccharine powders, a revival of an old fashion in pharmacy, are again becoming popular on the Continent. They consist for the most part of small grains of sugar of uniform size, impregnated or coated with the drug, and forming a dry powder, which is easy to measure in a teaspoon, the dosage being generally so adjusted as to make this amount the average quantity to be taken by the patient.

F. Gay gives the following details for the production of "granules." The sugar to be used should be white sugar in small granular crystals, or loaf sugar granulated by carefully crushing, and sifting so that the granules range in diameter from 0·7 to 1 millimetre. The following may be taken as typical forms of these preparations.

Saccharine Granules of Kola.—Alcoholic extract of kola, 5; alcohol 60 per cent., 5; granulated sugar, 95. Dissolve the extract in the alcohol. Put the sugar in a round bottomed basin, pour on it the alcoholic solution, stirring well with a wooden spatula until the sugar is evenly moistened. Then place the basin on a boiling water bath, stir the contents constantly to prevent aggregation; when dry, sift and preserve in dry bottles. One teaspoonful contains 20 centigrammes of kola extract. Prepare in a like manner granules of coca, cinchona, ipecac., cascara, etc.

Saccharine Granules of Tar.—Stockholm tar, 25; tincture of tolu, 50; powdered orris root, 25; powdered liquorice root, 25; granulated sugar, 920. Dissolve the tar in the tincture of tolu and distribute over the sugar as before. Then heat on the water bath until all the alcohol is driven off and the granules show a tendency to cohere, due to the fusion of the tar resins, then withdraw from the water bath and when partly cold add the powders, cool, and sift.

The above powders may be replaced, in the preparation of certain resinoid granules, by such bodies as starch, marsh mallow, etc.; they prevent the granules from cohering and mask the odour and taste of the medication.

Saccharine Granules Prepared by Means of Syrup.—The drug is generally dissolved or suspended in simple syrup, one part of which is used for every nine parts of granules. For example, Saccharine Granules of Ferrous Oxalate: Ferrous oxalate, 25; simple syrup, 100; granulated sugar, 910. Powder the oxalate finely, and suspend in the syrup; place the basin containing the sugar on the water bath, and when it is thoroughly hot mix in the medicated syrup and proceed as before.

If it is desired to add a volatile flavouring, this must generally be done by treating the medicated granule, after the first drying, with the flavour dissolved in alcohol, and again drying. Sometimes, where the quantity of alcoholic solution is small, the flavouring and the syrup may be added simultaneously to the granulated sugar, as in Saccharine Granules of Calcium Glycero-phosphate: Calcium glycero-phosphate, 50; vanillin, 0·10; alcohol, 60 per cent., 10; simple syrup, 100; granulated sugar, 885. Mix the glycero-phosphate with the syrup, add the solution of vanillin in alcohol, and proceed as above.

Saccharine Granules of Terpine Hydrate.—Terpine hydrate, 50; tincture of tolu, 25; simple syrup, 110; granulated sugar, 880. Reduce the terpine hydrate to very fine powder, suspend in the mixture of syrup and tincture, then mix with the sugar as before described. If the medication required is too light and bulky to give an easily pourable mixture with the syrup, the quantity of that vehicle is doubled and the granules are prepared by two successive treatments, drying the first before the second is given.

Digestive ferments may be exhibited in this form if due regard is given to their susceptibility] to the influence of heat. Thus Saccharine Granules of Pancreatin are prepared from—

Pancreatin, 50; simple syrup, 100; oil of lemon, 1; alcohol 90 per cent., 40; granulated sugar, 885. Heat the water bath on which the sugar has been placed to 50° C., then remove the fire, add the pancreatine suspended in the syrup and stir until dry. Then add the oil mixed with the alcohol and again dry. Prepare in the same way granules of pepsin, diastase, papain, etc.

When these saccharine granules contain substances which are somewhat unstable or hygroscopic, they may be protected, to a certain extent, by a coating of tolu, employing 5 per cent. of a 1 in 2 alcoholic solution of tolu. Very deliquescent or easily oxidised substances cannot be prepared in the form of granules.—*Rev. Pharm.*, iv., 278, after *Bullet. de pharm. du Sud-Est.*

SELECTED PRACTICAL FORMULÆ.

Veterinary Formulæ.

For colic in horses.—Spirit of nitrous ether, 28 grm.; tincture of opium, 28 grm.; tincture of aconite, 1·18 grm. To be given in half a litre of water and repeated if necessary in half an hour. *For worms in horses.*—Powdered areca nut, 60 grm.; powdered gentian root. 60 grm.; iron fillings, 30 grm. Divide into twelve powders. A powder is to be followed by an emulsion of oil of turpentine, 56 grm.; linseed oil, 560 grm.; soap solution, *q.s.*, to make an emulsion. *Tonic condition powder for horses.*—Powdered nux vomica, powdered ferrous sulphate, of each 30 grm.; gentian root, 45 grm.; aromatic powder, 15 grm. Divide into twelve powders. *Diuretic powder for horses.*—Resin, 90 grm.; potassium nitrate, 90 grm.; buchu leaves, 45 grm. Divide into twelve powders. *For harness or saddle-galls and bruises.*—Tannin, 12 grm.; alcohol, *q.s.*, to dissolve; boric acid, 90; glycerin, *q.s.*, to dissolve; water to produce 168 grm. To be applied twice daily. *For fistulæ.*—Zinc chloride, 30; distilled water, 28. Two days after the application of this solution, the fistula should be syringed with the following: Creolin, 7; distilled water, 448. *For cracked heels.*—Zinc oxide, 3; carbolic acid, 0·60; lard, 30.—*Annales de Pharm.*, 5, 35, after *Apoth. Zeit.*

Damp-Proof Wall-Paper Paste.

A paste which will adhere firmly to masonry or to wood may be obtained by boiling rye-flour with water in the usual manner, and adding, after boiling, 8⅛ of good linseed oil varnish, and 8⅓ of turpentine to every 500 of the paste.—*Scient. Amer.*, 79, 419, after *Western Painter.*

Plating Aluminium.

Aluminium objects may be plated with silver, gold, copper, or nickel after being carefully cleansed with diluted potash or soda solution or diluted hydrochloric acid (1:10), rinsed in water, and electrolysed in the following baths at a temperature of 60° to 70° C.:—*Silver*: Silver nitrate, 20 grammes; potassium cyanide, 40 grammes; sodium phosphate, 40 grammes; distilled water, 1000 grammes. *Gold*: Gold chloride, potassium cyanide, sodium phosphate, of each 40 grammes, dissolved in distilled water, 1000 grammes. *Copper*: Copper cyanide, 300; potassium cyanide and sodium phosphate, of each 450 grammes, dissolved in distilled water, 5000 grammes. *Nickel*: Nickel chloride and sodium phosphate, of each 70 grammes; dissolved in distilled water, 1000 grammes.—*Pharm. Post*, 32, 39.

For Insect Bites.

A few drops of the following mixture are said to give relief:—Solution of ammonia, 40 Min.; collodion, 3 Gms.; salicylic acid, 0·3 Gm.—*Pharm. Post*, 32, 52, after *Bull. de Therap.*

NOTICES OF BOOKS.

'Physical Chemistry for Beginners,' by Dr. Ch. M. van Deventer, has been translated by Dr. R. A. Lehfeldt, and the English edition (London: Edward Arnold. Pp. 146. Price 2*s.* 6*d.*) is a distinct boon to pharmaceutical and medical students. To say that it is highly spoken of by the famous chemist Van't Hoff counts for much, but the book speaks for itself, and requires no recommendation. The author's object has been to arrange the leading results of physical chemistry in such a way that the subject shall be accessible to those who have not carried out advanced studies in mathematics and physics. It is therefore particularly suitable to pharmaceutical students. The first chapter is devoted to definitions and the second to the fundamental laws of combination—conservation of mass, constant composition, multiple proportions, constant proportions, equivalence of the elements. Those fundamental laws are explained, and the law of Gay-Lussac is shown to be a particular case of the preceding laws. The behaviour of gases provides matter for an important section of the book, and some points of thermo-chemistry are then explained, the laws of Dulong and Petit, Joule, Lavoisier and Laplace, Hess, and Berthollet being all explained in turn. Solutions are next defined, and solubility, osmosis, electrolytic dissociation, etc., discussed, after which photo-chemistry is briefly dealt with, whilst the concluding chapter is devoted to a consideration of the periodic system. There are a number of useful tables in the book, which help to make this useful little work as complete an introduction to the subject as could be desired.

'An Introduction to the Carbon Compounds,' by R. H. Adie, M.A., B.Sc. (London: W. B. Clive. Pp. 90. Price 2*s.* 6*d.*), is intended more especially for the use of students who are studying the physiology of animal and plant life for science and medical degrees. The list of compounds dealt with includes those set in the syllabus of the Intermediate Science and Preliminary Scientific Examinations of London University, as well as those of the first M.B. syllabus of the University of Cambridge, and the book appears well adapted for its intended purpose.

'Practical Lessons in Bookkeeping,' by T. C. Jackson, B.A., LL.B. (London: W. B. Clive. Pp. 372. Price 3*s.* 6*d.*), is a work which deals very fully with the subject of which it treats. It is adapted to the examination requirements of the Civil Service, Society of Arts, London Chamber of Commerce, College of Preceptors, and the Oxford and Cambridge local examinations. The matter is arranged in ten easy lessons, and there are one hundred exercises, together with numerous examplos from recent examinations.

'The Medical Annual and Practitioner's Index' for 1899 (Bristol: John Wright and Co. Pp. 720. Price, 7s. 6d. net) summarises the very large amount of practical work which has been done in almost every department of medicine and surgery during the past year. The dictionary of new remedies occupies seventy pages, following which appears a summary of the principal alterations in the new B.P., by F. A. Rogers. From the very large number of interesting articles may be singled out those on practical X-ray work, electro-therapeutics, climatic and open-air treatment of phthisis, bicycling for women, electrolysis in skin diseases, etc., etc. The beautifully printed atlas of pathogenic bacteria commenced in last year's volume is now completed, eight coloured plates being given. In addition there is a vast mass of information concerning hospitals, nursing institutions, societies, newspapers, etc., and the book appears more indispensable than ever to busy medical practitioners and pharmacists.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—VII.

Arthropoda (continued).

The class Insecta is divided into eight natural orders, according to the structure of the wings, mouth parts, and thorax. The wings may be absent, as in Aptera; or there may be one pair only, as in Diptera; or there may be two pairs, as is most common. They may be hard and horny, delicately membranous, finely reticulated, or covered with soft, hairy scales. The mouth has four pairs of appendages, considerably modified in the different orders, antennæ, mandibles, and two pairs of maxillæ. The three segments of the thorax are in some orders fused together, and in others the anterior segment, prothorax, moves easily at its point of attachment with the other two.

The three insects of the British Pharmacopœia represent three different orders. The Coleoptera, or true beetles, are represented by *Cantharis*. Here we havo two pairs of wings, the anterior pair being hard and horny and used as protective coverings, or "elytra" for the posterior pair, which are finely membranous. In Hemiptera, represented by *Coccus*, the same arrangement of wings occurs where wings are present, the female in this case being without wings. Hymenoptera, represented by *Apis*, possess two pairs of finely membranous wings. The mouth parts of *Cantharis* and other beetles take the form of jaws and mandibles for chewing hard food. In *Coccus* these are replaced by a tubular suctorial arrangement containing two small piercing organs, and in *Apis* the basal segments of the second maxillæ are produced into a long ligula or tongue, by which the animal extracts nectar from flowers. Here also in Hymenoptera the prothorax is fused with the remainder, but in the other two orders represented it is free.

The detailed structure of the legs varies amongst insects, being adapted not only for walking but also in some for grasping or burrowing, and in others for swimming. The general plan of the alimentary system has been noted. In insects, besides a pair of salivary glands opening at the mouth, there are often a number of blind tubes opening into the anterior end of the stomach proper, and known as hepatic cæca. These apparently take the place of a liver. In *Apis* must be noted the large suctorial crop or stomach, which is a storehouse for the collected honey, and which the animal is capable of emptying at will.

Insects being air-breathing arthropods, respire by means of tracheæ, the external apertures being partly closed, either by a perforated membrane or bundles of hairs, in order to prevent the introduction of hurtful particles. The vascular and nervous systems are on the same general plan throughout, the heart taking a long, tubular shape. Special organs of peculiar character occur in some forms. The senses of sight, smell, taste, touch, and hearing appear to be present. The eyes are of two kinds, simple and compound, the latter being made up of a large number of separate elements. The sense of smell and touch are placed in the antennæ, whilst certain papillæ in the mouth region appear to be associated with taste.

The reproductive process is somewhat peculiar, inasmuch as the male in many cases is much smaller that the female and is often of little importance except as an agent in this matter. In some cases he dies immediately after, and in others, as the drones amongst the bees, gets killed by the imperfect working females after the swarming function has taken place. Here in the case of *Apis* the female is of supreme importance, there being only one to

perhaps several hundred males and several thousand workers. Parthenogenesis occurs in some groups. In *Cynips*, for instance, the gall-fly, no male insect is produced, and ova are developed, therefore, without fertilisation.

The female insect is, as a rule, extremely prolific, sometimes laying several thousand eggs. The egg is a more or less oval body enclosed in two coats, an outer membrane, the chorion, and an inner or vitelline membrane, the first of which frequently shows an elaborate marking. The contents of the egg consist of a protoplasmic portion surrounding a yolk. In the majority of orders, Coleoptera and Hymentera included, complete metamorphosis takes place, the egg giving rise to an animal different in general structure from the parent insect. The larva is a worm-like animal, but, with few exceptions, bears a well-marked head of the insect type, and typical segmented legs on the anterior segments. Often, as in Lepidoptera (butterflies and moths) they possess glands secreting a substance which they spin into a cocoon or protective covering, in which they pass through the second or pupa stage and gradually assume the characters of a perfect insect.

FLORAL CALENDAR FOR APRIL.

The flowers of March were very backward in appearance, owing to the cold weather, so that with the exception perhaps of *Iris persica*, *Lonicera fragrantissima*, and *Lachenalia*, all those mentioned in the March calendar may still be looked for, as well as the following :—

Amaryllidaceæ.—*Narcissus* (*P. J.* [3], **20**, 770). F. *Muscari.* F.

Apocynaceæ.—*Vinca major*, *Rhyncospermum jasminoides.* B.G.

Araceæ.—*Arum maculatum* (*P. J.* [3], **20**, p. 850), *Symplocarpus fœtidus.* B.G.

Asclepiadaceæ.—*Periploca græca.* B.G.

Berberidaceæ.—*Berberis darwinii.* F. *B. nepalensis.* F. *Jeffersonia diphylla.* B.G.

Bixaceæ.—*Azara microphylla.* B.G.

Boraginaceæ.—*Lithospermum purpuro-cœruleum.*

Caryophyllaceæ.—*Stellaria holostea* (*P.J.* [3], **19**, p. 1010).

Compositæ (Asteraceæ).—*Bellis perennis* (*P.J.* [3], **20**, p. 21). *Tussilago farfara* (*P.J.* [3], **20**, p. 770).

Coniferæ (Pinaceæ).—*Larix europœa*, *Taxus baccata.*

Cruciferæ (Brassicaceæ).—*Arabis thaliana*, *Barbarea præcox*, *Cardamine pratensis*, *Cochlearia danica*, *Alliaria officinalis*, *Lunaria biennis.* F.

Cupuliferæ.—*Quercus robur.*

Empetraceæ.—*Empetrum nigrum.*

Ericaceæ.—*Rhododendron dauricum*, *Vaccinium myrtillus* (*P.J.* [3], **20**, p. 933).

Euphorbiaceæ.—*Buxus sempervirens.* L. *Euphorbia helioscopia*, *Mercurialis perennis* (*P.J.* [3], **21**, p. 142; **19**, p. 950).

Fumariaceæ.—*Corydalis bulbosa*, *Dicentra eximia* (*P.J.* [3], **21**, p. 42).

Geraniaceæ.—*Geranium molle*, *G. robertianum*, *Erodium cicutarium*, *Oxalis acetosella* (*P.J.* [3], **21**, p. 42).

Iridaceæ.—*Iris pumila.* F.

Juncaceæ.—*Luzula sylvatica*, *L. campestris*, *L. fosteri* (*P.J.* [3], **20**, p. 849).

Labiatæ (Lamiaceæ).—*Ajuga reptans*, *Nepeta glechoma* (*P.J.* [3], **19**, p. 950), *Lamium incisum* (*P.J.* [3], **20**, p. 931).

Leguminosæ (Fabaceæ).—*Cytisus.* F. (*P.J.* [3], **20**, p. 1037). *Swainsonia.* F. *Ulex europœus*, *Cercis siliquastrum.* B.G.

Liliaceæ.—*Alce arborescens.* B.G. *A. plicatilis.* B.G. *Fritillaria imperialis.* F. *F. meleagris.* F. *Uvularia puberula.* B.G. *Gagea lutea*, *Paris quadrifolia* (*P.J.* [3], **20**, p. 934, 935). *Erythronium.* F.

Magnoliaceæ.—*Magnolia stellata.* B.G.

Oleaceæ.—*Olea fragrans.* *Fraxinus excelsior* (*P.J.* [3], **20**, p. 933).

Orchidaceæ.—*Orchis masculæ*, *Ophrys aranifera.*

Primulaceæ.—*Cyclamen.* F. *Primula elatior*, *P. veris*, *P. auricula.* F. *P. rosea.* F. *P. marginata.* F. *P. clusiana.* F. *P. obconica.* F. *P. vulgaris* (*P.J.* [3], **20**, p. 851).

Papaveraceæ.—*Sanguinaria canadensis.*

Ranunculaceæ.—*Ranunculus auricomus*, *Anemone nemorosa*, *A. pulsatilla*, *Xanthorrhiza apiifolia.* B.G. *Pæonia whitmanniana.* B.G. *Trollius europœus*, *Ranunculus ficaria* (*P.J.* [3], **19**, p. 950).

Rosaceæ.—*Prunus amygdalus*, *P. pissardi.* F. *P. spinosa* (*P.J.* [3], **19**, p. 951), *Potentilla fragrariastrum* (*P.J.* [3], **20**, p. 850). *P. verna*, *Geum pyrenaicum.* B.G. *Pyrus japonica.* F.

Rubiaceæ.—*Asperula odorata* (*P.J.* [3], **20**, p. 933), *Bouvardia.* F.

Rutaceæ.—*Citrus trifoliata.*

Salicaceæ.—*Salix triandra*, *S. pentandra*, *S. alba*, *S. nigra.* B.G. *S. caprea*, *S. purpurea* (*P.J.* [3], **20**, p. 849). *Populus canescens.*

Sapindaceæ.—*Acer pseudo-platanus* (*P.J.* [3], **20**, p. 933).

Saxifragaceæ.—*Saxifraga apiculata*, *S. oppositifolia*, *Megasea crassifolia.*

Scrophulariaceæ.—*Scrophularia vernalis*, *Veronica verna*, *V. triphyllos*, *V. hederifolia* (*P.J.* [3], **20**, p. 934).

Solanaceæ.—*Solanum jasminoides.* B.G.

Thymelæaceæ.—*Daphne mezereum* (*P.J.* [3], **20**, p. 676).

Umbelliferæ.—*Carum carui*, *Myrrhis odorata*, *Sanicula europœa*, *Smyrnium olusatrum.*

Vacciniaceæ.—*Vaccinium myrtillus.*

Valerianaceæ.—*Valeriana dioica*, *Valerianella olitoria.*

Violaceæ.—*Viola tricolor*, *V. cornuta* (*P.J.* [3], **19**, p. 1009).

EXPLANATORY NOTES ON THE B.P. 1898.

Linseed Oil.—In addition to the notes on this substance in the previous series, attention may be drawn to the high specific gravity of linseed oil, which is given by the present Pharmacopœia as varying between 0·930 and 0·940. Besides the glyceride of linoleic acid ($C_{18}H_{32}O_2$), which contains four hydrogen atoms less than stearic acid ($C_{18}H_{36}O_2$), linseed oil probably contains the glycerides of two isomeric acids still poorer in hydrogen than linoleic acid. These have the empirical formula $C_{18}H_{30}O_2$, and are called linolenic and isolinolenic acid. The presence of these three unsaturated acids accounts for the high value of the iodine-absorbtion equivalent observed for linseed oil. The solubility in 90 per cent. alcohol and the low congealing point are also very characteristic of linseed oil.

Oleum Myristicæ Expressum.—This has been omitted from the present Pharmacopœia, and is not, therefore, contained in the formulæ for emplastrum calefaciens and emplastrum picis.

Benzoated Lard.—The proportion of benzoin to lard has been raised from 2 : 100 to 3 : 100. During digestion the lard extracts the benzoic acid and other aromatic constituents from the benzoin and the presence of these antiseptic bodies inhibits the growth of those organisms to whose development the rancidity of stale lard is due.

Wool Fat.—The tests for this have been amplified by limiting the ash to 0·3 per cent. If this ash be alkaline it indicates the presence of soap in the wool fat, and this is characteristic of the cruder varieties of wool fat which have not been purified from the soap used in washing the wool. The melting point limits have also been raised from 37°·8–44°·4 C. to 40°–44°·4 C.

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THE LORD CHANCELLOR'S BILLS.

The first impression produced on reading the two Bills introduced by the Lord Chancellor in reference to companies, is that they are intended, on the one hand, to prevent companies from continuing to do what they can now do without breaking the law—on the other hand to enable companies to do, in future, what the law now prohibits. But further consideration leads to the conclusion that the matter is far from being so simple as the brevity of the Bills might seem to indicate: a host of questions present themselves in regard to which neither of the Bills affords any kind of information. In fact, the most striking feature about them is their extremely rudimentary character, in consequence of which it is almost impossible to form an opinion as to what they may be intended to cover and what they leave untouched. For the same reason it is difficult to imagine what might be the development of these Bills when subjected to the metamorphosis of Parliamentary manipulation. Taking in the first place the medical Bill, and assuming that its object is to put a stop to that irregular practice of medicine of which qualified practitioners have complained so long, it may be expected no little difficulty will be encountered in determining what is precisely the nature of "the profession or business of a physician, surgeon, dentist, or midwife" which a company is to be prohibited from carrying on, just as, in a recent notable litigation, the difficulty of deciding who is entitled to call himself a physician was so plainly demonstrated. Then there is another phase of medical action probably even more comprehensive and equally vague—the practice of an apothecary—which is not mentioned in the Bill, though the Statute by which that extensive practice is limited to the holders of a particular qualification has not hitherto proved very efficacious in preventing irregular and objectionable practices.

A further question arises as to the kind of company referred to in the medical Bill, and the effect its prohibitory provision might have in preventing qualified dentists or medical men availing themselves of the advantages of the Companies Acts for the formation of associations having a charitable or otherwise lawful object. Lastly, from the absence of any provision for the detection of improper conduct of the profession or business of a physician, surgeon, dentist, or midwife by a company, and from the absence of any specification of the authority by which supervision and prosecution are to be exercised under the proposed measure, it is evident that very much yet remains to be provided for. There is even greater deficiency in the Bill by which the Lord Chancellor proposes to amend the Pharmacy Act, 1868, and still greater uncertainty as the scope it may be intended to have in regard to the main object of that Act. The Bill does not define the kind of company, referred to in it, that is to be permitted to carry on the business of a chemist and druggist, and, in that connection, to use the title which the Act of 1868 provides shall be used only by persons holding a qualification that is impossible for any other than individual persons. In the absence of any such definition, it might be inferred that any association of unqualified persons, whether incorporated under the Companies Acts or not, would be enabled to keep open shop for the sale, dispensing, or compounding of the medicinal articles included in the schedule to the Pharmacy Act. As the dispensing and compounding of medicine are so intimately associated with the handling of those articles, it might be inferred that, while unqualified persons were to be prevented from carrying on the practice of medicine, they were to have a free hand in the equally important matter of the practice of pharmacy. But whether the intention of the Bill goes so far as that or not, it actually disregards altogether the necessity for the proprietors of a chemist and druggist's business to possess the special technical qualification which the Pharmacy Act has declared to be expedient for the safety of the public. Moreover, no provision is made by which the observance of the condition that the business of a company should be conducted by a duly qualified manager, could be tested and ascertained. In both those respects, therefore, the tendency of the Lord Chancellor's Bill is to defeat the main object of the Pharmacy Act, and it is directly opposed to such amendments of the Act as have been declared desirable by Parliament.

But over and above the objections that may be taken to the Lord Chancellor's proposed amendment of the Pharmacy Act as being calculated to lessen the protection afforded to the public by the maintenance of an individual proprietary qualification for carrying on the business of a chemist and druggist, there is another objection which chemists and druggists are entitled to urge with all the energy of which they are capable. The Act of 1868, in establishing the statutory qualification necessary for the exercise of their business, conferred no privilege on chemists. That was done solely in the interest of the public; but though a very proper step, in that sense, it was not the less an interference with the liberty of the subject, so far as the occupation of chemist and druggist was concerned. Since the passing of the Act some thousands of individuals have complied with its requirements as a measure affecting public interests, and in virtue of its qualification they have acquired the right of keeping open shop for the sale, dispensing, and compounding of the medicinal articles specified in the schedule. For practical purposes it matters little, if at all, whether the chemist's occupation be regarded as a trade or a profession—that is a side issue not worth contending about—but the important point now to be dealt with is whether the right conferred upon chemists by the Pharmacy Act, 1868 and by their acquiescence in its requirements, is to be virtually confiscated by such a measure as that introduced by the Lord Chancellor, and whether the unfair and unjustifiable invasion of chemist's business, by associations of unqualified persons—which they have so long complained of—shall be confirmed by Parliament.

ANNOTATIONS.

What is a Company? This question at once suggests itself on perusal of the Lord Chancellor's Pharmacy Bill, Clause 1 of which proposes that "A company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist." In the twin Bill which is intended to debar companies from carrying on "the profession or business of a physician, surgeon, dentist, or midwife," the word "company" is qualified by the words "under the Companies Acts." But there is no such limitation in the Pharmacy Bill, 1899, and it would hardly be assuming too much to suggest that, if this mischievous Bill became law, any association of two or more persons would be enabled to carry on the business and use the description of a pharmaceutical chemist or chemist and druggist, whether registered under the Companies Acts or not. A company is not necessarily a joint-stock or limited liability company, and a literal interpretation of Lord Halsbury's measure would appear to support the idea that it would permit any partnership to carry on the business in England as it is held can now be done in Scotland. A duly qualified and registered chemist might then have an unqualified partner, without the latter incurring the risk of any penalty so long as the registered individual acted as manager of the business. The effect of that would, to some extent, be the placing of the registered proprietor on a better footing than joint-stock companies. But the advantage would be gained in a decidedly roundabout fashion, and for the sake of the chemist's self-respect it is to be hoped that he may not have any inducement to stoop to such expedients. The practice of legitimate pharmacy in a professional manner by properly trained and educated persons is what the public needs, and no sense of gratitude to the Lord Chancellor or anyone else will be aroused by the attempt to impose spurious qualifications on the public. In pharmacy, as in all else, the best is good enough for the public, and that it may be depended upon to demand in the long run.

Education seems at a Discount in the opinion of the Lord Chancellor, and if it were not well known how weak-kneed the strongest British Government of modern times could be on occasion, it would appear almost inconceivable that a member of the Government which has displayed such almost revolutionary tendencies in the matter of reforming educational systems should have dealt such a blow at the system so carefully built up by pharmacists during the past sixty years. In whatever respect those who practise the art of pharmacy in Great Britain may have been lacking, it has not been in devotion to education, for ever since the Pharmaceutical Society was established—in 1841—the improvement of education has occupied the most prominent position in its programme. At the outset, the self-imposed tests by examination were voluntarily submitted to by the craft, but to such an extent did the new movement find favour in the ranks that, in less than a dozen years, it became possible to gain parliamentary recognition of the claims of the important body of pharmaceutical chemists that already existed. Even then, however, the test of qualification remained a purely voluntary one, and it was not until some twenty-seven years had elapsed that the State thought fit to intervene and compel the examination and registration of all persons who desired to be duly qualified to dispense and sell poisonous medicaments. Prior to 1868 it was open to anyone to practise the art of pharmacy without restriction, but since that date a definite minimum qualification has been insisted upon by the State. The way had been paved by the Pharmaceutical Society, and though the Legislature only partially took advantage of the opportunity which presented itself, the public has been benefited to no mean extent in the thirty odd years that have since elapsed.

During the Interval, however, a new principle has manifested itself in pharmacy. The suicidal policy adopted by a few registered chemists who thought to benefit themselves largely by depriving some of their fellows of the means of livelihood, led to an inordinately false conception being formed in the public mind of the extent of the chemist's profits. Internal competition was soon supplemented by the illegitimate competition of outsiders and, when a remedy was sought in the law courts, recourse was had by certain offenders to the shield offered by the Companies Acts, by means of which the law was ingeniously evaded. Subsequently, so far as companies were concerned, the Pharmaceutical Society ceased from troubling and unqualified sellers of scheduled poisons were at rest. The hope has always existed, however, that in the fulness of time someone would somehow find the means of ridding us of the unqualified company pharmacy incubus. The right person seemed to present himself last year when the Lord Chancellor referred to the desirability of remedying an obvious oversight in the Pharmacy Acts; the means appeared at hand when Lord Halsbury expressed his willingness to introduce a Pharmacy Bill into Parliament, and asked the Pharmaceutical Society for suggestions. But what was apparently so excellent an opportunity for repairing an injustice, which is one of the greatest of the century, has so far proved to be but a snare and a delusion.

For the Lord Chancellor has accepted the position as he finds it; recognising the anomalous nature of the companies' position, he yet actually proposes to legalise unqualified company pharmacy, and to deliver registered chemists—bound hard and fast—into the clutches of their worst enemies. Education training, examination and registration of the individual are to count for nothing except as qualifying that individual to act as the paid servant of a joint-stock company. To that end the founders of the Pharmaceutical Society and their successors have laboured for sixty years—educating and elevating a distinct professional class to the very great advantage of the public—with the threatened result that any uneducated and untrained person may, by combining with six others of similar incapacity, do all that the registered chemist has striven so hard to secure permission to do. This attempt to render the education of dispensers of medicine superfluous must be unreservedly opposed, as a matter of course, and it should not be too much to suppose that even a Lord Chancellor may be led to see the absurdity of substituting registration under the Companies Acts for the prolonged course of education and training, which is so essential in the public interest. Lord Halsbury would doubtless hesitate to assert that a member of a joint-stock company, who possesses no other qualification, is a fit and proper person to dispense medicine. Neither would such a person be in a position to keep an efficient check upon others—possibly duly qualified persons—who might chance to be engaged by the company to dispense medicine for hire. Legislators should attempt to clear their minds of confusion on this subject; those amongst them who happen to be pecuniarily interested in companies which carry on piratically the business of a chemist and druggist, without due qualification, should endeavour to act impartially in the interests of their constituents, even at the cost of reconciling themselves to a possible loss of a fraction of one per cent. interest on part of their invested capital.

As an Object Lesson to those chemists and druggists who are still possessed by the idea that the possible needs and future welfare of chemists' widows and families may be best and most securely provided for by the provision as to the business of a deceased chemist in the sixteenth section of the Pharmacy Act, 1868, the use made of that provision by the Lord Chancellor in the explanatory memorandum attached to his Pharmacy Act Amendment Bill may serve to disillusionise them. It will there be seen that, whatever may be thought by laymen as to the provision of the Act intended in behalf of widows, the first legal authority of the realm regards it as a reason for introducing a measure which, if passed into an Act of Parliament, would deprive chemists of the limited rights they now have under the Pharmacy Act. They would no longer have an exclusive right, as qualified individuals, to carry on their business; but would have to share that right equally with persons who do not possess the qualification and are incapable of acquiring it under any conditions. From the legal point of view, which is of more importance in this connection than that of the pharmaceutical layman, it is considered that the proposed provision of the Lord Chancellor's Bill would "place a company in the same position as the executors or trustees of a deceased chemist," and it is on the ground of the existence, in the Pharmacy Act, of the provision for allowing a chemist's business to be carried on without a qualified proprietor, that the proposal is now made to extend that exemption from the requirements of the Act, so as to include the case of companies carrying on the business of chemist and druggist, and using that title. This is the legal logic applied to the situation, and it justifies the statement so often made in reply to chemists' complaints of the injustice of "company trading," that so long as the "Widows' Clause" remains there is no chance of a remedy for the hardship of which chemists have so much reason to complain.

The Apothecaries' Assistant's Certificate is the subject of some correspondence printed at page 334. The letter referred to in Mr. Gledhill's communication was published in the *Pharmaceutical Journal* for February 11 last and, of course, dealt with the matter from the pharmaceutical standpoint. In the portion of the letter to which objection appears to have been taken by the Society of Apothecaries, the Dewsbury and District Chemists' Association urged upon the Privy Council that medical men who do not write prescriptions should be required "to personally dispense all medicines, or employ a dispenser who holds the Minor qualification of the Pharmaceutical Society, as the Association considers the assistants' certificate of the Apothecaries' Company not a sufficient legal qualification." It is in the concluding words of this quotation that misconception of the situation is evident, and in regard to this matter it is useful to refer to the Apothecaries Act of 1815. Section 17 of that Act provides that "it shall not be lawful for any person or persons . . . to act as an assistant to any apothecary, in compounding or dispensing medicines, without undergoing an examination . . . and obtaining a certificate of his or their qualification to act as such assistant." The apothecaries' assistant's certificate of fitness, therefore, is a proof that the holder possesses a sufficient legal qualification to assist an apothecary in compounding or dispensing medicines for his patients, but it vouches for nothing beyond that. Anyone can compound or dispense for a medical practitioner who is not an apothecary, no legal qualification of any kind being required for that purpose, though it is eminently desirable that only duly qualified persons should be employed for such work.

What the Dewsbury and District Chemists' Association presumably meant to convey is that the apothecaries' assistant's certificate is far from being a qualification to compound and dispense medicines for the public such as the Minor certificate of the Pharmaceutical Society is. That, of course, is quite correct, and cannot be too strongly or too frequently insisted upon by registered chemists. The Minor qualification is the only one—apart from those of medical practitioners who have passed an examination in pharmacy—that entitles its holder to dispense and sell medicines to the public without restriction of any kind. The Dewsbury and District Chemists' Association would have done well to insist upon that fact rather than weakly withdraw an expression of opinion which, though imperfectly worded and incomplete, was not altogether unjustified by the facts of the case. Presumably, however, the martyr's spirit is not strong in pharmaceutical circles in the Dewsbury district, and a threat of impossible pains and penalties has apparently proved too discomposing in its effects for a rational spirit to prevail. Nevertheless, and despite the fact that the old apothecaries so cleverly assumed to themselves the position of medical practitioners, registered chemists must continue to protest against the apothecaries' assistant's certificate being allowed to usurp the place of qualification under the Pharmacy Act, 1868. It is in no sense the equivalent of the latter, for it only entitles its holder to assist an apothecary in compounding or dispensing medicines. Let apothecaries' assistants be content to do that, and registered chemists will be quite content to leave them in peace. But their certificates must not be held out to be evidence of qualification for the public performance of the pharmacist's functions.

The Federation of Local Pharmaceutical Associations continues to show great activity, the Hon. Secretary of the Federation having addressed a communication to the various local associations throughout the country, directing attention to the Pharmacy Bill which the Lord Chancellor has brought before the House of Lords. The text of the Bill is given and it is pointed out that the measure, which has passed its first reading, is virtually a reiteration of the clause the Lord Chancellor wished to introduce at the time the Pharmacy Acts Amendment Act was before the House of Lords, the effect of which would have been to legalise the present status of company pharmacy. At the same time, it is explained, the Lord Chancellor has introduced a Bill making it penal for companies to carry on business as physicians, surgeons, dentists, or midwives (*sic*), and Mr. Cowley concludes by stating that it is unnecessary for him to make any further remarks, except that the most strenuous efforts should be made to defeat the Pharmacy Bill, 1899, and at least to place pharmacists on the same footing as qualified persons carrying on the above-named professions.

The Kinninmont Prize, which takes the form of a gold medal and books, may be competed for by chemists' assistants in Glasgow, and the counties of Argyle, Ayr, Bute, Dumbarton, Dumfries, Kirkcudbright, Lanark, Renfrew, and Wigtown, who have qualified during the two years previous to the examination, which is held in Glasgow, in May or June of each year. The examination is a written one, and the subjects of examination are botany, magnetism and electricity. Intending competitors must send in their names before the end of April to the Secretary, Mr. William L. Currie, 223, Byres Road, Dowanhill, Glasgow, who will also send full particulars of the competition on application.

Glycerinated Calf Lymph has, according to the *British Medical Journal*, been the subject of communications between Sir William Priestley, M.P., and Mr. Chaplin, the question considered being the desirability of the Local Government Board supplying glycerinated calf lymph from the Government establishments to

private practitioners, as well as to public vaccinators. Mr. Chaplin has had the suggestion under his consideration both before the passing of the recent Vaccination Act and since, and there is a desire on his part to carry the suggestion into effect so soon as it can be done without risk of failure. The Board received a grant from the Treasury which enabled it to commence in February last to issue capillary tubes of lymph at the rate of one thousand a day, which it was anticipated would, in the absence of any epidemic of small-pox, be all that would be required. The demand, however, has exceeded expectations, and at times between two and three thousand tubes a day have been issued. This has rendered it necessary to increase the staff at the laboratories, at the calf station, and in the offices distributing the lymph. Arrangements have also had to be made for the additional supply of calves, and a further grant has been obtained from the Treasury for this purpose. There is reason to believe that the demand from public vaccinators will grow still further, and it is therefore felt that the Board is not at present in a position to undertake at once to supply the 20,000 private practitioners in England and Wales. The existing establishments of the Board do not enable it to do more than is now being done, but Mr. Chaplin has under consideration the question whether it will not be necessary very shortly to give up the present establishments, and to obtain premises including laboratories, calf stables, quarantine stations for calves, and residences for staff.

Arthur Stephen Hill.—By the death last week of Mr. Hill, at the advanced age of ninety-seven, the Pharmaceutical Society has lost a member who was among the number of its earliest supporters when a member of the old firm of Arthur Hill and Son. Mr. Hill occupied a prominent position in the wholesale drug trade, and was a member of the original Drug Club sixty years ago. It will be remembered that very largely through the influence of Mr. Hill and his son, Mr. Arthur Bowdler Hill, of the firm of Davy, Hill and Son, Yates and Hicks, the Salters' Company founded a number of scholarships in connection with medical science and pharmacy. One of these was attached to the School of the Pharmaceutical Society, and is a permanent illustration of the interest taken by the late Mr. Hill in the promotion of the Society's objects. The funeral took place on Tuesday last at Norwood Cemetery, and was attended by several of Mr. Hill's old associates in the wholesale drug trade and by members of the Salters' Company. The Pharmaceutical Society was represented by the past-President, Mr. Michael Carteighe.

Arsenic in Pepper.—At the Norfolk Quarter Sessions, on Wednesday, Sarah Vyse, formerly cook at West Raynham Rectory, Norfolk, was charged with causing arsenic to be taken by the Rev. Samuel Francis Barber, Mrs. Barber, and other persons at the Rectory. Mr. Wild, in stating the case for the prosecution, contended that the prisoner had abused her position as cook by putting arsenic in pepper and food, and thereby causing it to be taken by the members of the West Raynham household. The prisoner's father was a rat-catcher, and she had accordingly ready access to arsenic and other poisons. On January 19, Mrs. Barber gave the prisoner a month's notice to leave, and a week afterwards the prisoner asked for some white pepper. Early in February the family began to be affected by burning sensations at the back of their throats, vomiting, purging, and cramp. Mr. Sutton, an analytical chemist, found traces of arsenic in the pepper in use in the house.—The jury found the prisoner guilty of adding arsenic to food, with intent to grieve and annoy, and the Chairman sentenced her to nine months' imprisonment.

FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of this Association was held in Lamb's Hotel, Dundee, on Wednesday, March 29. Mr. Charles Kerr, President, in the chair. There was a large attendance, including pharmacists from Brechin, Montrose, Blairgowrie, Broughtyferry, Carnoustie, Kirriemuir, Lochee, Perth, and Kirkcaldy. Apologies were intimated from Messrs. Ewing (Edinburgh), Currie (Glasgow), Kermath (St. Andrews), Davidson (Montrose), and Jack (Arbroath).

Objectionable Literature.

The Chairman said Mr. Beecham had not even acknowledged the letter sent by the Association, drawing attention to certain printed matter circulated with boxes of his pills, and which they regarded as very objectionable. Such matter had been objected to in Australia, and he thought they should insist on having their objections attended to.

On the motion of Bailie Doig, seconded by Mr. Park, it was agreed to express regret that Mr. Beecham had treated the Association with such discourtesy, and that they draw public attention to the matter, and express the hope that other trade associations would support them in insisting that the kind of literature they so strongly objected to should be stopped.

Mr. Naysmith said he thought they should also endeavour to stop the practice of exhibiting certain articles in shop windows. He knew of a flagrant case, and the police were powerless to interfere.

Bailie Doig said he thought the Dundee police would interfere in such cases.

Sale of Poisons by Auctioneers.

The Chairman said he had communicated with Mr. Bremridge as to auctioneers selling poisons in the public disposal of a chemist's stock, and had got a reply to the effect that any person unqualified acting in that way would be liable to a penalty.

Mr. J. Rutherford Hill said they always interfered in such cases, and on more than one occasion auctioneers had been obliged to remove all scheduled poisons from the sale.

Carbolic Acid.

The Association then discussed the question of adding carbolic acid to the Poison Schedule, and a strong opinion was unanimously expressed that a decided effort should be made to secure this object in the interests of public safety. The suggestion of Mr. Proctor as to allowing the sale of carbolic powder was regarded favourably. It was agreed to send a resolution to the Pharmaceutical Society, urging them to again approach the Privy Council, and also that the Parliamentary representatives for Dundee and Forfarshire should be asked to press the matter in the House of Commons.

Poison Regulations.

Mr. J. Rutherfield Hill then explained the new poison regulations, and described a series of bottles and other appliances similar to those exhibited at the trade association meeting in Edinburgh. He also showed an adaptation of Macpherson's poison shield prepared by Mr. Kinross, of Kinross and Black, printers, Edinburgh, in which the shield with the device "S. P." crossed, is printed on varnished labels on a perforated sheet, so that they can be readily affixed to ordinary shop rounds.

Mr. Storrar, in moving a vote of thanks to Mr. Hill, said he thought there would not be so much difficulty in the future as in the past in getting carbolic acid scheduled. Hitherto the non-adoption of regulations by chemists had been a barrier, and the best way to get what they desired was to loyally carry out all the details of the regulations. He confessed he did not like these regulations at all, and thought it was quite illogical to train and educate a special class of men and then proceed to tie their hands in this way. All the same he said they would best secure themselves by accepting them as they were.

The vote of thanks was cordially awarded.

Draft Pharmacy Bill.

The Association then proceeded to consider the Council's suggestions for a draft Pharmacy Bill.

Mr. Storrar said he preferred to reserve any criticism of these proposals for discussion in his place on the Council; but he would point out that medicines really meant compounded medicines dispensed and sold as pharmaceutical preparations. It did not mean articles

generally sold by grocers. The utmost they could hope to do was to limit the formation of companies for the future. It was needless to expect Parliament to put a stop to existing companies, the two main points to consider were the control and curtailment of company pharmacy and the restriction of the sale of compounded medicines to registered chemists.

Bailie Doig said he agreed with Mr. Storrar that Parliament would never go back and interfere with the vested interests of existing companies. He also thought a crucial point was the definition of the word medicines. That would be an exceedingly difficult matter. After discussion, evidencing general agreement with the policy of the Council, Baille Doig moved—

> That this meeting, having considered the Council's suggestion for a draft Pharmacy Bill, is of opinion that the Pharmaceutical Council should devote its efforts to such an amendment of the Pharmacy Acts as would, first, curtail and control the dispensing and sale of drugs by companies of unregistered persons and, secondly, secure the sale and dispensing of all medicines and compounded drugs by registered men.

Mr. Russell seconded, and the motion was unanimously adopted.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.

A well-attended meeting of the junior section of the above Association was held on Wednesday, March 29, Mr. O. A. Reade presided, and Mr. J. Davy Turney delivered a most interesting and instructive lecture, on

The Life History and Structure of a Typical Plant.

Mr. Turney introduced his subject by a brief sketch of a typical plant, and gave a general description of the meadow crowfoot, dealing with the structure and germination of the seed; the root, its structure and function; the stem and its structure; the foliage leaves, their various shapes; the epidermis of the leaf, hairs on the surface; the organ of respiration (stomata); chlorophyll granules; young cells, their contents; protoplasm, the general functions of the leaf. The bud and its structure were next examined, and a general plan of the flower given. The calyx-sepals and the corolla-petals were described, and the stamens and their anthers fully examined. A consideration of pollen and its structure, carpels and the fruit, concluded the lecture, which was illustrated by fifty lantern slides of photographs and photo-micrographs from nature, showing the structure of the various parts of the meadow crowfoot.

An interesting discussion then took place, in which Messrs. Reade, Hooper, Reynolds, and Park took part.

On the motion of Mr. Reade, seconded by Mr. Reynolds, a hearty vote of thanks was passed to the lecturer.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

At a meeting of the executive of this Association held at Blackburn on Monday, which was attended by Councillor Critchley (in the chair), Councillor Shorrock, and Mr. Lomax (Darwen), Mr. Holt, Mr. Haworth, Mr. Pickup, Mr. Grimshaw, Mr. Hoghton, Mr. Pickworth, and Mr. R. Lord Gifford, the Hon. Secretary, the following resolutions were unanimously adopted :—

(1) That we demand the withdrawal of the Lord Chancellor's Pharmacy Bill, 1899, absolutely.

(2) That in view of the fact that for thirty-one years Pharmaceutical Chemists and Chemists and Druggists have been subject to compulsory examination for qualification, and that the consistent policy of the Pharmaceutical Council has been to increase the rigour of the examinations, we maintain that the use of titles and qualifications by unqualified persons is unjust, and we therefore demand that Pharmaceutical Chemists and Chemists and Druggists be included in the Companies (Medical Profession) Bill.

(3) That this Association declares that the time has arrived for the Pharmaceutical Council to initiate and press forward a national agitation on the part of registered chemists with the object of placing the practice of pharmacy in this country on a just basis.

(4) That the aid of the medical profession be sought in obtaining the inclusion of registered chemists in the Lord Chancellor's Companies (Medical Profession) Bill, 1899, and the withdrawal of his Pharmacy Bill, 1899, the effect of which would be to stamp pharmacy as a trade pure and simple.

(5) That we urge upon the Federation of Local Associations, all unfederated associations, and every chemist throughout the country, the immediate necessity of joining forces in strenuous opposition to the iniquitous and retrograde measure relating to pharmacy which has now passed its first reading in the House of Lords; and we suggest (*a*) That signed memorials be sent to the Lord Chancellor pointing out our objection to the Bill and praying for its withdrawal. (*b*) That interviews be sought with every local member of Parliament in order to explain the injustice of our present position.

The first three resolutions were ordered to be sent to the Pharmaceutical Council, the fourth to the Medical Council, and the fifth to the Federation of Local Pharmaceutical Associations.

EXETER ASSOCIATION OF CHEMISTS AND DRUGGISTS.

A special meeting of the members of the Exeter Association of Chemists and Druggists was held at the Albert Memorial Museum on Tuesday last to consider the Bills now before the House of Lords relating to company trading and pharmacy. The President (Mr. P. F. Rowsell) occupied the chair.

The minutes of the previous meeting having been read and confirmed, Alderman H. Gadd, J.P., in the unavoidable absence of the Hon. Secretary (Mr. H. Wippell Gadd), reported that a letter had been received from Mrs. North acknowledging the vote of condolence passed by the members of the Association at the last meeting with her and her family on the death of her husband. A letter had also been received from the Federation of Local Pharmaceutical Associations, calling attention to the Company Trading Bills.

The President, in opening the meeting, said that, as the members were aware, it was convened for the purpose of considering the Bills now before the House of Lords relating to company trading as it affected pharmacy. A Bill had been introduced by the Lord Chancellor making company trading, so far as pharmacy was concerned, perfectly legal; *i.e.*, in the words of the clause in the Bill—

> A company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist, if and so long only as the business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, as the case may require, but, subject to this provision, anything which would be an offence under Section 15 of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

He had not the least doubt that all the members would be of the same mind with regard to this matter—that it was their duty to oppose such a Bill. Another Bill had been introduced into the House of Lords, making it unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife. He therefore thought they should do their utmost to get pharmacists included in that Bill by making the clause read—

> It shall be unlawful for a company, under the Companies Acts, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist, chemist, or midwife.

Mr. E. Lemmon agreed with the President. The Pharmaceutical Society should oppose the first-mentioned Bill, but he questioned whether the House of Lords had not already decided that it was legal for a company to do what the clause in the new Bill specially protected them in doing. In other words, they were recognising in a statutory form the decision of the House of Lords.

Mr. J. Hinton Lake said the Bill really proposed to empower a company of unqualified men, by simply acquiring the services of a qualified man, to call themselves chemists and druggists

An interesting and instructive discussion then ensued on the position of pharmacists as compared with company traders, in the course of which Mr. Lemmon emphasised his belief that the Bill was recognising in a statutory form what had already been brought about by a decision of the House of Lords as a legal tribunal.

Alderman Gadd eventually moved a resolution to the effect that the Council of the Pharmaceutical Society be asked to oppose the Lord Chancellor's Bill dealing with pharmacists in every possible way, and to endeavour to get the words "pharmacists or chemists and druggists" inserted in the Companies (Medical Profession) Bill.

Mr. Lemmon seconded the resolution, which was supported by Mr. T. C. Milton, who said chemists ought to speak on this matter with a stern voice. There was no question but that the proposal respecting company trading, so far as pharmacy was concerned, should be opposed, because it was really making their position worse, as anybody would be able to form a company and trade as pharmacists.

The resolution was carried unanimously, and it was also decided to send copies of it to the Pharmaceutical Society and to the representative of the city in Parliament—Sir Stafford Northcote, Bt., C.B., M.P.

ROYAL INSTITUTION.

The following is a report of the fourth and last of a series of lectures given by ALLAN MACFADYEN, M.D., B.Sc., on

Toxins and Antitoxins.

The most recent developments in serum therapeutics received the largest share of attention, especially in so far as they relate to certain virulent affections, *e.g.*, diphtheria, tetanus, snake-bite and plague. The observation that a small quantity of the blood of an immunised animal when transferred to the blood of another animal confers immunity to certain specific diseases has opened up a wide field of investigation. It was soon found that the clear serum of the blood contains most of the antitoxic substances, and on this account it is used. Diphtheria is due to a rod-shaped bacillus that is localised and multiplies in the throat. It is parasitic, and may be conveyed by means of clothing, utensils, or personal contact with an infected patient. Isolation and disinfection are, therefore, of paramount importance in the treatment of this disease. Sunlight also is necessary, acting as it does as a destructive agent on all harmful organisms; the drying action of air and winds has a similar effect, while dampness and the absence of light favour the growth of the organism. The disease chiefly attacks children between the ages of two and three; liability to attack decreases from the age of six, is little likely to happen at eleven, and less so at the age of fifteen. Antiseptic throat applications are valuable, while in serious cases tracheotomy may have to be performed.

The serum of the blood of a diphtheritic patient has a specific immunising action on the diphtheria toxin. Antitoxins are found not only in the blood but in the milk and other secretions of immunised patients. Immunity may be active or passive; the former is due to an increased output of antitoxins from the tissue cells, the latter to the introduction of the serum from a poison-proof animal into the blood of another animal, the antitoxic bodies being as it were imported and not home-made. Active immunity lasts a long while, but passive immunity is transitory. To immunise an animal a potent toxin is required, and that is best obtained from a good toxin-producing strain. An American strain of the diphtheria toxin has been found in practice to surpass all others in strength. The immunity of the horse, which is the animal chosen for the purpose, must be pushed to as high a degree as possible; if pushed too far the reaction whereby antitoxins are produced will not take place. If one cubic centimetre of the pure toxin is first administered the animal will in time tolerate from sixty to seventy cubic centimetres and will then be poison proof. Larger doses may then be given without producing ill effects. It is found that the higher the immunity of the animal the more potent is the serum.

Many pints of blood may be taken from the neck of a horse, and are placed at once in an ice safe, to allow the clear serum to separate and rise to the surface. It is removed from the lower layer, and after the addition of carbolic acid, or some other antiseptic, it is sealed up in bottles ready for use. It should be preserved in a cool dark place to avoid diminution of potency. The horse, before it is immunised, must be certified as healthy by a veterinary surgeon, who tries upon it the effect of tuberculin and mallein, in order to prove the absence respectively of tuberculosis and glanders. The animals so treated do not suffer; indeed, those at the Jenner Institute, on the contrary, improve, and if parted with invariably are sold at a profit. It is found that the antitoxin will neutralise the corresponding toxin in a test tube. The interaction is mutual and proportional. The amount of serum is no criterion of strength; this can only be gauged by the amount of antitoxins present. One volume of a normal serum is so adjusted that it will neutralise 100 volumes of the toxin. In Germany the preparation of serums is controlled by Government, so that sterilisation, the presence of an antiseptic agent, and the standardisation are officially determined. The diphtheritic serum may contain 100 or even 600 immunising units per cubic centimetre; the latter quantity is generally administered to a patient during the first day of treatment, and altogether about fifteen hundred units are required. About 4000 units are required to produce in a horse immunity to diphtheria. The introduction of this method of treatment has reduced the mortality in this disease by 50 per cent. The chances of a cure depend on the promptness with which the treatment is begun, because it is found that the period between intoxication and injection should be reduced to a minimum.

Another point in the treatment is well brought out in the case of tetanus, the next disease considered by the lecturer. The quantity of serum (reckoned in immunising units) required eight minutes after intoxication is six times that necessary at the moment of intoxication, twenty-four times as much is wanted after the lapse of an hour, while longer intervals of time render the chance of recovery well-nigh hopeless. In all cases extreme care must be taken in rendering the instruments antiseptic; they must be immersed in 1 per cent. sodium hydroxide solution, or 5 per cent. carbolic acid, and finally rinsed in a ½ per cent. carbolic acid solution. Various theories have been propounded to account for the action of antitoxins on toxins; it was thought by Erlich to be a chemical one, but all investigators are not agreed on this point. In administering tetano-toxin to a horse for immunisation purposes, it is necessary to commence with the attentuated toxin before proceeding to the pure toxin; the intervals between the injections may be days or weeks. The antitoxic substances accumulate in the blood. With this antitoxin the chances of success are less than with that of diphtheria, especially if it be administered to a patient whose nervous system has become seriously attacked. The dried serum is put up in bottle holding 500 units; it retains its potency for a longer time than the liquid, is better adapted for tropical climates and for transmission abroad. A serum acts more quickly when injected into a vein than under the skin.

The lecturer next spoke of the various food poisons, *e.g.*, the *Bacillus botulinus*, and then passed on to the question of immunisation to snake-venom, vegetable poisons, typhoid, plague, and pneumonia. The snake-venom of the cobra is so potent that 1/1000th part of a gramme will kill four guinea-pigs. Rabbits have been rendered immune to this poison, and yield an antitoxic serum, called anti-venin, that, on injection, enables a person to stand fifty times a lethal dose of the poison. The action of the poison is extremely rapid; it attacks the nervous system, and is more deadly according to the length of time the snake has been without food; calcium hypochlorite has the power of neutralising it in a test-tube. The vegetable alkaloids, *e.g.*, ricine and abrine, develop antitoxins. Attempts have been made to protect the human subject against attacks of cholera by first injecting under the skin an attenuated culture of the bacillus, and, five days after, administering a strong and virulent culture. The anti-typhoid vaccine, when administered hypodermically, immunises for a long time, and so acts as a prophylactic. The anti-plague vaccine has been prepared by growing the organism in broth for a month, heating to destroy them, and filtering. The many streptococci which produce erysipelas, etc, have been investigated in the hope of obtaining from them an antitoxin, but so far their use is doubtful. Experiments are being made on the preparation of the antitoxins of pneumonia, tuberculosis, and yellow fever. This ended a course of lectures so brimful of interest to those who follow the latest developments in the application of bacteriology to the cure and prevention of disease.

INJECTION OF KERATIN SOLUTION IN SYPHILIS.—A new method for the treatment of syphilis by the hypodermic injection of a solution of keratin has been successfully employed by Lalande for over a year. The source of the keratin material is the rudimentary horns of calves, where the keratinous elements are in an active state; from these the solution is thus prepared. Sixty grammes of the powdered horn is macerated with 10 grammes of salt and 1000 grammes of water, at 25° to 30° C. for a month, with agitation twice or thrice per diem. The mixture is then left for another four months undisturbed in the dark at the same temperature. The fluid is then siphoned off, and heated in a closed vessel for thirty minutes at a temperature of 90° C. After cooling, the liquid is ready for use. It is a clear solution having an odour of burnt horn, and a saline taste; it is perfectly stable if kept away from the light. The dose employed is 1 to 3 cubic centimetres repeated at intervals of eight to two days, or even daily, according to the severity of the case. Amelioration of the condition of the patient is generally observed after the third injection. A slight rise of temperature, drowsinesss, and increased diaphoresis are sometimes observed after the first injections.—*Nouv. Rem.*, 14, 160, after *Presse Med.*

ANALYTICAL NOTES.

Calorimetric Tests for Essential Oils.—By adapting a modification of Mauméné's well-known method to the treatment of essential oils, Duŷk obtains data which he considers of value in their critical examination: 4 C.c. of liquid paraffin and 1 C.c. of ethereal oil are put into a test tube of 30 grammes weight and 15 C.c. capacity and shaken until well mixed; 2 C.c. of concentrated sulphuric acid are now run in with a pipette down the edge of the tube, and a thermometer is introduced fixed in a perforated cork. The temperature having been noted, the mixture is shaken and the increase of temperature ascertained. With a number of ethereal oils of undoubted purity the author found the following increase of temperature:—East Indian sandalwood oil, 22·5° to 31°; West Indian sandal oil 12° to 18°; cedar oil, 16° to 18°; copaiva oil, 24°; gurjun oil, 21°; Mitcham peppermint oil, 16°; Saxon peppermint oil, 13°; spearmint oil, 26°; Japanese peppermint oil, 20°; French lavender oil, 34° to 37°; English lavender oil, 33°; spike oil, 29·5° to 30°; rose oil, 34·5°; Turkish geranium oil, 24°; geranium oil, 25°; lemon oil, 25° to 26·5°; orange oil (Portugal), 37°; neroli oil, 36·5°; petit-grain oil, 33·5°; thyme oil, red, 23·5°; thyme oil (rectified), 22·5°; eucalyptus oil, 24°; clove oil, 28°; bitter almond oil, 9·5°; Ceylon cinnamon oil, 20°; cassia, 14°; French cummin oil, 28°; German cummin oil, 30°; Roumanian cummin oil, 17°; anise oil, pimpinella, 17°; star anise oil, 21°.—*Pharm. Centr.*, **39**, 59, after *Repertoire*.

Extraction of Alkaloids.—H. M. Gordin and A. B. Prescott recommend a novel general method for the extraction of alkaloids which can be used with any one of the assay methods as desired. One to four grammes of the finely powdered drug are placed in a low wide-mouth vessel with a round bottom. By means of a pestle the powder is rubbed to a paste with an ammoniated ether-chloroform mixture composed of stronger ammonia water and alcohol, of each 5 volumes; chloroform, 10 volumes; and ether, 20 volumes. On just covering the magma with this mixture (about four or five times the quantity of drug taken is usually sufficient) the vessel is well corked, with the pestle inside, and set aside for about four or five hours, with frequent agitation by circular motion. The whole is then exposed to a current of air to drive off moisture and get rid of all smell of ammonia gas; this is hastened by constant stirring. The operation takes about two hours, and is completed by placing the vessel for about four or five hours in a vacuum desiccator over sulphuric acid. The drug is then mixed with five or six times its weight of sodium chloride, and placed in a small percolator furnished with a stopcock. The pestle and mortar are cleaned with more sodium chloride, which is transferred to the percolator. A suitable menstruum, generally chloroform, is passed through the percolator until it reaches the stopcock, which is then closed. After four or five hours have elapsed, the menstruum is passed through until a few drops of the percolate transferred to an aqueous solution no longer produce a turbidity with Wagner's reagent. The percolate is evaporated at 30° C. to a small bulk, and 10 C.c. of acidulated water are added with a few C.c. of ether or petroleum ether to cover the aqueous solution. The whole is stirred until the ethereal layer is driven off; the remaining liquid is filtered, and the dish and filter washed with acidulated water. The filtrate is a colourless solution of the alkaloid, and can be taken for any method of assay. A suitable percolator is easily made out of a piece of glass tubing, fitted with a perforated cork, through which passes a tube having a glass stopcock.—*Amer. Journ. Pharm*, 71, 15.

Determination of the Total Sulphur and of Alkali in Sulphurated Potash.—*Determination of Sulphur.*—The usual methods for the determination of sulphur by oxidation into sulphuric acid, and subsequent precipitation as barium sulphate do not give satisfactory results with the alkaline polysulphides, as represented by the officinal "liver of sulphur," so L. Barthe suggests the following method. After insuring the absence of earthy metals, from 1 to 2 C.c. of a pure concentrated solution of the compound are mixed with 25 C.c. of water, 10 C.c. of strong solution of caustic potash or soda, and 30 C.c. of solution of sodium hypobromite. The mixture is heated to boiling, and dilute hydrochloric acid is added until vapours of bromine appear. Boiling is continued, and more acid gradually added until a perfectly clear solution is obtained. The fumes of bromine are then driven off by further heating, and the sulphate precipitated from the acid solution by means of barium chloride. *Determination of Alkali.*—Two C.c. of the concentrated solution of the salt are treated with 20 C.c. of water, 5 C.c. of pure sulphuric acid, and heated to boiling. The precipitated sulphur is removed by filtration, the filtrate evaporated to a low bulk, and transferred to a tared porcelain crucible, then dried, incinerated, and weighed as sulphate of the alkali. If both potassium and sodium sulphates are present the dry mass is redissolved, the amount of sulphuric acid determined by precipitation as barium sulphate, when the proportion of potassium and sodium sulphate present may be determined by the usual equations from the weight of that acid and of the mixed sulphates found.—*Journ. de Pharm.* [6], **8**, 533.

NEW REMEDIES.

Paraform as a Caustic for Warts, Etc.—Unna finds that paraform, applied in a 5 per cent. solution to benign cutaneous growths, papillomatous nævi, etc., causes a progressive desiccation of the periphery of the neoplasm. Since it is quite innocuous, it may be applied by the patient.—*Les Nouv. Rem.*, **14**, 416, after *Monats. für Prakt. Derm.*

Salicylic Liniment in Rheumatism.—Husson employs the following embrocation in cases of rheumatism:—Salicylic acid, 1; oil of turpentine, 1; lanoline, 8. The skin of the affected part is first washed with warm water and soap, and then well rubbed for five minutes with a little of the above mixture. After the inunction, the part is covered with a layer of cotton wool. The treatment is repeated daily. Some inconvenience may be occasioned by the desquamation caused by this means of administering the acid, but this will not generally take place until the fifth or sixth day, and as it is painless, the treatment need not be discontinued on that account; moreover, the therapeutic effect will usually be obtained before this occurs. Administered in this way salicylic gives rise to no gastric disturbances.—*Inter. Med. Mag.*, 7, 698, after *Rev. de Therap.*

Hydrogen Peroxide to Remove Wax from the Ear.—According to Ricci, hydrogen peroxide has the peculiar property of causing the disintegration of obstructive masses of cerumen in the ear. A few drops of the solution are introduced into the external auditory passage, and left for a few minutes in contact with the ceruminous plug; the latter is then easily and safely removed by syringing with warm water.—*Inter. Med. Mag.*, 7, 717, after *Union Med. de Canada.*

Meta-Cresol Cinnamic Ester.—This body, which is used as a remedy for tuberculosis, may be prepared as follows: Meta-cresol, 25, and cinnamic acid, 35, are dissolved in from three to five times their volume of toluol; phosphorus oxychloride, 20 to 25, is then added, and the mixture heated under a reflux condenser to 100° or 120° C., until no more hydrochloric acid is evolved. When cold, a resinoid red body separates out, from which the liquid is decanted. The solvent is driven off, leaving a slightly coloured oil, which solidifies to crystals. These are purified by re-crystallisation from alcohol, when they melt at about 65° C. They are insoluble in water, but dissolve in most organic solvents.—*Zeit. d. allg. oest. Apoth. Ver.*, 52, 846.

Protalbin Silver.—This is a new combination of silver with albumin introduced by Merck. It is a greyish-white powder, soluble in warm water, in glycerin, blood serum and peptone solutions. It is used in 0·25 to 1·5 per cent. solution, and is stated to be free from irritant effects.—*Zeits. des Allg. Osterr. Apoth. Verein*, 52, 560.

Sodium Chlorate in Acid Dyspepsia.—In doses of two to four grammes, taken twice daily in tepid water, as long as possible after a meal, M. Soupault finds that sodium chlorate is of great value in the treatment of various gastric complaints, and in particular in dyspepsia with hyperacidity. Brissaud has already shown that the salt exercises a good effect in gastric cancer, which the author confirms; it is also beneficial in an ulcerated condition of the stomach. It is, however, in dyspepsia that the most markedly good effects are obtained. So long as the dose does not exceed 8 grammes in 24 hours, no ill effects need be feared from prolonged treatment with the drug. By its aid the author claims to have effected cures which were not amenable to treatment with alkalies nor even with washing out the stomach.—*Les Nouv. Rem.*, 14, 409.

NOTICES TO CORRESPONDENTS.

All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and not in any case to individuals supposed to be connected with the Editorial Staff; no responsibility can be accepted unless this rule be observed. Communications for the Current Week's Journal should reach the Office not later than Wednesday, but news can be Received by Telegraph until 4 p.m. on Thursday.

Advertisements and Orders for copies of the 'Pharmaceutical Journal' must be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C. Cheques and money orders should be made payable to "Street Brothers.

Articles and Reports sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

Drawings for Illustrations should be executed twice the desired size; clean sharp lines being drawn with a pen and liquid Chinese ink. Shading by washes is inadmissible. Photographs can be utilised in certain cases.

Names and Formulæ should be written with extra care, all systematic names of plants and animals being underlined, and capital letters used to commence generic but not specific names.

Queries addressed to the Editor will be replied to in the Journal as early as possible after receipt, though not necessarily in the next issue. Replies cannot be sent by post, even though stamped envelopes accompany the queries.

LETTERS TO THE EDITOR.

The Lord Chancellor's Bills.

Sir,—Chemists are face to face with a crisis in the history of pharmacy. We can thank the Lord Chancellor for focussing the problem, which briefly is this—he regards chemists as traders whom it is desirable to regulate. We, on the other hand, think the requirements of the State involve the acknowledgment of a professional status. These views are incompatible, and the question is before us, Which is to prevail? Chemists therefore will emerge from this contest with the seal of the law upon them, either as traders simply or members of a profession. Whatever the cost we need to get on right lines, for the foundation is everything. We must have the natural and proper consequence of the qualification if pharmacy is to be made capable of natural evolution, *i.e.*, they who cannot qualify shall not legally practise. What would just pharmacy laws bring about? The first tendency would inevitably be for the chemist to become *de facto* the pharmacist with a large and legitimate field, touching on the one hand the medical profession, to which he would render help impossible under present circumstances; on the other hand, the public, who would get intelligent and responsible advice in the use of scores of powerful medicines, and protection against their own ignorance. Further, the exploiting of the ailing by syndicates, capitalists, and sundry, which at present is a disgrace to the country and the profession charged with the public health, would become impossible. It should not be difficult to show members of Parliament that the unjustness of the laws touching chemists is merely an incident of a grave national evil. Our immediate concern is (1) The Pharmacy Bill, 1899, must at all hazards be withdrawn. (2) "Chemists" must be added to the Companies (Medical Profession) Bill, now before the House of Lords, and described thus:—"An Act to prohibit the profession or business of physician, surgeon, dentist, or midwife being carried on by a company." After dentist should be inserted "chemist." We insist that the time has arrived for pharmacy to be put on a sound foundation. If it is to become an honourable calling, as distinguished from a trade, we shall have to demand with united voice, from the people and from the Legislature, the settlement of the principle undoubtedly intended to be developed by the Act of 1868. The adoption of this active policy will command the unanimous support of the medical profession and the approval of the public.

Blackburn, April 3, 1899. R. L. Gifford.

Sir,—The action of the Lord Chancellor in bringing in his Bill to legalise limited company drug-trading may be described in vulgar parlance as "a smack in the eye with a dirty stick." We asked for bread and, literally, the bread of our existence, and in reply he has offered us a stone. This action on the part of our noble Lord Chancellor ought to rouse the trade at large, and should unite us in one solid body to go to the House of Commons for redress at once. It is almost impossible to realise that we should be left out of the Bill introduced for the benefit of the several professions, still less that a Bill of such a retrograde character, legalising as it will unqualified limited company trading, should have been introduced in the year of grace 1899. It is enough to make one's blood boil and one's hair stand on end, as Hamlet said, "like the quills of the "fretful porcupine." Verily, wonders will never cease; the unexpected generally happens. Be good enough, sir, to inaugurate a powerful opposition to the one measure, and we must try and get ourselves included amongst the favoured professions in the other one.

Liverpool, April 4, 1899. Walter A. Grace.

Sir,—With reference to the article "Chemists and the Legislature," in your issue of April 1, which I have read with interest, I wish to call attention to the fact that at the special meeting of the Pharmaceutical Society, held in January last "for the purpose of considering and adopting regulations for keeping, selling, and dispensing of poisons," the most potent factor in the arguments of the proposer and supporters of those recommendations—which secured the large majority in favour—was that if the requirements of the Privy Council were complied with, the much needed and long asked for amending legislation in the interests of qualified chemists as against unqualified companies should follow, and the President concluded by stating "that they had done a good day's work, which he hoped would bear fruit ere long." In view of the provisions of the Lord Chancellor's Bill now before the House of Lords, it is very difficult to reconcile that promise with the performance. The bud hath the fruit, which is as that of the Dead Sea, the ideal hath the reality. As to the unfair use made of the Companies Act, it is notorious, and the injustice under which qualified chemists labour from the competition of unqualified companies needs no further comment; but the passing of the Lord Chancellor's Bill would be a further injustice Every effort should be made by chemists individually, as well as collectively, to oppose it and to promote legislation in the next session to secure for the qualified and registered chemist that protection and recognition to which he is entitled by the qualification which the State has enacted he shall obtain.

Cambridge, March 4, 1899. A. Sidney Campkin.

Sir,—The new Pharmacy Bill introduced by the Lord Chancellor is one that Mr. Jesse Boot or some kindred spirit might have framed. It lacks but one clause to turn it into a Gilbertian travesty. May I suggest the omission? "A pharmaceutical chemist or chemist and druggist may carry on the business, etc., etc., so long as he be one of a company, etc., etc." Our Council has been crying to the Lord Chancellor for the moon in its proposed new Bill, and has been granted an eclipse by that august personage.

No chemist, tho' cock o' the walk he be,
Or humble druggist of the pharmacie,
May carry on the trade of a C. and D.
Unless he be one of a companie.

Harlesden, April 3, 1899. J. W. Taplin.

Sir,—Last week's Journal contains information not calculated to meet with much approval from the registered chemists of Great Britain. It is to the Pharmacy Bill that I refer. In looking over it carefully and making a short analysis, one wonders whether an average grammar school boy would be able to understand the syntax of this Bill. One moment's reflection will be sufficient to satisfy an educated individual that even acute lawyers should have spent an extra term at school to master English before framing Bills that will not bear criticism. "As the case may be" is probably one of those law intricacies only logical minds can sift. Apart from the grammatical construction of the Bill in question, it is my intention to draw comparisons between that woman called midwife and the legally qualified chemist. The former has protection from the Lord Chancellor; that is

to say, any woman who may use the letters (L.O.S.) or may not, is to take precedence of a chemist. When one considers the promise of the Lord Chancellor to our President relative to the company question, one can scarcely believe that a Bill so preposterous should have been framed. If this Bill be allowed to pass, it means that any cobbler, grocer, or chimney sweep, by having a £1 share in an unqualified company, may style himself pharmaceutical chemist, etc., "as the case may be." If our Council is to be treated with such contempt as this by a man of such legal status, it is quite time that the registered chemists of Great Britain awoke and made felt that there is a community of intelligent and professional men, whose dignity will be maintained in spite of a foe like the Lord Chancellor. In summing up I can only say that this insult is too deep-seated to be treated superficially by the community I have the honour to belong. It is clear enough now that if the chemists of Great Britain do not see the importance of attaching themselves to the Society as soon as possible, they may as well give their qualification to the wind and seek another calling. Let the Council agitate for the insertion of registered chemist in the Medical Professions (Companies) Bill, and if that is refused, then throw out the Bill *in toto*, and remain *in statu quo*.

Sheffield, April 5, 1899. A Minor Man (179/45).

The Forthcoming Council Election.

Sir,—There is in this week's Journal a letter on the forthcoming Council election which contains such queer old-fashioned notions, adduced with such offers of paternal assistance—assistance to candidates, assistance to voters, redolent with universal assistance as if the gathering gloom were likely to be so dense that without some cut-and-dried patent remedy we might all tumble into the ditch together. All seems given in great simplicity, and with a certain goodness of heart, but old birds are not unacquainted with chaff, and one of them would like an opportunity of giving a seasonable puff to clear the air of such stifling empty rubbish. Do the voters need special assistance of the kind mentioned, or any assistance indeed? I think not. For myself I feel that I know enough of the keen, business-like common-sense of the craft all round to be certain that the wisdom which has led them to join the ranks of the Society will induce them to vote for those well-known champions of pharmacy progress who are good enough to place themselves once more at our service, whose deliberative astuteness becomes more valuable now than ever. And as to the candidates. Do they need assistance? Well, yes, perhaps so, but not of the kind offered. They need, I presume, at all times all trustworthy reports possible from all the points of the compass: from the slums as well as from the squares, and the grand business avenues of Great Britain; for wherever human beings congregate, there pharmacy needs a fair field for its benignant operation, to cope successfully with the varying needs of an ever-changing and complex civilisation. And possibly, for they are but human, these candidates, they may be more or less interested in the "views" of their constituents, but the views of others—dissolving views—are surely about the last objects of a trustworthy representative man's thoughts. It is for him to "view" for himself facts as they all round exist, and striking the resultant on every emergency, acting in view of that rising occasion a straightforward line of conduct for what he knows to be the best for others. Here is what I should call a down-right insult to those who have thus far borne the burden for us, and are willing to bear it still, to have drawn up and posted to them, "when their names are published, a list of questions, the answers to which would assist voters in their selection of candidates." This is a sort of low-class vestrydom proceeding that would, if successful, deter the best men from being candidates in the future, and work in favour of the unscrupulous representative of his own vain-glorious self alone. I have no fear, sir, of this dodge being quite successful amongst the members of the Pharmaceutical Society, but since it has been attempted before, more than once, with some semblance of partial success, it is well to be prepared to give, if we can, the *coup de grace* to such a degrading scheme.

Marylebone, N.W., April 3, 1899. J. C. Hyslop.

The Limited Company Problem.

Sir,—I enclose an advertisement which appeared in *To-Day*, bearing date March 30. Journalism has degraded itself for many a long year by the insertion of quack medicine advertisements which have very materially assisted certain unscrupulous individuals (politely termed "proprietors") to accumulate wealth by methods which, if not fraudulent, are decidedly questionable in character. Here, however, is a most disgraceful attack upon a respectable class of the community—a class to whom the great British public are indebted in many ways. A class of men, moreover, who have complied with the demand of the Legislature, and qualified themselves by the recognised examination which entrusts to them the sale of poisons, and confers on them alone the title of chemist and druggist. May I suggest that this advertisement should be a sufficient stimulus to incite the pharmacists to rise as one man to obtain redress? The very usurpation of the word chemist is ample proof of the manner in which business is often effected. Although the Society may be prevented from dealing directly with these company promoters, I venture to say that it is not improbable or impossible to deal with them indirectly. Surely an attempt can be made to obtain power to control the persons who are entitled to the name and style of chemist and druggist, viz., the power to erase from the Register the names of all persons guilty of infamous conduct? And, of course, the erasion from the Register must mean that the individual so punished be no longer allowed to practise the honourable calling of chemist and druggist. I sincerely hope that there is a sufficient *esprit de corps* amongst pharmacists, and that no one amongst them will consider my suggestion unreasonable. The question of the management of the pharmaceutical Register has nothing whatever to do with outsiders; it affects only those who are entitled to have their names placed thereon, and as in all other matters the voice of the majority should prevail. If the above suggestion can be carried out, I think the solution of the limited company problem will be satisfactorily solved.

Hitchin, April 5, 1899. Edwin A. Morgan.

The Society's Certificate of Membership.

Sir,—I regret that you have not published the correspondence mentioned in this week's "Annotations." So far as the first part of your comments are concerned, they have no application to my case. I am a life member of the Society and my subscription is paid. Nor can I cease to be a member. As to other members they are also inapplicable, as you must be aware that each applicant for membership signs a declaration, when applying, to the effect that he will faithfully conform to the rules and bye-laws of the Society, and there is no necessity therefore for his signing a second declaration to the same effect as Mr. Bremridge's circular of December 8 last required him to do. In addition to this, does it not occur to you that if anyone signs a receipt for a document before that document is even sent to him, such a receipt is no evidence that the document ever reached him, or that it ever was in his possession? I sent the correspondence to you thinking that the official Journal was the proper place in which to discuss a matter connected with the procedure of the Society, and I can only express regret that you did not publish it.

Edinburgh, April 3, 1899. Claude F. Henry.

*** Even a life member of the Society may cease to be a member and, as was pointed out last week, the Society's solicitors are of opinion tha signature of the form of declaration is essential in every case. Apart from that, the reference in the above letter to "Mr. Bremridge's circular" is to be deprecated, inasmuch as the matter is one which does not concern Mr. Bremridge personally. As the Society's Secretary and Registrar it is his duty to carry out the Council's regulations, and there appears to have been nothing in the procedure objected to by Mr. Henry but what was strictly in accordance with those regulations.—[Ed. *P.J.*]

The Strength of Solution of Strychnine Hydrochloride, B.P.

Sir,—If Mr. Squire is satisfied that one-sixth is "sufficiently near" for his 'Companion,' that is his own affair, and seeing he has returned to one-sixth after assuming one-fourth in his letter in your issue for March 11, it is not surprising he offers no defence of it; but it is astonishing he makes no apology for the statements subsequent to assuming an erroneous and illogical fourth for an accurate fifth, which I had formerly found and again explained to him.

Edinburgh, March 31, 1899. George Lunan.

Forfarshire and District Chemists' Association.

Sir,—At a meeting of our Association held last week, it was reported that Mr. Beecham had taken no notice of the resolution sent to him in December protesting against the indecent character of the book of directions issued with his pills. It was resolved to appeal to the trade generally to support our protest. As there is much ignorance, not only of its contents, but also of the serious position chemists occupy as distributors of the book, I may say that Mr. Beecham has been compelled to revise it by the authorities of South Australia. This in itself ought to open every chemist's eyes to the risk he runs in distributing it. I believe not only chemists, but even grocers, who are large distributors of Beecham's pills, would, if they knew the contents of the wrapper, object to be the medium of thus defiling innocent minds. As an example, one paragraph may be quoted: "Many persons suppose that venereal affections are confined to the single and immoral, but I can assure the reader from many years' experience that such is not the case. It invades the married circle to an alarming extent." For the credit of my country I hope this statement applies only to the immediate neighbourhood of St. Helens. Mr. Beecham, in writing thus, says he is only doing his duty, but if he has a mission to cure venereal affections let him advertise it openly, then decent persons of both sexes will know to avoid his pills, and so escape contamination from an essay on this filthy subject now so insidiously placed in their hands. I earnestly hope all chemists will send a protest to Mr. Beecham.

Dundee, April 3, 1899. CHARLES KERR, President.

The Apothecaries' Assistant's Certificate.

Sir,—I am directed by the Society of Apothecaries to request you to insert in the next issue of the *Pharmaceutical Journal* the enclosed statement, the original of which I shall be happy to produce to you at any time.

London, March 29, 1899. JAMES R. UPTON,
Clerk to the Society of Apothecaries.

[ENCLOSURE.]

The Dewsbury and District Chemists' Association desires to express its sincere regret that a statement should have appeared, in a letter written on behalf of the Association and addressed to the Clerk of the Privy Council, to the effect that the Association considered the assistant's certificate of the Apothecaries' Company was not a sufficient legal qualification. This statement the Association desires to withdraw unreservedly, and the Association hereby apologises to the Society of Apothecaries for its insertion in the letter referred to. The Association wishes to disclaim any intention of impugning the legality of the certificate in question.

(Signed) R. GLEDHILL,
Hon. Secretary.

*** The letter referred to in Mr. Gledhill's communication was published in the *Pharmaceutical Journal* for February 11 last (see p. 133), and the matter is commented on at page 327 of this week's issue.—[ED. *P.J.*]

Erythrol Tetranitrate.

Sir,—If Colonel Ford will refer to the *Pharmaceutical Journal* of January 8, 1898, he will find that the explosive conditions of erythrol tetranitrate have been considered by pharmacists. It is there shown that, under ordinary circumstances, the compound is not a violent explosive, but to be thrown into a waste-paper basket, and subsequently into a "dust-pan containing hot ashes," is hardly fair treatment. Such an eminent authority as H.M. Chief Inspector of Explosives must have had considerable experience of the properties of erythrol tetranitrate, and I hope he will kindly favour us with the particulars of the experimental conditions under which he found it so explosive. His suggestions, too, would, I am sure, be much appreciated.

London, April 3, 1899. J. LANGFORD MOORE.

"Rough on Rats."

Sir,—I am glad to see attention has been drawn to "Rough on Rats." The statement has been made that it is a preparation of arsenic, and as such can only be sold in accordance with the Arsenic Act. In the face of this, Messrs. Newbery's letter in last week's issue is not quite fair to the trade. They neither admit nor deny the presence of arsenic. Chemists are surely entitled to know, in order that they may obey the law in making sales.

Dundee, April 3, 1899. W. CUMMINGS.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Membership of the Society.—Yes, there is no need to wait until you receive the certificate. [*Reply to* J. A. G.—25/33.]

Anti-Tic Mixture.—The label renders the article liable to stamp duty because a proprietary interest is claimed in the name of the preparation. [*Reply to* D. L.—26/2.]

Liquor Carmini, N.F.—We see no reason why you should obtain a gelatinous result with this recipe. Perhaps it is due to the quality of the carmine. Repeat the process with a little carmine of another brand. [*Reply to* W. S. W.—25/24.]

Microscope.—The "Fram" microscope, made by Watson and Sons, 313, High Holborn, London, W.C., is exactly the thing for Minor students. Get $\frac{1}{6}$ in. and $\frac{2}{3}$ in. objectives. The book measures 155 by 105 by 14 millimetres. [*Reply to* R. B.—26/6.]

Ferrocyanides and Sulphocyanides.—We should advise you to label them "Poison," but inasmuch as they are not "metallic cyanides," it is not incumbent upon you to do so, and most certainly there is no occasion for recording the sale of the articles in the poison book. [*Reply to* J. C.—26/8.]

Tape-Worm.—You will find the information you ask for in the first volume of Quain's 'Dictionary of Medicine,' under the heading "Entozoa." We cannot deal with the medical aspect of the question in these columns. [*Reply to* C. T.—25/34.]

Notice to Determine Service.—It is generally understood that, in the absence of any agreement to the contrary, one month's notice must be given to the assistant, or a month's salary in lieu thereof. [*Reply to* F. C. F.—26/3.]

Foreign Journals.—The *Journal de Pharmacie et de Chimie* fortnightly, published by Masson et Cie, 120, Boulevard Saint-Germain, Paris, subscription 17 francs per annum; the *Apotheker-Zeitung*, twice weekly, published by the German Apotheker-Verein, 14, Spandauerbrücke, Berlin C. 22, subscription 16 marks per annum. [*Reply to* W. A. K.—26/1.]

The Title "Pharmaceutical Chemist."—No offence can be committed by a non-existent person. In the case you state there is no "Smith" interested in the business and, accordingly, no one to proceed against, since "Jones" cannot be proceeded against for asssuming a title that properly belongs to him. Whether, however, he could be compelled to disclose the fact that he is the sole proprietor is a point that remains to be fought out in the law courts. [*Reply to* D. L.—26/4.]

Oil of Cognac.—This is distilled from the marc of wine with the addition of 1 per cent. of sulphuric acid. The yield is very small, only 1 part of oil being obtained from 2500 parts of marc. Fictitious cognac essences generally consist of acetic ether and other bodies thus:—Oil of petit grain, 1; amyl alcohol, 10; aldehyde, 2; essence of ambergris, 2; acetic ether sufficient to make 100 parts. [*Reply to* G. S.—24/24.]

Ginger Wine.—Bruised unbleached ginger, 12 ozs.; white sugar, 28 lbs.; lemons, 12 in number; water, 12 gallons; raisins, 12 lbs. Boil the ginger with the sugar and the peel of the lemons for half an hour, stone the raisins and pour the liquor, when nearly cold, over them; then add the juice of the lemons with a small quantity of compressed yeast, soluble essence of lemon, 4 ozs., and soluble essence of ginger, 10 ozs. Stir up every day for fourteen days, then add isinglass, 2 ozs.; strain and store in a cask. The wine is improved by the addition of a couple of pints of brandy after fermentation, but that is not essential. [*Reply to* R. W.—25/28.]

INFORMATION WANTED.

Poison Book.—Address wanted of maker of single-leaved entry poison book—that is, one entry on each page. Occupation of purchaser should be given. [*Reply to* J. C N.—26/9.]

ROYAL COLLEGE OF SURGEONS OF ENGLAND 14 APR 99 LIBRARY

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Fertilisation in Gymnosperms. Professor Hirasé publishes a further contribution to our knowledge of the impregnation and biology of *Gingko biloba* (*Salisburia adiantifolia*; and Professor Ikeno a further account of the development of the sexual organs and the process of impregnation in *Cycas revoluta*. The mature pollen grain of *Gingko* consists of three cells of unequal size; the largest is the vegetative cell; a small intermediate cell is the antheridial cell; the smallest exterior cell is inactive. From the largest of these cells is produced the pollen-tube, which branches and spreads over the surface of the nucleus. The intermediate cell divides into a body-cell and a stalk-cell; the contents of the body-cell again divide into two antherozoids, their formation being accompanied by the appearance of attraction spheres. In the formation of the archegone of *Cyas* three periods may be distinguished—the "primordium" (*Anlage*) period, the period of growth, and that of maturity. The pollen-grain consists of two small prothallium cells and a large embryonal cell. Shortly after pollination the pollen-grain produces a tube. The inner prothallium-cell divides into a body-cell and a stalk-cell: in the former appear two centrosomes. Shortly before impregnation the nucleus of the body-cell, or spermatogenous cell, divides into two nuclei, and the cell itself into two spermatids. The nucleus of each spermatid forms an antherozoid, with a nucleus, and a tail composed of cytoplasm. In the nucleus of the oosphere is a crater-like cavity, which the antherozoid enters, in order to fuse with the nucleus of the oosphere.—*Journ. Coll. Sci. Tokyo*, through *Nature*, **59**, 544.

New Albuminoid in Milk. Wroblewski has obtained from milk an albuminoid which is regarded as new, and which he terms opalisin, attributing to it the formula $C_{150}H_{292}N_{43}PS_6O_{68}$. It is neither an albuminnin nor a globulin. Human milk is richest in this body, cow's milk contains less, but mare's milk more than cow's. The opalescence of its solution is a characteristic feature of the new albuminoid.—*Annales de Pharm.*, **5**, 74, after *Apoth. Zeit.*

Calliandra Grandiflora. This shrub, known as Tlacoxilochitl, Pambotano, Lele, Timbrillo, Tepachera, Cabellitos, and Xilonochitl, is indigenous to Mexico and Brazil. The root has had a local reputation as an antiperiodic, but recent investigation does not support this view. The active principle is, according to Altamirano, a glucoside, caliandrin, which appears to be a saponin; Duyk finds that it is toxic in large doses, and also in much smaller quantities when administered by hypodermic injection. Internally it acts as an irritant and emetic. The root is used in the fermentation of tepache, but the part it plays in the process is not evident.—*Bull. Comm*, **27**, 81, after *Bull. de la Soc. de Pharm. de Brux.*

Leaves and Fermentation. Having previously shown (*P.J.* [4], **5**, 458) that certain leaves macerated in fermenting saccharine media give rise to aromatic flavours, G. Jacquemin finds that the unpleasant taste developed at the same time, masking the bouquet produced, may be entirely obviated by employing an aqueous oxtract of the leaves instead of those organs themselves. By employing an extract of vine leaves in the proportion of 1 part of extract to 1000 of ferment from the same vintage, an ordinary wine may be made to develop a bouquet greatly superior to that obtained in the course of fermentation in the usual manner. It is important, to obtain the best results, that the extract and the ferment should be derived from the same source. In selecting the leaves for the preparation of the extract only those of the best strains of vines should be employed, and the ferment employed should be obtained from the grapes of the same strain as the leaves. The importance of these observations to wine growers, if confirmed in practice, are obvious.—*Comptes rendus*, **128**, 369.

Oxides of Rare Earths. The difficulty which has long existed of separating cerium from its accompanying metals, lanthanum and didymium, is due, according to G. Wyrouboff and A. Verneuil, to the existence of double oxides, consisting of a molecule of ceric oxide and three molecules of the lower oxide of the other metal, such as $C_3O_4(LaO)_3$. The oxide $C_3O_4(CeO)_3$ is obtained by precipitating mixtures of ceric and cerous salts. In this the cerous oxide is readily replaced by the analogous oxide of didymium or of lanthanum. These double oxides are readily polymerised and give two isomeric oxides, which form salts analogous to those of pure cerium. The authors announce that the elucidation of this point enabled them to separate cerium completely and quantitatively from any mixture of rare earths. This matter will be the subject of a future communication.—*Comptes rend.*, **128**, 501.

Plants Causing Eruptions. To the number of plants which cause eruptions on delicate skins, Anstruther Davidson adds *Solanum xantii*, a common plant in California, and also the common cultivated fig. In the latter case the cause of the trouble is the minute hairs on the leaf. The fruit, being free from these, does not give rise to the eruption. The dermatitis is observed chiefly among children engaged in gathering figs, but adults with delicate skins are affected. The author points out, the presence of these irritant hairs hardly accords with the accepted statement that the fig leaf formed the primitive garment of man.—*Therap. Gaz.*, **22**, 86.

Formaldoxime as a Reagent for Copper. Formaldoxime, either in the free state, or the trioximidomethylene hydrochloride obtained by mixing equal molecular proportions of formic aldehyde and hydroxylamine hydrochloride, gives, with a trace of a soluble salt of copper, in the presence of an excess of potash, an intense violet colour. The reagent may be made by mixing formaldehyde solution, 20 per cent., and hydroxylamine hydrochloride. The solution thus obtained keeps indefinitely. The reaction is sufficiently delicate to detect 1:1,000,000 of cupric sulphate. With strong solutions of copper, a deep green colour is produced, the violet reaction being only obtained on copious dilution.—*Comptes rend.*, **128**, 363.

New Products of Amylic Alcohol. Guerbet finds that when amylic alcohol is boiled with metallic sodium and the heating continued for twenty-four hours, under a reflux condenser, that a new alcohol, $C_{10}H_{22}O$, and a new acid, $C_{10}H_{20}O_2$, are formed, as well as isovialeranic acid and the isovalerianic ester of the new alcohol. This is due to the action of the sodium amylate on amylic alcohol, thus, $C_5H_{11}NaO + C_5H_{12}O = C_{10}H_{22}O + NaOH$ and $C_5H_{12}O + NaOH = C_5H_9NaO_2 + H_4$. The alcohol thus formed is oxidised, producing the new acid, thus, $C_{10}H_{20}O + NaHO = C_{10}H_{19}NaO_2 + 4H$. This alcohol boils at 210°-211° C. at ordinary pressure, and the acid at 164°-165° C. at 46 M.m. pressure.—*Compt. rend.*, **128**, 511.

A NEW TEST FOR COCAINE.

BY DR. GEORGE L. SCHAEFER.

There are two well-known tests for determining the freedom of commercial cocaine salts from other coca alkaloids. These are the permanganate test for detecting cinnamyl-cocaine and the ammonia test, popularly known as McLagan's test, for detecting the presence of the coca alkaloids which are resistant to permanganate.

While it is generally admitted that the permanganate test is sufficient to detect the presence of cinnamyl compounds, some chemists have expressed doubt regarding the value of McLagan's test. The writer has for some time been conducting experiments with the object of finding a substitute for McLagan's test which would allow of the rapid and accurate determination of the presence in cocaine salts of the coca alkaloids not indicated by the permanganate test.

As the result of numerous determinations, I have devised a test based on the fact that the chromates of these alkaloids are much less soluble than cocaine chromate, both in water and in water acidulated with hydrochloric acid. The relative solubility of the chromates in acidulated water is about 1 to 500 in the case of cocaine chromate and 1 to 5000 in the case of residual alkaloidal chromates.

I therefore offer the following as a simple and satisfactory method of determining the purity of cocaine salts: 0 05 Gm. cocaine hydrochloride is dissolved in 20 C.c. of distilled water, mixed with 5 C.c. of a 3 per cent. solution of chromic acid, and to the mixture 5 C.c. of a 10 per cent. solution of hydrochloric acid is added. It is advisable to keep the temperature of the solution at 15° C. If the cocaine hydrochloride be pure, a clear solution will result. If other than traces of foreign coca bases be present the solution becomes cloudy at once, or in a few minutes, according to the amount of impurity present.

It is advisable to make the test side by side with a specimen of known purity for comparison.

NOTE BY A. J. COWNLEY.

The precipitation of cocaine chromate on adding to a solution of cocaine hydrochloride (1 in 100) a 5 per cent. solution of chromic acid, and then some concentrated hydrochloric acid, was suggested by Dr. Carl Mezger as a test for cocaine (*Pharm. Zeit.*, **24**, 697), and the test recommended by Dr. Schaefer appears to be an application of the same reaction. It seems to be an excellent test, but so much more stringent than MacLagan's that it may be questionable whether MacLagan's should not be preferred as sufficient for commercial purposes. Two different samples of cocaine salt that would just pass MacLagan's test would not pass the chromic acid test, and probably the only salt that would pass the chromic acid test would be one prepared from synthetic cocaine.

TANNOPIN.—This condensation product of tannin and urotropin was first favourably reported on by Schrieber as a remedy in intestinal catarrh. G. Joachim now states that it is a most valuable remedy in infantile diarrhœa, cholera nostra, and enteritis. In choleraic diarrhœa the effect of the remedy is increased by combining it with a minute dose of calomel, thus: tannopin, 30 to 50 centigrammes, calomel, 5 milligrammes. In certain tuberculous cases, tannopin was given in doses of 1 to 2 grammes per diem without any ill effect. The author finds that the remedy is quite harmless to the youngest children in doses of 30 to 50 centigrammes four times in twenty-four hours, older children and adults may take from ½ to 1 gramme.—*Therap. Monats.*, **12**, 631, after *Allg. med. cent. Ztng.*

THE CHEMIST AS PHOTOGRAPHIC DEALER.*

BY A CHEMIST.

The chemist finds the profits in many once highly remunerative directions becoming less and less. Patent medicines, toilet requisites, and so on—once well worth attention—have, from a variety of causes, slipped in a great measure out of his hands, or, what comes to much the same thing, they have been grasped at by so many competitive other hands as to make their selling a very different thing to what it once was. Even in his more special field, grocers sell drugs, drapers scents, and stores dispense prescriptions, at far less comforting prices than he had got to regard as legitimately and particularly his. The natural result is, that he has to turn to fresh directions in the effort of replacing vanished, or supplementing vanishing, profits in the more orthodox grooves. One of these new departures is dealing in photographic articles. Now, on the face of it, the chemist should make a very suitable man at this; his shop is admirably suited to the storage and display of photographic goods, he is himself accustomed to handle delicate and fragile articles, and his familiarity with the weighing of chemicals, and turning them into solutions of definite strengths, to say nothing of the closer knowledge he would have of the properties of active ingredients, ought to stand him in good stead when similarly applied in what pertains to photography. Again, the optical knowledge, and mechanical aptitude necessary, one would naturally expect to be present, or readily acquired at need, from his general scientific training. But theoretical probabilities, from some reason or other, are apt to break down when it comes to practice. Clergymen's sons are rarely held up as shining examples, stockbrokers conclude important money dealings with lead-pencil scribblings in small note books, doctors are careless livers, madmen less dangerous with unlocked than locked doors, and, finally, to our particular point, chemists do not make good photographic dealers.

Speaking broadly, the whole traditions of a chemist's trade go against the accepted formula for success, if by that be meant a banker's balance on the right side, as understood nowadays. The leading businesses of to-day owe their position to the consistent application of the rule of small profits and large returns; the chemist, on the other hand, has been trained to believe in large profits and small returns. This anomalous position is mainly due to the mixture of profession and trade in his work. Where an element of the former enters, such as in the special knowledge needed and care exercised in the proper mixing of various strong items in a medicine, he is certainly entitled like any other professional man to rank, pay, and profit on the higher professional scale; where this is not needed, he is a tradesman pure and simple. As he has, however, much about the same make up in the way of human nature as any other man, it is very natural that the professional wing should be extended to cover as much as possible, and high charges shelter under its shadow when they should not. Applying this in the photographic direction, the chemist is not genially prepared like his more up-to-date competitor to sell with a low enough margin of profit; a camera is held to have something of additional value if figuring for sale in his shop, and far too much is charged for the necessary chemicals. The result is that he suffers, now that people have found out that there is no particular "divinity hedging in" his shop, excepting only in the sale of poisons. A good deal of grievance and friction there is in this poisons question; but it is one that could very easily be settled by the exercise of a little common sense even under the existing order of things. Were the chemist wise in his generation, he would certainly, with this

* From the *British Journal of Photography.*

trump card of being the exclusive legal seller of poisons, in hand, not act as he generally does in charging top prices for what can only be obtained from him, but reduce them to the lowest possible figure, and take full advantage of the very material gain of having once got a customer into the shop, in introducing other and ampler business; but at fair trade prices, and not bastard professional ones, for, apart from all other considerations, it is useless standing out for the latter against the general cheapening tendency of an educated age. The same reasonable holding to a low profit ought also to give him an advantage in putting up the various solutions for amateurs; but even the amateur is not going to recognise any particular claim for doing so, beyond a fair profit upon the ingredients and bottle, and a slight charge for the trouble. In plain English he must shed the idea that a special training in one direction makes him superior to his fellows when off his own ground. It is rather unfortunate that the slightness of that training goes rather against doing this readily, begetting instead a tendency towards quackish pretension. Must it not be admitted that the gravity of his demeanour, together with the archaic air of his surroundings, give him rather a dodo air, a something that may have had eminently useful purpose at some past time, but now to all common-sense judgment unfitted for the present commercial struggle? All goes against smart photographic business, and the desirable capacity of being able to grasp any new idea and departure in a field markedly rich in them.

Another drawback he suffers from is that, owing to the personal attention needed by his duties and the long hours he has to be at them, there is not the opportunity for acquiring, in pleasant little ramblings and social intercourse with photographers, a practical knowledge of the work. How this handicaps him can be readily judged by the cheap rubbish so frequently shown in his window; and in selling it must surely be more markedly still to his disadvantage, for what can equal in effectiveness the discussion of methods of practical working with a customer?

The same drawback, of long hours and close attention to business, must be held accountable—"though cry this not too loud in the streets of Ascalon"—for the suggestion of sourness of temper, and impatience of contradiction, somewhat noticeable in chemists as a class. This tells unfavourably in the oftentimes tedious, always lengthy, process of persuading a man to part with his money for a camera, or what not. The *ex-cathedrâ* air of the recommendation that carries off, with remarkable promptness, the sale of a box of liver pills, or bottle of cough mixture, where all the knowledge is on one side and a readiness to try anything for the relief of pain on the other, is decidedly not the best one in selling a photographic article to a customer, with his own fully developed ideas respecting his hobby very much to the front.

I hasten to add that there are many exceptions, especially in the younger ranks, and, if these take up photographic dealing upon the modern lines roughly indicated, they could undoubtedly make a good thing of it, both for themselves and their customers. The Pharmaceutical Society is honourably anxious to lift the professional status of the chemist, and is doing its best to that end, by stiffening examination and aiming at a closer monopoly in the sale of poisons. Whether it can do so, and still make him a business success, is very doubtful. The tendency of the day is against legal monopoly; and, proof of the pudding being in the eating, nine-tenths of the men, after passing their qualifying examination, soon find, in the struggle for bread and cheese, that it pays better to sink the professional side, and fight with such recognised trade weapons as attractive window displays, competitive prices, and free mixing upon equal terms with their fellows. And, as this is a natural evolution occasioned by the force of circumstances, it must have about it more of permanence than any, though admittedly higher, artificial, academic effort of the few in a contrary direction, the natural comforting deduction being that the chemist will go on improving as a dealer in things photographic.

THE LOCALISATION OF ALKALOIDS.

At the seventieth convention of German Naturalists and Physicians at Düsseldorf, Wijsmann, of Leyden, reported very interesting and valuable results in the matter of localising in the living plant the alkaloidal constituents. He described the advantages resulting from conducting such a study on cells that have been brought into the plasmolytic condition by the action of a 30 per cent. solution of saltpetre.

Nicotine is known to be located in the lower cells of the hairs on the leaves of *Nicotiana tabacum* and *N. rustica*, and can be detected with an iodine solution. It is likewise found in the epidermal cells standing in connection with these hairs. In endeavouring to answer the question whether it is situated in the protoplasm or in the vacuoles, the plasmolytic method is made use of. The cells are placed in a 30 per cent. saltpetre solution which extracts the water from the cells, producing results described by De Vries as abnormal plasmolysis. The protoplasm dies, only the walls of the vacuoles being excepted, the latter structures appearing among the dead protoplasm as clear, spherical, strongly contrasted globules. When treated with a saltpetre solution in which iodine is dissolved a precipitate is obtained exclusively in the vacuoles. Thus Wijsmann tests separately the protoplasm of the cell and the fluids of the vacuoles for the alkaloid, finding it in the latter only.

As a second example, berberine was studied. When cells containing berberine are plasmolysed with strong saltpetre solution, the contracted vacuole assumes a darker colour than it possessed originally, owing to the concentration of the fluid in the vacuole. Gradually the wall of the vacuole dies and becomes penetrable to saltpetre, which enters, causing a granular precipitation of nitrate of nicotine, which soon begins to crystallise. One can observe the vacuole fill with the crystalline grains, which form a spherocrystal in the place occupied by the contents of the vacuole.

In this method, the plasmolysing agent is likewise the reagent, and by increasing its concentration the appearance of crystals of the nitrate of the alkaloid results. The author believes this to be the first instance of the observation under the microscope of crystal formation in the cell as a microscopic reaction for alkaloids in fresh sections.—*Pharm. Zeit.*, 43, 691, through *Pharm. Review.*

Orthoform Emulsion for Laryngeal Application.—Although orthoform is found to be an excellent anæsthetic for application to the larynx, in the powdered form it has the disadvantage of causing violent coughing and an uncomfortable burning sensation. This is obviated by G. Kassel by the use of an emulsion of orthoform, 25, and olive oil, 100, applied by means of a tracheal spray. The application causes a slight burning sensation and a feeling of "lump in the throat," which may last for fifteen minutes; complete anæsthesia is afforded by eating. Solid food can easily be swallowed, and the anæsthesia produced is more lasting and satisfactory than that produced by cocaine. Not only does this treatment allow food to be taken, but it also renders the application of remedies such as lactic acid less distressing to the patient.—*Therap. Monats.*, 12, 556.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, APRIL 12, 1899.

Present :

MR. WALTER HILLS, PRESIDENT.
MR. G. T. W. NEWSHOLME, VICE-PRESIDENT.

Messrs. Allen, Atkins, Bateson, Bottle, Carteighe, Corder, Cross, Grose, Harrington, Harrison, Park, Savory, Southall, Storrar, Symes, Warren, and Young.

The minutes of the Council meeting neld on March 1, were read and confirmed.

THE LATE MR. A. S. HILL.

The PRESIDENT said that since the last meeting of the Council they had lost perhaps their oldest member by the death of Mr. Arthur Stephen Hill at the advanced age of 97. He was almost, though not quite, a founder of the Society; he attended the historic meeting at the Crown and Anchor, and had been a continuous supporter of the Society and subscriber to its funds from the year 1842. His son, Mr. Arthur Bowdler Hill, was an auditor of the Society in the year 1857, and his grandson, Mr. C. A. Hill, was a student in the Society's School in the year 1893, and a subsequent worker in the Research Laboratory. Thus an interest in the Society's work had been shown by three generations of the Hill family. The late Mr. Hill started in business as long ago as 1824, and retired from active business in 1872. He was a prominent member of the Salters Company, of which body he was elected Master in the year 1858. He (the President) had had the pleasure on two or three recent occasions of dining with that Company and meeting the late Mr. Hill, when he was much struck by the wonderful powers that remained to him, notwithstanding his advanced age. Mr. Arthur B. Hill had written intimating that his late father had left a legacy of £50 to the Benevolent Fund. It was very satisfactory to think that, with all the other claims Mr. Hill had upon him, he should have thought of the Benevolent Fund, and have left it a legacy which would be of great benefit to those of their brethren who were in distress. He was sure the Council would join with him in expressing sympathy with the family in their bereavement.

ELECTION OF MEMBERS.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society :—

Adams, Joseph Henry ; Dawlish
Adams, Thomas E., junr. ; Liverpool
Aitcheson, John Tait ; Edinburgh
Akeroyd, Charles Edward ; Wolsingham
Alexander, Thomas ; Edinburgh
Allison, John Robert Billyard ; Retford
Allwood, William S. ; Basford
Amies, Samuel Myddleton ; London
Anderson, Edmund H. ; Stirling
Andrews, J. Knowles ; Astwood Bank
Angus, Robert Smith ; Lancaster
Aplin, Isaac Weston ; Yeovil
Appleton, Arthur James ; Sheffield
Atkinson, Leonard Joseph ; London
Back, Charles Thomas ; Kensington
Badman, William R. ; Muizenberg, S.A.
Bailey, Samuel ; Nottingham
Baker, Thomas ; Oldham
Balmford, John Archibald ; Folkestone
Bard, Cecil Harry ; Exeter
Barnes, George A. ; Newton Abbot
Bates, Betsy Helen ; Oldham
Bates, Henry James ; New Benwell
Batty, Thomas ; Aston
Batty, Thomas Edward ; York
Bayfield, Gabriel Thomas ; Kensington
Beilby, Alfred Emanuel ; Nottingham
Bell, William W. ; Newcastle-on-Tyne
Bennett, Frederick ; Chester
Billington, John ; Blackpool
Billinton, Arthur ; Wakefield
Binks, Thomas Coates ; Castleford
Bisset, Arthur William ; Ceylon
Blamey, Charles Austin ; Brighton
Bolam, John ; Newcastle-on-Tyne
Bonnar, William ; Glasgow
Booth, John ; Buluwayo
Bowe, Oswald Routh ; Hawes
Bowell, Horace J. W. ; Wolverhampton
Breese, Charles ; Streatham
Brodie, John Dallas ; Edinburgh
Brook, Thomas Turner ; Elland
Brown, Alfred ; Ryde
Brown, Edgar Marshall ; Kensington
Brown, Henry Armstrong ; Sunderland
Brown, Thomas Fred. ; New Norfolk
Bruce, Alexander Gibb ; Edinburgh
Bryars, William Hudson ; Sheffield
Budden, William ; Liverpool
Buddles, William ; London
Burgham, Harry Hinsley ; Ipswich
Burnett, Augustus F. ; Sherborne
Burnett, Thomas ; Liverpool
Burton, Percy Herbert ; London
Butler, Richard ; Bradford
Carpenter, Frederick Ernest ; Burnham
Carter, James Charles ; Shanghai
Casson, Frank ; Trowbridge
Chadwick, John ; Church
Charles, Richard Emment ; Brecon
Charlesworth, Charles E. ; Manchester
Checketts, Mary ; Winchmore Hill
Clark, James ; Portsoy
Clarke, Tom Gilham Burn ; Tottenham
Clarke, William John ; Lambeth
Clarkson, Thomas ; Harringay
Clempson, Joseph ; London
Clutterbuck, Charles ; Weston-s.-Mare
Coates, Harold Kinsella ; Oxton
Coggin, Archibald Henry G. ; Ware
Collier, Frederick James ; Birmingham
Colwill, Richard ; Dulwich
Conway, John Jones ; Leigh
Cook, Harry ; Chatham
Cook, Harry ; Ealing
Cook, Thomas ; Lincoln
Cooke, Charles Woodfield ; Liverpool
Cooper, Burton F. J. ; Brixton
Cooper, Herbert Edward ; Scarborough
Cooper, John James ; Port St. Mary
Cooper, Thomas ; West Smethwick
Corder, Herbert Scott ; Sunderland
Coslett, Thomas Watts ; Birmingham
Coulter, George ; Wetherby
Cowley, Henry W. ; Nottingham
Cox, Thomas Finchett ; Ediuburgh
Crawhall, Thomas Currah ; Harrogate
Croydon, E. H. ; Newcastle, Staffs.
Darroll, John Walter ; Loudon
Davie, John Scott ; Glasgow
Davies John Tremere ; Bristol
Davies, Thomas Edgar Owen ; Rhyl
Davies, William ; Lampeter
Davis, Henry ; London
Dean, Charley ; Bury
Dean, Thomas H. ; Hemel Hempstead
Delamar, Edward Thomas ; Bootle
De Lisle, Francis Rouget ; Cambridge
Dester, Joseph ; Aylsham
Dey, Alexander John ; Edinburgh
Dickins, Benjamin ; Liverpool
Dixon, William ; Newcastle
Dobson, John ; Glasgow
Doig, William ; Newport-on-Tay
Douglas, Robert Donald ; Sheffield
Drew, Samuel Kingdon ; Liverpool
Drury, George John ; London
Duncan, James George ; Liverpool
Dunmore, George Henry ; Downton
Dunn, William Arthur ; Forest Hill
Dyson, William Henry ; Sheffield
Edwards, Frederick W. ; Spalding Moor
Elliott, Stephen James ; Southport
Ellis, David ; Carrington
Elmitt, S. F. ; Newcastle-under-Lyne
Elmitt, William ; Leicester
Emett, Thomas ; Preston
Evans, William Willoughby ; Fulham
Exelby, George Henry ; Norwich
Eyre, William Robert ; Scarborough
Fairbairn, James Hume ; London
Fallding, Arthur ; Sheffield
Fallding, Harry Bennett ; Sheffield
Farmer, Arthur Coningsby ; Spilsby
Fawcett, Frank Dalby ; New Ferry
Felton, William ; London
Fieldsend, Arthur ; Penistone
Findlay, James ; Edinburgh
Fisher, William ; Edinburgh
Flower, John Scott ; Bournemouth
Forster, William ; London
Forrest, James Lindsay ; Birkenhead
Fortnam, Frederick Henry ; Willenhall
Foster, William ; Liverpool
Fotheringham, William ; Carnoustie
Fox, Thomas Augustine ; St. Helens
Fox, William ; Westerham
Francis, George W. ; Melbourne, Vic.
Furniss, Thomas ; Liverpool
Gabbestis, Thomas Holmes ; Beverley
Galbreath, Robert Brock ; Paisley
Gardner, Charles Albert ; Sheffield
George, Isaac ; London
George, John Arthur ; Sheffield
Gibson, William Thomas ; Nottingham
Giles, Frank ; Folkestone
Gill, Frank ; Keighley
Girvan, John ; Liverpool
Gower, John ; Llanelly
Gregson, Joseph ; Oldham
Griffin, John Taylor ; Chingford
Gudgen, Frederick George ; Woodstock
Hall, Henry Stacey ; Mauchester
Hardy, Samuel ; Liverpool
Harrington, William ; Whitehaven
Hart, Walter Richard ; London
Hartshorn, Albert ; London
Hawdon, James A. J. ; Great Grimsby
Heap, Henry ; Ashton-under-Lyne
Hearne, Robert Moore ; Grimsby
Heath, Robert Philip ; Brighton
Heath, Victor Charles ; Birmingham
Hebden, William Carr ; Halifax
Henderson, Alex. K. ; Kirkcudbright
Hicks, Frederick Joel ; London
Hill, Richard Mainprize ; Scarborough
Hitchon, Charles ; Padiham
Holden, Abraham Hobson ; Barnsley
Holloway, Charles Terry ; London
Holt, William ; Nuneaton
Horniblow, Frederick H. ; Worcester
Horsley, Edward Smallbrook ; London
Howorth, Walter Septimus ; Plumstead
Hughes, Henry John ; Brighton
Hughes, Thomas Ignatius J. ; Liverpool
Hunt, Harold Edward ; Poole
Hunt, Herbert George ; London
Hunt, Leonard ; Manchester
Huntley, Joseph ; Kidderminster
Hurst, Samuel John ; Boston
Inch, Jedediah Paul ; St. Mellion
Jackson, William Kendall ; Bradford
Jarvis, Clarence Frank ; Birmingham
Jealous, Bernard ; Bedford
Jeeves, Arthur Thomas ; Brighton
Jelley, George William ; Coventry
Jelley, John William ; Hebden Bridge
Jewell, Alfred Furniss ; Liverpool
Johnson, Frederick ; Nottingham
Johnson, Walter Thomas ; Stratford
Johnstone, James ; Catford
Johnstone, William Graham ; Dumfries
Jones, C. William ; Merthyr Tydvil
Jones, John Ellis ; Trevor
Jones, John Maurice ; Frodsham
Jones, Penrhyn Vaughan ; Manchester
Jones, William ; Liverpool
Jordan, James Alfred ; Liverpool
Josling, Alfred ; Camberwell
Kingston, W. W. ; Skelton-in-Cleveland
Kirk, George ; Cottingham
Knight, Angus Arthur ; Bradford
Lambert, John Thomas ; Wombwell
Latham, Ernest James ; Shirebrook
Leadbeater, Sidney Herbert ; Dulwich
Leighton, William Nicholls ; Hanwell
Lemmon, Eric ; Exeter
Lennox, James ; Edinburgh
Lescher, Thomas Edward ; London
Le Seelleur, George ; Jersey
Lindsey, Robert William ; London
Llewellyn, Richard ; Merthyr Tydvil
Lloyd, Thomas Edwin ; Garston
Lockwood, George ; Greenwich
Lodge, Arthur William ; Liverpool
Long, Herbert S. Amis ; Scarborough
Longdin, Thomas W. ; Scarborough
Low, John ; Pelton Fell
MacAlley, Robert ; London
McBain, James ; Edinburgh
McCutcheon, Alexander ; Edinburgh
McDonald, Kenneth ; Dunkeld
Macfarlane, Malcolm ; Forfar
McIntosh, John ; Llandudno
McIntosh, John William ; Portsmouth
Macintyre, John Hoyes ; Glasgow
Mackay, Edward ; Bradford
Mackenzie, Donald ; London
McNaughton, D. E. F. ; Johannesburg
MacRossen, James R. ; Pollokshields
Magan, Frances ; Longford
Maggs, Frederic W. ; St. Leonards-on-Sea
Maidment, Harold Harding ; Sandown
Makepeace, Arthur Benedict ; Coventry
Mallett, Henry Philip ; Norwich
Mannox, Gertrude Annie ; Leamington
Manuel, Walter ; Sheffield
Marshall, Arthur A. ; Waltham Abbey
Martin, John ; Falmouth
Martindale, William Harrison ; London
Mason, Thomas ; Nottingham
Masson, Hedley George ; London
Masterman, Francis John ; Driffield
Mathewson, David ; Leith
Meacher, John Charles ; London
Miles, Charles ; Somerton
Miller, Thomas ; Manchester
Millidge, Alfred ; Newport
Milne, Hamilton ; Sheffield
Milner, Anthony Greaves ; Bradford
Milton, William Edwin ; Chew Magna
Mitchell, George Alexander ; Glasgow
Moore, John Arthur ; Grimsby
Moran, William John Grace ; Glossop
Morgan, David King ; Carmarthen
Morgan, Harold Marston ; Plymouth
Morley, George ; Skegness
Morris, Thomas Edmund ; Liverpool
Morrison, Clarence Pacy Allan ; Oxford
Moxon, John Lawrence ; Liverpool

Murray, Alexander; Edinburgh
Murray, William; Coventry
Napier, Duncan; Edinburgh
Neale, Cecil; Leicester
Newey, Thomas; Birmingham
Nimmo, James Henry; Edinburgh
Noble, Alexander; Galashiels
Nutman, Samuel Charles; Leicester
Nuttall, Maurice William; Worthing
Oakley, Robert Henry; York
Oldham, Henry; Hyde
Olds, Arthur Charles; Bath
Orrell, William Herbert; Bolton
Packer, Frederick Ernest; Eastbourne
Palmer, Harvey; Gt. Yarmouth
Palmer, Henry James; Liverpool
Palmer, William Francis; Nottingham
Parker, Samuel; Morecambe
Parkinson, William; Burnley
Paterson, George Derwent; Workington
Pattinson, Thomas; Guisborough
Peck, Frederick William; London
Pennie, William; Peterhead
Pennington, John; Wigan
Pescod, William; Newcastle-on-Tyne
Phillips, Ivor Reginald; Guernsey
Pickering, Henry; Leicester
Pirrie, Charles; Rothiemay
Pollard, Evelyn William; Ryde
Powell, Thomas; Fairford
Pretty, Clement John Robert; Croydon
Prichard, Thomas H.; Abertillery
Priest, Benjamin William; London
Punch, James; Ramsgate
Rayson, John Thomas; Nottingham
Redpath, William; London
Rees, Colin Atkins; Dartmouth
Reid, William; Aberdeen
Rhodes, John William; London
Rigden, George; London
Roberts, Joseph; Newcastle on-Tyne
Roberts, Thomas W.; Ellesmere Port
Robertson, Alexander H.; Belfast
Robertson, James George; Dumfries
Robinson, Joseph; Stanley
Robson, Tom Wardhaugh; Tiverton
Rodman, John; Glasgow
Roebuck, Alfred; Liverpool
Roebuck, Frederick Goddard; York
Rowe, John Westaway; Hoylake
Rowe, Walter; Leicester
Rowland, George H. C.; Edinburgh
Saunders, Charles Edward; Highgate
Sell, William Henry; London
Selloes, Thomas; Coventry
Shaw, Tom; London
Sherwood, Joseph Henry; Withington
Shippam, Henry; Nottingham
Shirtliff, William E. D.; London
Short, William John; Brighton
Sime, Thomas; Edinburgh
Siminson, Henry; Warminster
Simpkins, George Starr; Stourbridge
Simpson, Henry Higson; Louth
Simpson, Peter; Carlisle
Sinclair, George; Edinburgh
Sinclair, James Donald; Edinburgh
Sivewright, James; Edinburgh
Sleggs, George Milner; Liverpool
Sleight, Fred; Bristol
Smith, Charles; Rushden
Smith, Charles Clapcott; Pau
Smith, Charles H.; Barrow-in-Furness
Smith, Joseph; Nottingham
Smith, William; Colchester
Smith, William Ross; Liverpool
Somerville, George; Edinburgh
Sowden, Samuel; Bowling
Spence, George; Newcastle-on-Tyne
Steele, Grave Irving; Carlisle
Stevenson, John Joseph; Nottingham
Stewart, James; Cheltenham
Stokoe, John Calvert; Sunderland
Strang, Peter; Perth
Street, Herbert; Streatham
Street, Spencer; Littleport
Strickett, John; Peckham
Tate, Anthony; Durham
Taylor, Horace Dugdale; New Barnet
Taylor, John; Ryde
Taylor, John Ratcliffe; Workington
Thatcher, Robert; London
Thomas, Lewis Edwin; Liverpool
Thomas, William Hendy; London
Thompson, John; London
Thorne, Alfred John; London
Thorpe, Thomas F.; Earl's Barton
Tirrell, Arthur William; Hanley
Trick, William B.; Stoke Newington.
Turnbull, C. S.; Rio Grande do Sul
Turton, Edwin Evelyn H.; Nottingham
Tytler, William Wallace; Arbroath
Veitch, William; Burnley
Waddell, John; Glasgow
Walker, John Philip; Shipley
Wallbridge, Henry Alfred; London
Wallis, Edwin; Streatham
Walshaw, Richard C.; Huddersfield
Walton, William Henry; Hull
Ward, John; Birmingham
Waterworth, Eli; Preston
Watson, Herbert Shipley; London
Watt, George Adam; West Hartlepool
Webb, Ernest George; Kennington
Westley, George Ernest; Walsall
Wheeldon, Richard H.; Manchester
Wherly, Charles; Liscard
Whineray, George Edward; Willesden
Whitchurch, Ernest W.; Nottingham
White, David; Blackheath
White, James Albert; Bradford
White, William Henry; Doncaster
Whitehead, Thomas; Northallerton
Whitehead, William; Bury
Whyman, George Grundy; Liverpool
Wicks, Harry Gilbert; London
Widdowson, Reuben; Nottingham
Wiggins, John; Market Harborough
Wild, George Frederick; Hyde
Wilkins, Edward; Tientsin
Willett, Joseph; Winsham
Willey, Joseph; Hoyland
Williams, Samuel R.; Plymouth
Williams, Thomas Henry; London
Williamson, Nicholas; Liverpool
Willson, Cornelius; Grimsby
Wilson, James; Great Harwood
Wilson, James Munro; Insch
Wilson, Thomas Ellick; Darlington
Woodliffe, Henry Grayson; Islington
Woodward, James Henry; London
Woollons, Charles Henry F.; London
Wrather, Thomas E.; Bewdley

Election of Student-Associates.

The following persons having passed the "First" examination and tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Acton, Victor Guernsey; Fakenham
Beech, Thomas; Knutsford
Bill, Albert Thomas; Jarrow
Burke, William Dixon; Birmingham
Campbell, George; Penrith
Challenger, E. J.; Weston-super-Mare
Clark, Edward Joseph; Croydon
Crook, Thomas; Darwen
Cuthbert, Harry Holmes; Northampton
Dowell, James; Stirling
Freeman, Arthur Owen; Brierley Hill
Hyde, James Edwin; Christchurch
Jones, John William; Plymouth
Maddox, D. C.; Skipton-u.-Wychwood
Mansley, Thomas Henry; Chorley
Misselbrook, William M.; Norwich
Needham, Joseph Henry; Blackburn
Phillips, William; Bewdley
Poad, John Edward; Looe
Shepherd, John McLagan; Dundee
Taggart, Arthur W.; Whitehaven
Tucker, Francis Herbert; Burnham
Webster, Philip; Leytonstone
Wilson, Alexander S.; Great Yarmouth

Several persons were restored to their former status in the Society on payment of the current year's subscription.

Nominations for Council and Auditors.

The Secretary reported that he had received seventeen nominations to fill the seven vacant seats on the Council, and that the following thirteen persons had expressed their willingness to accept office if elected:—

Bottle, Alexander, Dover.
Campkin, Algernon Sidney, Cambridge.
Carteighe, Michael, 180, New Bond Street.
Druce, George C., Oxford.
Glyn-Jones Wm. Samuel, 159, E. India Road, E.
Harrington, John F., Kensington.
Harrison, John, Sunderland.
Morrison, J. W. T., Tring.
Park, C. J., Plymouth.
Smith, John, Liverpool.
Southall, Alfred, Birmingham.
Wright, Robt. Edwin, Phœnix Street, St. Pancras.
Young, John Rymer, Warrington.

The following had not expressed willingness to accept office:—

Gibson, Wm. Humphrey, Brighton.
Robinson, Richard Atkinson, Brompton.
Umney, J. C., Southwark.
White, Edmund, St. Thomas's Hospital.

The following gentlemen had been nominated as Auditors, and all had expressed their willingness to accept office:—

Butt, Edward N., Hamilton Terrace, N.W.
Lescher, Frank Harold, Bartholomew Close.
Stacey, Samuel Lloyd, Great St. Helens.
Umney, Charles, Southwark Street.
Yates, Francis, Surbiton.

Report of the Government Visitor on the Examinations in London.

It was announced that a letter had been received from the Privy Council Office, enclosing the following report from the Government Visitor:—

Report on the Examinations held by the London Board of Examiners of the Pharmaceutical Society of Great Britain during the year ending March 31, 1899.

To the Lords of the Council.

My Lords,—I have the honour to report for your information that during the year ending March 31, 1899, I attended on thirteen days the examinations of the London Board of Examiners of the Pharmaceutical Society of Great Britain, held during April, July, October, and January.

First or Preliminary Examination.

	Numbers.	Percentages.
Candidates examined	1357	—
,, who passed	618	45·5
,, ,, failed	739	54·5
Failed in Latin	471	34·7
,, English	422	31·1
,, Arithmetic	676	49·8
,, all subjects	269	19·8

The results of this examination show how large a number of men fail on the threshold of their business career, through lack of a good elementary education. Happily, this easy examination will be discontinued after August next, and more stringent tests of Preliminary education will be demanded.

Minor or Qualifying Examination.

	Numbers.	Percentages.
Candidates examined	1190	—
,, who passed	348	29·2
,, ,, failed	842	70 8
Failed in Chemistry	449	37·7
,, Materia Medica	29	2·4
,, Botany	64	5·4
,, Prescriptions	59	5·0
,, Pharmacy and Dispensing	271	22 8
,, obtaining the aggregate number of marks for a pass	122	10·3

In view of the large increase of the numbers examined as compared with the candidates (913) in the preceding year, it is not surprising to find an increase of 6·2 per cent. in the failures. It will be noted that a large proportion of those who failed were rejected in Chemistry and in the practical work of Pharmacy and Dispensing. An inadequate knowledge of these subjects, which are indispensable to the calling of the chemist and druggist, is regrettable. A careful study of the conduct of the examinations has served to strengthen the view, which I have previously expressed, that the training of the candidates is too often defective. I trust that in the future a larger proportion of candidates will avail themselves of the opportunities. now freely afforded, of systematic training in their business. Work in Laboratories, both Chemical and Pharmaceutical, is demanded.

Major Examination.

	Numbers.	Percentages.
Candidates examined	104	—
,, who passed	51	49 0
,, ,, failed	53	51·0

	Numbers.	Percentages.
Failed in Chemistry	21	20·2
,, Physics	8	7·7
,, Materia Medica	9	8·7
,, Botany	22	21·2
,, obtaining the aggregate number of marks for a pass	14	13·5

The number of candidates shows an increase over the preceding year, but the number of candidates who passed was almost identical. The only noticeable feature is the increase in the failures in Botany, in which subject a high standard is maintained. Seeing that the passing of this examination, which may be regarded as an "honours" examination, confers certain privileges on successful candidates, it is regrettable that such a small proportion of chemists and druggists present themselves at it.

I have the honour to be, My Lords,
Your obedient servant,
(Signed) Thos. Stevenson,
Government Visitor.

March 10, 1899.

Report of Finance Committee.

The report of the Finance Committee was read by the Secretary. It was of the usual character, and recommended sundry accounts for payment.

The President moved the adoption of the report and recommendations, saying there was nothing to which he need call special attention. He was pleased to announce, however, that a donation of two guineas to the Benevolent Fund had been received from the Liverpool Students' Society, the proceeds of a collection at a smoking concert; also twenty-five guineas from Mr. Warren, being the surplus from the Chemists' Ball, and a donation of five guineas from Mr. J. B. Norwood.

The proposition was agreed to.

Benevolent Fund Committee.

Mr. Bottle moved the adoption of the report of this Committee, which included recommendations of grants amounting to £45 to the following cases :—

The widow of a chemist and druggist who died in 1878. She is no longer able to support herself. (Edinburgh.)

A former member and subscriber for over twenty years. Is now past work, and is entirely dependent upon friends. (London.)

The widow of a chemist and druggist who has had several previous grants. She is in bad health and unable to support herself. (London.)

The widow of a member and subscriber who died last month. She is in very necessitous circumstances, and has four children dependent upon her. (Grimsby.)

Mr. Bottle said none of the cases called for any comment from him. He wished to direct the attention of the Council and the members of the Society generally to an application which had been received on behalf of a child named Robert Kirkby, aged five and a half years, for admission into the Infant Orphan Asylum at Wanstead. The applicant's father died in 1896, leaving a wife and four children totally unprovided for.

The report was unanimously agreed to.

Library, School, and House Committee.

The President moved the adoption of the report of this Committee, which stated that the Librarian had presented his usual report, including the following particulars regarding attendance at the Library :—

Attendance.	Total.	Highest.	Lowest.	Average.
February	459	26	11	19

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
February	201	116	85	17*s.* 2½*d.*

The Curator's report had also been received, and included the following particulars :—

Attendance.		Total.	Highest	Lowest.	Average.
February	Day	727	44	19	29

Several donations to the Library and Museum had been received (see *P. J.*, March 11, p. 237), and the Committee had directed that the usual letters of thanks be sent to the respective donors. The Committee had under consideration the appointment of a representative of the Society on the Management Committee of the Chelsea Physic Garden, and recommended that Mr. Carteighe be appointed.

The President explained that the scheme for the management of the Chelsea Physic Garden was recently before the Council, and it would be remembered that they were asked to nominate a representative to serve on the Committee of Management. He was sure that all his colleagues would be glad to learn that Mr. Carteighe, who had had a good deal to do with the scheme, had consented to act, and that the interests of pharmacists would be quite safe in his hands. The Committee was occupied a long time with various matters of detail, but there was nothing else to which he need call attention.

The report was adopted unanimously, and a special resolution was passed appointing Mr. Carteighe the representative of the Society on the Committee of Management of the Chelsea Physic Garden.

Appointment of a Local Secretary.

Mr. William I. Scholes, of 130 Church Street, Eccles, was appointed Local Secretary in the place of Mr. Howie, who had retired.

The President, in submitting the resolution, tendered the thanks of the Council to Mr. Howie for the valuable services he had rendered to the Society as Local Secretary.

Mr. Carteighe also said that during the whole time he was President, Mr. Howie had been to the Society, not only a distinguished ornament pharmaceutically and intellectually, but he was the best type of member they had, in that he understood their work, followed it, and knew everything in connection with their educational system.

Appointment of a Divisional Secretary.

On the motion of the President, Mr. Coulson was appointed Divisional Secretary for the City of London.

Resignation of an Examiner.

The President read a letter from Mr. Thomas Maben, resigning his position as examiner. In moving that Mr. Maben's resignation be accepted with regret, he said they might well pass a resolution expressing their thanks to Mr. Maben for his services during the long period of fifteen years.

Mr. Storrar said he was sure he would be expressing the feeling of the North British Executive when he said they regretted very much Mr. Maben's resignation, The work done by Mr. Maben fully justified his nomination to the post of examiner; he was the most experienced examiner they had on the Board in Scotland, and they wished him every success in his new venture.

The President, in putting the resolution, said Mr. Maben was a member of the School Board for the district in which he resided, and took very great interest in education generally. This had been forcibly brought under his notice by the correspondence which had been going on between the Committees of the Boards of Examiners with reference to the certificates which it was proposed should be accepted after the present year in lieu of the First examination. Mr. Maben had done excellent service on the Committee representing the Board of Examiners for Scotland, and he hoped that in a short time a suggestion would be made to the Council as to these certificates. He should add that in the usual course it would be the duty of the Executive of the North British Branch to nominate an examiner in lieu of Mr. Maben for the remainder of the year.

The proposition was agreed to unanimously.

Law and Parliamentary Committee.

The President moved the adoption of the report of this Committee, which recommended that the Watch Committee be instructed to take active measures to oppose the Pharmacy Bill now before the House of Lords, and authorised to take the necessary steps for obtaining an amendment of the Companies (Medical Profession) Bill, which should include in the Bill all pharmaceutical chemists and chemists and druggists. He

said that, within twenty-four hours of receiving copies of the two Bills referred to, he summoned the Watch Committee to discuss the consideration of affairs, but that Committee came to the conclusion that under the circumstances, seeing that the House of Lords had already adjourned, it would be as well to wait for the meeting of the Law and Parliamentary Committee and the Council before taking any definite steps or making any definite statement. He hoped that report would be unanimously approved, representing as he believed it did the almost unanimous feeling of all registered persons. The Bill referring to pharmacists suggested that not only their practice, but their title should be given away. At the same time the Lord Chancellor had seen fit to introduce another Bill, called the Companies (Medical Profession) Bill, which proposed to protect the profession or business of physicians, surgeons, dentists, and midwives, by preventing those professions being carried on by companies. Going back for a moment to what happened last year, he need not refer at length to the passage of the Pharmacy Acts Amendment Bill through the House of Lords; but he might remind his colleagues that, on the first reading of that Bill, the Lord Chancellor moved an amendment to the effect that a company might carry on the business of a pharmaceutical chemist or chemist and druggist, if and so long as the business was *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, but subject, as aforesaid, Sections 1 and 15 of the Pharmacy Act, 1868, should apply in the case of a company in like manner as they apply in the case of an individual. He need not refer to the reasons which were brought before the Lord Chancellor to induce him to withdraw that amendment, but would rather refer to the remarks of the Lord Chancellor himself, in the House of Lords, when he withdrew that amendment.

The Lord Chancellor's Reasons.

It appeared from the report that there were two or three reasons which influenced the Lord Chancellor in withdrawing the amendment. One, which the Society laid special stress upon, was that the amendment was not germane to the general purpose of the Bill, and that seemed to have had some weight; but there were two others, one that the amendment would not apply to Ireland, and the other, on which his Lordship appeared to lay most stress, was that the amendment would be inoperative unless there were a very considerable amount of machinery introduced into the measure in the way of registration. Now in the Bill just introduced these same objections held good. After months of consideration his Lordship had not provided any machinery whatever for carrying out what he proposed. The Bill not only went the length of the previous amendment, but went much further, and actually gave away the titles which, in their opinion, should only be accorded to natural persons, capable of being educated and examined. He had referred before to the interview he had with the Lord Chancellor shortly after the passage of the Pharmacy Acts Amendment Act last year, but had always been anxious not to say too much about it, for fear of misrepresenting in any way what passed. He could only say that he came away with the impression that the Lord Chancellor was willing, even more than willing, that the Council should send to him their ideas of what should be the basis of future legislation. His Lordship, also, he was bound to say, impressed him with the idea that it was very important that no suggestions should be sent which were not of a fairly practicable nature and which would not receive a considerable amount of support in Parliament. Another idea he gathered was that in the opinion of the Lord Chancellor prescribed medicines should be prepared or dispensed only by qualified persons.

After considerable thought the suggestions to which allusion had frequently been made were sent to the Lord Chancellor. It had been argued by some persons that those suggestions were not of a practical character and were likely to meet with considerable opposition in Parliament. Other professional bodies with whom they had been working for some years—beginning to feel the injustice of a certain historic decision given by the House of Lords—had approached the Lord Chancellor and asked him to protect their titles and their practice, and it appeared to him that chemists were equally justified in appealing to the Lord Chancellor to do for them what he found practicable to do with regard to the other professions. The action of the Council had been much criticised, and remarks had been printed which would lead their readers to think that he and his colleagues were utterly foolish and impractical persons; but he maintained that the line taken was the right one, the one which ought to and would receive the support of 90 per cent. at least of all qualified persons. The opportunity was taken of acquainting the Lord Chancellor with the opinion of the great majority of registered men. He had always said that in his belief no considerable alteration in pharmaceutical law would be effected until two factors were combined, one the support of the Government for the time being, and secondly, the support of their own body. The Council's suggestions would undoubtedly receive the support of the majority of those on the Register, and as such they were sent to the Lord Chancellor, in the hope that he would see that they were also in the interests of the public. He had apparently found no difficulty in protecting the other learned professions, and though he (the President) was quite willing to believe that there were points of difference between their calling and that pursued by the medical professions, still the underlying principle was undoubtedly the same.

The Necessity of Defending Titles.

He wished to say there very distinctly, and should like to say it also to the Lord Chancellor if he had the opportunity, that their titles were equally dear to chemists as the titles of medical men and dentists were to them. He did not know whether the Lord Chancellor was aware of the training that was necessary for a man to get on the Register. It was the Parliament of 1868 which made it compulsory in the interests of the public that all persons calling themselves chemists and druggists or pharmaceutical chemists, who should sell strong drugs and poisons, should be qualified by an examination, which should be evidence of some kind of training. After the lapse of thirty years the Register was more and more filled with the names of those who had passed through the necessary training and had undergone examination. The proposition of the Lord Chancellor now before the House of Lords was one with which he could have no sympathy—in so far, at least, as it gave away the title of the individual. It might be that in the future some practical suggestion would have to be made with reference to dealing with the question of company trading. He was inclined to think that at the present time the factor to which he had already alluded, namely, the registered qualified men, were not ready to accept anything less than the principles underlying the suggestions which had recently been made to the Lord Chancellor. He thought it was quite possible that at some future time some different condition of things might be forced upon them, owing to the force of circumstances, but when that time came, he hoped that at least the titles would be reserved to the individuals who had the legal right to them. In any suggestions which would be made in future, it would be most necessary that there should be very strong and stringent regulations as to the carrying on of business by companies of all descriptions. It was curious to notice that in the Bill affecting pharmacy now before them there

seemed to be no definition as to what a company was, whereas in the Medical Bill there was some definition of the word "company."

Relations with the Irish Society.

He had received one or two letters from the President of the Pharmaceutical Society of Ireland, and he wished to say publicly that he was sure the Council had every desire to act in accord with that Society, and the lines on which the Council had already proceeded were such as he in his innocence had thought could not but be as acceptable to qualified persons on the other side of St. George's Channel as to those on this side. If it ever came to a question of giving up that principle to which he had referred, then he thought it would be advisable that some kind of joint action should be taken by the two Societies. It was always difficult to get in close relationship on such matters through the post, and he was bound to say that in taking the steps which the Council had taken it had not done anything antagonistic, but, on the contrary, what it thought would have the hearty support of every registered person in Ireland. He knew that the point which was included in their suggestion, viz., the exclusive right of dispensing medicines, had been called in question, but he was glad to think that their Irish brethren had that right to a large extent. Considerable liberty was left to the Watch Committee, with the instruction that it should take active measures in the way it should consider best, whether in the House of Lords or the House of Commons, to oppose the further passage, as far as possible, of the Pharmacy Acts Amendment Bill, and at the right time, when thought advisable, to get an amendment to the Companies (Medical Profession) Bill, which should include all pharmaceutical chemists and chemists and druggists.

The Position in 1868 and Now.

While the Council believed the Legislature did not contemplate in 1868 the existence of limited companies carrying on business as chemists and druggists, and while it believed that the Legislature did intend that those who kept open shop for the sale and dispensing of poisons should have a qualification, still the Council had to regard matters now as they were under the judgment of the House of Lords, and there was no doubt that if the Council's suggestions had been put into the form of a draft Bill they would have met with a very large amount of opposition from existing companies. The suggestion was now being made that company trading in pharmacy should be allowed to continue, provided every managing director was a qualified chemist. In his opinion that suggestion was quite impracticable; he did not think that the large stores in London, because a small portion of their business happened to be pharmacy, would be willing to have seven chemists and druggists directors of their concern. In his opinion there was nothing but going for what they had gone for, or for some kind of regulation of company trading, supposing Parliament did not see its way to stop company trading in pharmacy. They had received a number of resolutions from different bodies with reference to the proposals of the Lord Chancellor. These had only just come to his hands, but he understood they were practically all of them requesting the Council to oppose the Bill now before the House of Lords. Letters had been received on these lines from, among others, the North-East Lancashire Association, Forfarshire and District Chemists' Association, Sunderland, Oxford and District Chemists' Association, Exeter Association of Chemists and Druggists, and the Newcastle-on-Tyne and District Chemists' Association. In conclusion, he had to report the receipt from Mr. Macpherson, of Edinburgh, of a very carefully drawn out draft Bill, which he suggested should be handed over to the Law and Parliamentary Committee for consideration.

The VICE-PRESIDENT seconded the proposition. It was unnecessary that he should say much about it, because he was sure it would pass unanimously, and that the Council would have the support of the chemists throughout the country in the action the Council was taking. When he first saw the Bill in the Press he was rather inclined to think that it was a joke. He would ask them to imagine what would happen if other professions were put on the same basis as it was proposed to put chemists and druggists. He did not think it necessary to go into the question in any detail, because the President had so ably covered the ground, and if his remarks were read, as he hoped they would be, by all chemists in the country, he was sure they would all rise to the occasion and prevent the Bill passing.

Mr. ATKINS heartily supported the motion. He was prepared to accept his share of the responsibility for the suggestions that had been transmitted to the Lord Chancellor. He had no objection to opposition. They had been informed on good authority that a strong opposition was essential to a good Government; and he had no objection to criticism, which was the very life and salt of public life, but he thought criticism should be fair and honest. With regard to the proposed Bill it might either be amended or ended, but in his opinion they could only end it, for it was not worth amending. They had asked the Lord Chancellor for bread, but he was giving them a stone. There might not be very much left to them but their title, but even if that were so, let them fight for that to the last. The title of chemist and druggist was a monetary possession as well as a social one. He did not think it would require very much effort on their part to end this Bill. The present Government had shown marvellous capacity for yielding, and he was sure it could be induced to yield again, and if the pressure were wanted it would be forthcoming. They had been told in days gone by that they were much too mealy-mouthed, and that they had sent in suggestions for Bills which were not worth having, and were advised to go for a big Bill. If they had to yield their privileges in the future let it be understood that they did not surrender from within. They were a set of educated, examined, and registered men, and he could not understand why they were the only men in the country who had not the slightest atom of professional protection. They ought to have it and they had demanded it, and how in the name of conscience and common sense a profound lawyer and statesman could have ever delegated to any adviser the drafting of a Bill which took from them that which they contended was their right he could not understand. In the result he had no doubt that the Bill would be withdrawn.

Mr. HARRISON was very much indebted to the President for placing the case before them in the way he had done. He believed that when the speech was read it would be found that the whole of the men engaged in their craft would realise the gravity of the crisis through which they were passing, and would approach it with the same spirit of determination as was evinced by the Council. It was perfectly plain on the face of it that it was not a measure they could consider in any way; it was not capable of amendment, and their only desire could be to end it entirely. It was a painful thing, when they found themselves face to face with a crisis of this kind, that there should be those who would throw blame on the Council and say, "You yourselves are responsible." Whatever action the Council might take, or in whatever way, to refrain from taking action, it was represented to be in the wrong. As the President had shown, the Lord Chancellor applied to the Council for suggestions for a Pharmacy Bill, it did not send the Lord Chancellor a Pharmacy Bill; it had been pointed out that there were certain grave defects in the Pharmacy Act of 1868,

and the Lord Chancellor attempted to deal with them a year ago, but his amendment at that time seemed totally inadequate. He was told so, and apparently he saw it. What was their duty when they were asked for suggestions? They were experts in this matter, and if anybody ought to know the defects in the pharmacy laws surely it was themselves, who were engaged in carrying them out. Their duty was to point to the ideal legislation, leaving it to others who had greater experience in legislation to determine what was practicable. They were told that they had brought forward a Bill involving such great issues that they courted failure; but he said that the Council would have failed in its duty if it had failed to place before the Lord Chancellor a full statement of their grievances, and the means by which they desired to remedy them. They had lost their practice for a considerable time, but they were determined to cling to their titles, which had been left to them. He trusted that tho voice of the Council would be absolutely unanimous, and, whether the Watch Committee proposed to oppose this Bill in the House of Lords or Commons, that all action would be prompt and decisive, and further, that the country would so far come to their aid that they would bring such pressure to bear on their representatives that the Bill now before the House of Lords should be relegated to that obscurity which it deserved.

Mr. Rymer Young said it was not his intention in the slightest degree to retract a single word which he had said or written during the last few months in connection with this matter. To some extent the position was an anomalous one, and was not unlike that of the early Christians who were thrown into the arena to be devoured by wild beasts. The Christians appealed to Cæsar against the horrible cruelty of their rulers, but without any good effect, because Cæsar, however honourable a man, was also a Roman. Their misfortune was that they had been appealing to a modern Cæsar, who, according to a statement he had seen, was also a Roman. The severity of the rebuff the Council had received did not, however, in any way alter the validity or strength of its position. Although it might be regarded in some quarters as indicating an insiduous form of mental aberration, he contended that there was nothing unreasonable in demanding that the meaning which was attached to the Act in 1868, and for some time after the Act passed, should be restored. He was glad to see that there was a unanimous determination to oppose that monstrosity—the Lord Chancellor's Bill. It might even be necessary to go farther, and if there were any insuperable difficulty put in the way of including chemists amongst doctors and midwives in the other Bill, to oppose that Bill also.

Mr. Bottle said he should be sorry to leave without tendering to the President his sincere thanks for the able exposition he had given of the position. Personally, he should do all he could to support the views he had enunciated, and so would the Dover Society, which had only been awaiting to receive the cue from the Council. He would point out that while the Lord Chancellor professed that his object was to put companies in the same position as the widows of chemists and druggists, the cases were really very different; it was the duty and interest of trustees and executors to wind up a concern as quickly as they could, but a company would want to go on as long as possible—practically for ever.

Mr. Cross wished, on behalf of country members especially, to thank the members of the Watch Committee for the action taken in this matter. It showed the necessity for having a good strong contingent of London members on the Council, who were on the spot and ready to render the help which was necessary when an emergency arose.

Mr. Storrar said the suggestions for a draft Bill which were sent to the Lord Chancellor were adopted at a meeting at which he was not present, and he was not sure that he should have been prepared to approve them in their entirety. Two lessons, at least, might be learned from their communications with the Government and the Lord Chancellor; first, that they need not look to Parliament or the Government for anything in the way of protection; and, second, that the only argument which could be used in favour of an amendment of the law was that it was necessary for the safety of the public. The draft suggestions, if looked upon as a Bill which might be introduced as it stood into Parliament, he should certainly not support, because he believed there was not a ghost of a chance of its being carried. He simply looked on these suggestions as an attempt—and a successful attempt—on the part of the Council to formulate the opinion of the trade with regard to future legislation. But if they went to Parliament there was no possible chance of taking up the position they occupied in 1868; they must look forward, not to putting down company trading, but to controlling it. He was pleased to find that the Council appeared to be unanimous in deciding to oppose resolutely this Bill of the Lord Chancellor. By the Act of 1868 they were told that in the opinion of Parliament it was necessary for the public safety that certain poisons should only be distributed by examined men, and the public were told that these examined men would be known by the fact that they traded as pharmaceutical chemists or chemists and druggists. They had loyally acted up to the spirit of that Act, and he was quite sure the public were safe in concluding that where they saw either of those descriptions over a shop there was within a man more highly educated and fit to do his work than was the case thirty or forty years ago. It had been left to the highest legal representative of the Government to suggest that the protection given by the Act of 1868 should be abrogated and that that appellation need no longer denote an educated and qualified man, but simply one who had taken advantage of the Companies Act to trade as a chemist, though unqualified. That was quite enough to justify a determined opposition to the Bill, and if determined, he was quite sure it would be successful.

Mr. Allen said the President had already said all that need be said on this matter, but he might add that the Watch Committee, at its first meeting, within twenty-four hours of the Bill in question being printed, was unanimous in feeling that it must be opposed to the utmost, though no actual steps need be taken until the meeting of the Council.

Mr. Warren wished to make one remark with regard to Mr. Storrar's statement that legislation could only be hoped for when it was shown to be in the interest of the public. They believed most heartily that it was in the interest of the public that pure pharmacy in a professional spirit should be maintained. The present Council was trustee for all the labours of the past, which had tended to promote professional pharmacy, professional ethics, and so on. They all felt that the only ideal way of doing that was to require that the proprietor of every pharmacy should be a qualified pharmacist, and responsible for its management.

Mr. Park said there was one point which had not yet been mentioned. If this Bill became law he believed it would be very dangerous to the public, because it would reduce the profession to mere commercialism. Eventually the system of store trading would strangle the pharmacist, who was not only a commercial man, but was also morally responsible to the public, and frequently to his own disadvantage stood between the public and an injury to their own health. There were many dangerous drugs which were capable of abuse, and if the business were reduced to pure commercialism, such abuses would be more frequent.

Mr. Carteighe said he did not intend to speak on the main question, which had been pretty well thrashed out, and he did not think their brethren in the country really needed much encouragement to do what was necessary to kill this Bill. He wished to express his sympathy with the President in his position with regard to the Lord Chancellor, to stiffen his back a little and to encourage him. In time past he had had a good deal of experience of communications with Government, and might perhaps have got a little pachydermatous; but he must say that, in his judgment, no President of the Society had ever been treated so curtly by any member of the Government as the President had been treated by the Lord Chancellor. After a direct request, following an interview, to formulate suggestions, and after receiving those suggestions, which were simply acknowledged, he thought that, before introducing a Bill which was directly in the teeth of those suggestions, the Lord Chancellor should at least have sent for the President, told him what he was proposing to do, and had some further conference with him. The Council did not go to the Lord Chancellor or to any member of the Government for the purpose of pure protection; the protection of the public was the essential thing in any Act of Parliament, but if in protecting the public some advantage was conferred on those who exercised the professional calling concerned, that was always held to be legitimate. He could only say with regard to this Bill that he thought the Lord Chancellor had in his mind that he represented the law lords who had given that unfortunate judgment nearly thirty years ago, and thought he would facilitate the work of his brethren on the bench and future law lords in dealing with similar cases if language were used which would enable them to come to a conclusion without any difficulty. Like his colleagues on the Watch Committee he felt from the first that this was a Bill which could not be amended, that there was no chance of getting any constructive legislation by attempting to amend it; it must be got rid of first, and then a beginning must be made *de novo*. Their friends in Ireland seemed to forget that their privilege was confined to dealing with poisons; they had no privilege of compounding prescriptions as was the case in Ireland, and he feared the Lord Chancellor was under the same misapprehension. It was for this reason that the question of title was all-important. There was a difference which any reasonable person could see between the question of practice and the question of title. He should be very sorry if the Bill with regard to the medical profession and dentists and midwives were rejected, but it was plainly their duty to endeavour to amend it by including pharmacists, and if that were impossible it must be opposed.

The President, in putting the resolution, said he was very glad to find that the Council was so unanimous. He thanked Mr. Cross, on behalf of the Watch Committee, for the remarks he had made. It was only reasonable perhaps that those who lived in London should have a great part of the emergency work to do, which they were very glad to do. He also wished to thank Mr. Allen for what he had said. He thoroughly agreed with Mr. Harrison when he said that their duty was to lay before the Lord Chancellor the ideal and leave it to others to say what was practicable. The other aspect of the case had been put very forcibly by Mr. Storrar; and between the ideal and the thoroughly practical it might be that in the course of time some means would be found of getting them out of a position which he made bold to say at the present time was almost unbearable. He confessed he was continually disgusted at the way in which he, as President, had to act in the matter of prosecutions, and he thought the time had now come when the condition of things should be in some way altered. The Council was continually prosecuting persons who were more sinned against than sinning. They could not get at the real sinner, and he did think the time was come when some step should be taken to put an end to a condition of things which, in his opinion, was disgraceful.

The resolution was then put and carried unanimously.

Correspondence.

Mr. Carteighe, by request of the President, said he had received a letter from the secretary of the London University Commission, who said that he should have great pleasure in laying the claims of the Pharmaceutical Society before his Committee in due course. During his term of office as President the Council had taken steps to be associated with the new teaching University of London, and he believed the Society was now in a position to be one of the teaching bodies of the new University. They hoped to have such facilities at the University as would enable their students, if they felt disposed to take a degree at the University of London, to qualify from the Society's curriculum. Such a scheme would probably involve a total change in the examinations; that is to say, if a man was coming up for the qualification of chemist, he would of course take his botany and chemistry in his University examination, and would not be examined in them again. If they succeeded in this matter it would be a potent help to the advancement of pharmacy.

The President announced that a letter had been received from the Foreign Office, enclosing a translation of a law by which all persons who graduated as chemists in a pharmaceutical university, or who had obtained an apothecary's licence in a foreign country, on the production of such licence, would be able to obtain a licence to practise in Japan without passing a further examination. A letter had also been received from Melbourne, enclosing a copy of the 'Pharmaceutical Register of Victoria.'

Report of Examinations in Scotland.

	Candidates.		
	Examined.	Passed.	Failed.
Minor Examination	134	55	79

General Purposes Committee.

The report of this Committee included reports from the Professors on the Prize Examinations. Professor J. R. Green reported very favourably of the work done by his class, two-thirds of whom competed for the Silver Medal. Professor Norman Collie and Professor Greenish also sent in reports, and in accordance therewith the Committee recommended the following awards:—

Botany.

Silver Medal ..... Thomas Edward Wallis.
Certificates of Honour ..... Frances Magan (Miss). William Garsed.

Practical Chemistry.

Silver Medal ..... William L. Nundy.
Certificates of Honour ..... George Pattison. Thomas Edward Wallis.

Theoretical Chemistry and Physics.

Silver Medal ..... Thomas Edward Wallis.
Certificates of Honour ..... Herbert Payne. William James Spurway.

Materia Medica.

Silver Medal ..... Herbert Payne.
Certificate of Honour ..... Thos. Ed. Wallis. Wm. Garsed.

The President moved the adoption of this portion of the report and recommendations, and that was agreed to unanimously.

The Council then went into committee to consider the legal portion of the report. On resuming, the report and recommendations were adopted, and a resolution was passed authorising the Registrar to institute proceedings against certain persons named.

EXAMINATIONS IN EDINBURGH.

April, 1899.

MINOR EXAMINATION.

Candidates examined	134
,, failed	79
, passed	55

llan, Edward Cross
Allison, Joseph William Woodman
Anderson, Alexander
Anderson, David Smith Bruce
Bailes, Arthur Thomas
Baillie, James
Banks, George
Barrie, Joseph
Bates, Henry James
Bell, William Wallace
Berry, John Cuthbertson, junr.
Binks, Thomas Coates
Boyack, William Smart
Burr, Patrick
Caird, James
Cox, Thomas Finchett
Davidson, James
Davie, John Scott
Davies, Thomas Benjamin
Dixon, Charles John
Duncan, David Draper
Gilmour, Andrew Brown
Glen, Arthur Guthrie
Gray, William Robert
Grierson, George
Hardern, Arthur Ernest
Hare, Charles
Hay, George William
Hendry, Alexander Wilson
Husbands, Herbert Henry
Laurie, James Alexander
Macintyre, John Hoyes
McMillan, David
Macsween, Alexander
Marr, Archibald
Marshall, Alfred George
Mitchell, William Dunbar
Moss, Arthur
Nicholson, Malcolm
Nimmo, James Henry
Paris, William
Paterson, George Derwent
Robertson, William
Robinson, Joseph, jun.
Robson, William Taylor
Scott, Samuel
Skinner, James Auld
Stewart, Charles
Thomson, John Thorburn
Townley, Thomas Thwaites
Traub, Leonard Bocking
Walker, Henry
Walker, John Philip
Wilson, William Smith
Young, Charles

MAJOR EXAMINATION QUESTIONS.

Thursday, April 6, 1899—from 10 till 1.

CHEMISTRY.

Six questions only are to attempted ; of these, at least two must be taken from Part II.

PART I.

1. What do you understand by the terms empirical and molecular, respectively, as applied to a formula? State the data required in order that (*a*) an empirical formula, and (*b*) a molecular formula, may be assigned to a substance ; and explain how these data are employed.

2. How could you prepare cupric chloride, starting from each of the following substances :—(*a*) Cupric sulphate ; (*b*) cupric oxide ; (*c*) cuprous oxide ; (*d*) copper ?

3. What is the source of the pyridine commonly present in commercial solution of ammonia ? How could you obtain a pure solution of ammonia from a commercial sample containing pyridine ?

4. Describe carefully the production, on the manufacturing scale, of any two of the following :—Sodium thiosulphate, calcium carbide, chloral hydrate, potassium cyanide, morphine, aluminium.

5. 0·4 gram. of pure potassium nitrate is decomposed in a nitrometer in the usual manner. What volume of dry gas, measured at 15° C. and 740 Mm. should be obtained ?

6. What impurities would you expect to find in a sample of crude iodine, and how would you test for them and remove them ? Starting from iodine, describe exactly how you would prepare (*a*) hydriodic acid ; (*b*) iodic acid ; (*c*) mercuric acid ; (*d*) potassium iodide.

PART II.

7. Give the graphic formulæ of the alcohols of the molecular formula $C_5H_{12}O$; class them into three groups according to their chemical behaviour and state the basis of your system of classification.

8. Describe the chief physical and chemical properties of glucose or grape sugar.

9. What methods may be employed in order to substitute the hydroxyl-group for a hydrogen atom in organic compounds ? Give examples and equations.

10. Give two methods by which benzaldehyde can be obtained ; describe the properties and more important reactions of this compound, giving equations.

Thursday, April 6, 1899—from 2 till 5.

PHYSICS.

[*Six questions only are to be attempted.*]

1. Describe Wollaston's Cryophorus, and explain its action.

2. What are the chief products formed at the positive and at the negative electrodes respectively during the electrolysis of each of the following substances :—Dilute solutions of (*a*) sulphuric acid ; (*b*) potassium sulphate ; (*c*) ammonium chloride, and (*d*) a concentrated solution of potassium acetate ?

3. Describe experiments in support of the statement that good radiators are good absorbers of heat How do you account for the fact that the Earth's surface cools more rapidly on some nights than on others ?

4 Explain carefully one method whereby the velocity of light may be obtained.

5. Describe the construction of a balance intended for accurate weighings. Explain a method of obtaining the true weight of a body when using a faulty balance.

6. Describe and explain the construction of any form of direct vision spectroscope.

7. Explain the difference between a saturated and a non-saturated vapour. Describe a method for measuring the pressure of saturated water vapour at a temperature of 50° C.

8. State the optical phenomena upon which the determination of the strength of an aqueous solution of cane sugar depends ; and explain how the determination is carried out practically.

PRACTICAL BOTANY AND MATERIA MEDICA (B).

Friday, April 7, 1899.—Time allowed, Three hours.

BOTANY.

1. Make transverse and longitudinal preparations to demonstrate the structure of specimen A.

2. Refer the specimen B to its natural order, giving your reasons for the position to which you assign it.

3. Comment on any morphological peculiarities exhibited by the specimens C and D.

MATERIA MEDICA.

1. Prepare and leave for inspection transverse and longitudinal sections of the Cusparia Bark provided. Sketch and describe your preparations, pointing out any special histological characters present which may assist in the identification of the drug.

2. Is the powdered Cusparia Bark genuine or adulterated ? State your reasons for the opinion expressed.

PRACTICAL BOTANY AND MATERIA MEDICA (A).

BOTANY.

1. Make preparations to demonstrate the structure of specimen A.

2. Dissect the specimen B sufficiently to show its naked-eye structure. Name the parts by means of flag-labels.

3. Refer the specimens C and D to their natural orders, giving the reasons in each case.

MATERIA MEDICA.

1. Prepare and leave for inspection transverse and longitudinal sections of the Cascara Bark provided. Sketch and describe your preparations, pointing out any special histological characters present which may assist in the identification of the drug.

2. Is the powdered Cascara Bark genuine or adulterated ? State your reasons for the opinion expressed.

BOTANY AND MATERIA MEDICA (A).

Friday, April 7, 1899.—Time allowed, Three hours.

BOTANY.

1. Enumerate the *distinctive* features of—

(*a*) Angiosperms and Gymnosperms ;
(*b*) Dicotyledons and Monocotyledons.

2. What conditions must be fulfilled before a seed will germinate ? Explain clearly and concisely the importance of each condition.

3. Write an account of (*a*) vegetative propagation, and (*b*) sexual reproduction of Mosses. Describe in each instance the organs that are concerned in the process.

MATERIA MEDICA.

1. Describe fully and explain the steps in the official process for the determination of Morphine in Tincture of Opium.

2. What is the nature and composition of the following bodies : Cineol, Safrol, Citrene, Phellandrene and Tannin ? In what official products do they occur ?

BOTANY AND MATERIA MEDICA (B).

BOTANY.

1. Give an account, with explanatory drawings, of the structure of a Dicotyledonous root as seen in transverse sections. How does such a root increase in thickness ?

2. State and explain as fully as you can how starch is formed in—

(*a*) Green leaves ;
(*b*) Underground tubers.

3. Explain what is meant by *Heterospory*, and mention the groups of plants in which it occurs.

MATERIA MEDICA.

1. Describe fully and explain the steps in the official process for the determination of the alkaloids in liquid extract of Ipecacuanha.

2. Name the commercial varieties of Gum Arabic ; describe the more important ones and mention the chief points of difference between them. How would you proceed to determine whether a given sample was of the official variety or otherwise ?

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—VIII.

Mollusca.

The molluscs include a large number of animals which may be roughly represented by three types, the mussel or oyster (class Pelecypoda), the snail or whelk (class Gasteropoda), and the cuttlefish (class Cephalopoda). They are related to the worms in a different direction from the Arthropoda, the larval mollusc bearing a distinct resemblance to the larval form of many worms, but no adult mollusc shows any trace of metameric segmentation. In the Pelecypoda there is no differentiation of the body into a head and trunk, but gasteropods and cephalopods have a well marked head.

With few exceptions the numbers of this sub-kingdom bear shells. The mussel and oyster are enclosed in bivalved external shells, the snail and whelk in a shell having a single valve, and which is a curved structure. The cuttlefish possesses a flat internal shell. The shell of the oyster (*Ostrea*) and the snail (*Helix*) is composed of three layers, consisting partly of calcium carbonate and partly of a peculiar substance, conchiolin, allied to chitin. The inner or mother of pearl layer is secreted by the whole surface of the outer fleshy coat, the mantle, and the two outer layers by the edges of the mantle. The hump or umbo on the one type of shell and the apex of the other mark the original points of growth. In the cuttlefish (*Sepia*) the shell is a leaf-shaped plate lying on the dorsal side immediately under the mantle, and consists of laminæ of calcium carbonate and phosphate intersected by air spaces and covered by a thin layer of harder chitinous material. The outer surface of this shell, which is the well-known article of commerce, is the convex surface.

The valves of Pelecypoda, which are naturally kept open by means of an external elastic ligament, are closed by means of adductor muscles, in the mussel two, in the oyster one, crossing from valve to valve, the number and size of these muscles form one of the bases on which the class is sub-divided. The twisting of the shell in many Gasteropoda is due to the unequal growth of the animal, one side growing faster than the other.

An important organ in the mollusc is the foot. This in Pelecypoda is a fleshy tongue-shaped body, capable of being protruded and retracted by means of special muscles. In some of the Gasteropoda the foot is largely developed, and in others is modified into fin-like swimming organs. The snail moves by the undulatory contractions of the muscular tissue of the foot, and in most cases these feet bear mucus secreting glands. In *Sepia*, the foot forms part of the head, and is modified anteriorly into a number of suckers bearing arms situated round the mouth and posteriorly into a funnel-shaped entrance into the mantle cavity.

Sepia is a far more highly organised mollusc than either the mussel or the snail. In the lower forms the eye may be absent or comparatively rudimentary, but in *Sepia* it is a large organ, showing a structure comparable with that of a vertebrate animal. The nervous system is far more complex, the ganglia in the head being encased in a skull-like cartilaginous chamber. In the simpler molluscs the body-cavity is represented only by the pericardium or chamber containing the heart, but in *Sepia* it is large and divided into two parts by a constriction, the anterior part being the pericardium, and the posterior containing the reproductive organs. The Pelecypoda have no accessory reproductive organs, and in some cases hermaphroditism occurs. Several curious special organs occur amongst molluscs. In many, *Sepia* excepted, there occur at the bases of the gills peculiar structures known as osphradia, by means of which the animal tests the quality of the water it is inhaling. *Sepia* possesses an ink sac, a glandular bag lying under the body wall, which secretes the black fluid known as sepia, and discharges it in the region of the anus, thereby rendering the water in its immediate neighbourhood cloudy and itself invisible to enemies.

EXPLANATORY NOTES ON THE B.P. 1898.

Cera Flava.—The tests for this substance have been considerably amplified and improved. The specific gravity is now stated to be 0·960 to 0·970. Any beeswax below 0·960 is probably adulterated with paraffin wax. In taking the melting point the capillary tube into which the liquefied wax has been introduced is to be set aside for three hours before being used for the melting point determination. If the melting point be taken immediately after solidification in the capillary tube the observed value varies considerably for the same sample, and is lower than the constant value observed for wax which has been allowed to stand some time. The quantity of potassium hydroxide required for neutralisation is a measure of the cerotic acid present.

$$\underbrace{C_{26}H_{53}COOH}_{410} + \underbrace{KHO}_{56} = C_{26}H_{53}COOK + H_2O.$$

From this equation it is seen that each C.c. of N/1 KHO solution, containing 0·056 gramme KHO, will neutralise 0·410 gramme of cerotic acid. Hence 1·6 C.c. N/1 KHO solution indicates 0·410 × 1·6 = 0·656 gramme free acid in the 5 grammes of beeswax taken for analysis, equivalent to 13·12 per cent. If now an excess of alcoholic potash solution (20 C.c.) be added and the mixture boiled for one hour under a reflux condenser (to avoid loss of alcohol) the myricin (myricyl palmitate) will be saponified.

$$\underbrace{C_{15}H_{31}COOC_{30}H_{61}}_{676} + \underbrace{KHO}_{56} = \underbrace{C_{15}H_{31}COOK}_{\text{Potassium palmitate.}} + \underbrace{C_{30}H_{61}OH}_{\text{Myricyl alcohol.}}$$

From this equation it is obvious that each C.c. N/1 KHO solution is capable of saponifying 0·676 gramme of myricin. When the saponification is complete the product is titrated back to neutrality with normal acid solution, so as to find the quantity of potash solution actually consumed by saponification. The pharmacopœial limits work out as follows:—

6·2 C.c. N/1 KHO	=	4·19 grammes myricin	=	83·8 per cent.
6·8 C.c. ,,	=	4·597 ,,	=	91·9 ,,

These free acid and saponification numbers are valuable factors in determining the purity of beeswax, since all the possible adulterants increase or diminish either one or the other and so alter the ratio of the two figures. The sulphuric acid test for paraffin was described in the previous series (*P.J.*, September 25, 1897), where will be found also the method by which the test is made quantitative.

Oxymel Scillæ.—The mode of preparation of this oxymel has been altered so as to avoid the somewhat prolonged evaporation required by the 1885 formula. Evaporation is objectionable because it volatilises much of the acetic acid and may damage some of the active principles of the squill. By preparing specially a stronger vinegar of squill from the same proportions of squill and acetic acid as in the B.P. formula for acetum scillæ, but using only half the water evaporation, is rendered unnecessary. This strong squill vinegar is then to be mixed with *sufficient* clarified honey to form an oxymel having a specific gravity of 1·32. The exact amount cannot be given in the formula, because it will vary with the specific gravity of the honey employed. It must therefore be determined experimentally. Genuine honey contains from 15 to 24 per cent. of water, and its specific gravity varies from about 1·415 to 1·430.

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THE COUNCIL MEETING.

At the opening of the business last Wednesday, the President referred to the death of Mr. Arthur Stephen Hill, and spoke of the continuous support he had given to the Pharmaceutical Society from the time of its foundation until at his death he left a legacy to the Benevolent Fund.

The additions to the membership of the Society amounted to 403, this bringing the number of additional members joining this year up to 1714, a result which shows that those who undertook to prophesy the Pharmacy Act, 1898, would not have the effect of adding more than two or three hundred members to the Society, did not understand the situation or the change that has come over the views of chemists and druggists in regard to the Pharmaceutical Society. The Secretary read a list of the names of the members nominated for election as members of Council, in accordance with the Bye-laws, showing that in addition to the seven members of Council who retire in May, six other candidates have expressed their willingness to accept office if elected (see p. 339).

The report and recommendations of the Finance Committee were adopted without special comment, and on the recommendation of the Benevolent Fund Committee four grants, amounting in all to forty-five pounds, were ordered to be paid. In moving the adoption of the report, Mr. Bottle drew attention to an application received on behalf of Robert Kirkby, for admission to the Infant Orphan Asylum at Wanstead (see page 340).

In the report of the Library, Museum, School, and House Committee, one of the principal recommendations was in reference to the appointment of a representative of the Society on the Committee of Management of the Chelsea Physic Garden, suggesting that Mr. Carteighe should be appointed in that capacity. That was unanimously adopted by special resolution.

Mr. W. I. Scholes was appointed Local Secretary for Eccles in the place of Mr. Howie, who has retired from that office, and the President took the opportunity offered to express the thanks of the Council to Mr. Howie for the valuable service he has rendered to the Society. Mr. Carteighe also remarked that as a member of the best type Mr. Howie had been long an ornament to the Society, thoroughly understanding and supporting its work.

Mr. T. Coulson was appointed Divisional Secretary for the City of London in the place of the late Mr. Thomas.

A letter was read from Mr. T. Maben resigning his position as a member of the Scottish Board of Examiners, and in moving the acceptance of his resignation, the President proposed that the Council should express regret and thank Mr. Maben for the services he has rendered for the last fifteen years. This was seconded by Mr. Storrar, who spoke of the work done by Mr. Maben as having justified his nomination on the North British Executive.

The report of the Law and Parliamentary Committee briefly recommended opposition of the Pharmacy Bill now before the House of Lords, and that the Watch Committee should be authorised to take steps necessary for that purpose, and also for obtaining amendment of the Companies (Medical Profession) Bill, so as to include pharmaceutical chemists and chemists and druggists in that Bill.

In moving the adoption of these recommendations the President gave a *résumé* of the steps taken subsequent to the receipt of the two Bills above referred to, and expressed his opinion that the report of the Committee conveyed the general feeling of all persons registered under the Pharmacy Act, inasmuch as the Bill relating to pharmacists proposed to take away not only their practice, but also their titles, while at the same time that relating to physicians, surgeons, dentists, and midwives was to protect them by preventing their practice being carried on by companies. The President then referred to the amendment proposed to be moved by the Lord Chancellor when the Pharmacy Act Amendment Bill was before the House of Lords last year, and to the reasons by which he had been induced to withdraw that amendment, as stated by the Lord Chancellor—first, that the proposed amendment was not germane to the general purpose of the Bill, secondly, that it would not apply to Ireland, and, thirdly, that the proposed amendment would be inoperative without very considerable provision being made for carrying it out. The same objections apply to the Bill now introduced, for after months of consideration no machinery has been proposed for carrying out the object of the Bill. But while, in that respect, going only as far as the originally proposed amendment, the present Bill went so far as to accord to companies those titles which, in the opinion of the Society, should be used only by natural persons capable of being educated and examined. Passing on to the interview with the Lord Chancellor shortly after the passing of the Pharmacy Act, 1898, the President added that the impression it left on his mind was that the Lord Chancellor was desirous that the Council should send him its views as to the basis on which further legislation should be attempted so as to secure support in Parliament. He also gathered from the Lord Chancellor that, in his opinion, prescribed medicines should be prepared or dispensed only by qualified persons, and it was under those impressions that, after considerable reflection, the draft suggestions had been sent to the Lord Chancellor. In reference to the statement that those suggestions are not of a practical character, and would be likely to meet with considerable opposition in Parliament, the President pointed out

that other professional bodies, sensible of the unjust influence of a decision of the House of Lords, have asked for protection of their titles and practice, and that pharmacists are equally justified in appealing to the Lord Chancellor to do for them what he found practicable in regard to those other professions. The President further expressed his opinion that unless he and his colleagues were, as suggested by some critics of the Council, utterly foolish and impracticable persons, the action taken by the Council was right and that it would receive the support of qualified chemists and druggists. Recalling a former remark, the President said that in his opinion no considerable amendment of pharmacy law could be effected without the support of the Government and the concurrent support of the majority of registered chemists. The Council's "suggestions" would command the one factor, and they were sent to the Lord Chancellor in the hope that he would see they were also in the interest of the public. Whatever might be the difference between their calling and that of the medical profession the underlying principle was the same in both cases, and their titles were as dear to them as those of medical men or dentists. In the public interest Parliament has made it compulsory that persons calling themselves chemists and druggists and selling certain drugs should be qualified by examination giving evidence of training. After the lapse of thirty years the Register is mainly occupied by the names of those who have passed through the necessary training and undergone examination, and as the proposition of the Lord Chancellor now before the House of Lords would take away from them the titles they have earned, he could have no sympathy with it. He believed that qualified men would not now be willing to accept anything less than the principles underlying the suggestions which the Council has made for the drafting of a Pharmacy Bill. But if at some future time different conditions should be forced on them in regard to company trading, they would have to be accompanied by strong and stringent regulations that would prevent individuals from being prejudiced by misuse of the titles to which they alone can acquire a legal right.

The motion of the President was seconded by the Vice-President, who endorsed all that had been said, and most of the other members of the Council, in supporting the views put forward by the President, gave emphatic expression to their unanimous resolve to follow up the line of action recommended by the Law and Parliamentary Committee, by making the realisation of the suggestions submitted to the Lord Chancellor the object of their most strenuous endeavours, so as to effectually restore the meaning and intention of the Pharmacy Act which were comtemplated at the time when it was passed. The whole report of the discussion of this important subject, and especially the President's speech, will not only bear but require careful perusal and consideration by all members of the trade, as conveying an indication of the procedure in which the Council looks for the earnest and active support of every individual on the Register of Chemists and Druggists.

As incidental to the discussion of the Lord Chancellor's two Bills, Mr. Carteighe took occasion to remark that though long experience of communication with Government officials had rendered him somewhat pachydermatous, he could not remember any President of the Society having been treated so curtly as the President has been treated by the Lord Chancellor in regard to the suggestions sent to him at his own request.]

The correspondence brought before the Council comprised an important communication addressed to Mr. Carteighe by the Secretary of the London University Commission in reference to the application made during his Presidency, that the Society should, as an educational institution, be associated with the new teaching University of London (see page 344). Another letter from the Foreign Office enclosed a translation of a Japanese law, providing that all persons who have graduated at a recognised pharmaceutical school, or obtained an apothecary's licence in a foreign country, would be able to obtain a licence to practise in Japan without further examination.

Among the proceedings of the General Purposes Committee the reports on the prize examinations were read and adopted (page 344), and in accordance with the recommendation of the Committee, the usual resolutions were passed in reference to the institution of proceedings against persons reported to have infringed the provisions of the Pharmacy Acts.

MEDICAL MEN AND PHARMACISTS.

The abuse of Company Law involved in the incorporation of joint-stock concerns with the object of evading the operation of Acts of Parliament which, in the public interest, prohibit individuals from doing certain things, has for several years past engaged the attention of professional bodies, and not the least prominent part in the deliberations on that subject has been taken by the Pharmaceutical Society of Great Britain. So far back as December, 1895, a conference was held in the Society's London house, for the purpose of discussing the amendment of the Companies Acts then proposed. That conference was attended by representatives of the Society, by delegates representing the British Medical Association, the Medical Defence Union, the Society of Apothecaries, the British Dental Association, and the Royal College of Veterinary Surgeons. The endeavours of that conference have, so far, proved abortive, and the matter is referred to here only to show that, less than four years ago, medical practitioners, dentists, and veterinary surgeons were working hand in hand with registered chemists in an endeavour to secure a much-needed reform and amendment of laws that are acknowledged to be defective. The assembled delegates appointed a deputation to wait upon the President of the Board of Trade, they also agreed upon a clause for insertion in the Companies Act Amendment Bill, and subsequently they drafted a statement for presentation to the Parliamentary Secretary of the Board of Trade, setting forth the objects the members of the Conference had in view. Under the circumstances, therefore, it might have been imagined that the medical practitioners and dentists were prepared to stand or fall with the veterinary surgeons and registered chemists.

Events have proved, however, that such was not the case, and the Lord Chancellor's differential treatment of the claims of the different professions—as illustrated by the Bills recently introduced by him into the House of Lords—has sufficed to show how feeble were the bonds uniting the various bodies represented at the Conference. The Lord Chancellor's view of the matter appears to be that medical practitioners and dentists, with their new and unregistered allies—the midwives, ought to be protected from competition by joint-stock companies; while veterinary

surgeons are left to take care of themselves, and chemists are shown that, in the opinion of the highest law officer of the Crown, their lawfully acquired vested interests are to be infringed upon by allowing a company of unqualified persons to carry on the business of a pharmaceutical chemist or a chemist and druggist. But a further point to be noted by our readers is that the Bill introduced by the Lord Chancellor, for safeguarding the privileges of medical practitioners and dentists, has been promoted by the General Medical Council, and that two out of the three members of the committee which drafted the Bill, had attended the above-mentioned Conference at Bloomsbury Square as delegates of medical and dental bodies represented. The action of the General Medical Council, therefore, in promoting this Bill can be viewed in no other aspect than as involving a deliberate sacrifice of the interests of veterinary surgeons and registered chemists. In the hope of weathering the storm by lightening the ship those two professions have been made to play the part of Jonah, so that medical practitioners and dentists might have their reward by receiving the preferential patronage of the Lord Chancellor for their Bill.

That this view of the case is in nowise exaggerated is proved by a leading article in last week's *British Medical Journal*. It is there remarked that the Lord Chancellor's Bill is simpler and more decided in the line which it takes than the amendment to the Companies Act Amendment Bill proposed by the late Lord Herschell, "for that amendment endeavoured to deal with the questions of medicine, dentistry, and pharmacy in a single clause, so that," as the *British Medical Journal* regards the matter, "the failure to obtain the insertion of a clause in the Companies Bill has, in the long run, been extremely beneficial." Again, the strength of the present Bill is said to be largely due to the fact that the Lord Chancellor has recognised that, although the several occupations interfered with by the application of the Companies Acts to other than "lawful purposes" have points of close similarity, there are "differences and difficulties in the case of pharmacy arising from trade operations" which do not exist in the case of medicine and dentistry. No attempt is made to explain wherein the case of a company carrying on the business of pharmacy by the aid of a registered chemist, differs from that of a company practising medicine or dentistry by the aid of a registered medical practitioner or dentist. The fact of the matter is that no such explanation is possible, for the cases are identical in every respect. If, from the point of view of public interest, it is of no consequence who reaps the profit in one instance, neither is it in the others, and so far as the safety of the public is concerned, that would be as well protected in the case of the trading company practising medicine or dentistry through the agency of a qualified employé, as in the case of a similar company carrying on the business of pharmacy. Apparently, however, chemists and druggists must face the fact that the medical and dental professions, or a certain important section of them, have now openly joined the ranks of their opponents. That fact must be constantly borne in mind when any Bills affecting medicine and dentistry are passing through Parliament, and if any steps taken by chemists should prove detrimental to the interests of those who should be their natural allies, the consequences must be borne by the leaders of the two professions who have chosen selfishly to ignore claims of which they should have been amongst the most prominent supporters.

ANNOTATIONS.

Dr. Stevenson's Report, as Government Visitor, on the Pharmaceutical Society's examinations for the year ending March 31 last (see p. 339), cannot be regarded as a particularly encouraging document. With regard to the Preliminary examination, the days of which are now numbered, it shows that the percentage of failures (54·5) was rather higher than for the previous year (52·1). Arithmetic again proved the most difficult subject, and English that in which candidates were best prepared. The results are said to show how large a number of men fail on the threshold of their business career, through lack of a good elementary education, but, presumably, the proportion of failures will be much greater when the Preliminary is abolished, after August next. But what becomes, and will become, of all the rejected candidates? Many, doubtless, enter for examination repeatedly and sooner or later manage to satisfy the examiners, but there must be a certain number who never pass and who drift into the ranks of the permanently unqualified. The fact of the matter is that the passing of a suitable preliminary examination should be insisted upon prior to apprenticeship, and no Pharmacy Bill can be regarded as thoroughly satisfactory which does not include a clause rendering it imperative that candidates for the qualifying examination shall have been registered as students for at least three years.

The Qualifying Examination was attempted by 1190 candidates during the year just ended, *i.e.*, 277 more than the previous year. The results were rather worse, the percentage of failures having increased from 68·5 to 70·8. In materia medica and botany the proportion of failures was less than previously, but in chemistry, prescriptions, pharmacy and dispensing the proportion was greater. Though no distinction is drawn in the report between the practical and theoretical subjects, it is apparent that the practical tests are proving increasingly effective in sifting out ill-prepared candidates. As Dr. Stevenson rightly remarks, an inadequate knowledge of practical chemistry, pharmacy and dispensing is regrettable, but at the same time it is obvious that candidates possessing such inadequate knowledge are not fit to be regarded as duly qualified persons under the Pharmacy Act, 1868. Systematic training in their business is the chief lack of most of those who fail to satisfy the examiners, and more and better work in the pharmacy and chemical laboratory is the necessity of our time. It is satisfactory to note, by the way, that the percentage of those who failed to obtain the aggregate number of marks for a pass has fallen from 12·9 to 10·3 per cent.

The Major Examination Results are chiefly remarkable for the fact that the number of candidates examined during the year was about one-fourth more than during 1897-98. But the percentage of failures has increased from 40·5 to 51·0, the botany test being responsible for twice as many during 1898-99, whilst materia medica and chemistry both proved more difficult subjects than formerly. Here again there has been a notable diminution in the proportion of those who failed to obtain the aggregate number of marks required for a pass. The total number of pharmaceutical chemists added to the Register in 1898-99 was 51, as against 50 in 1897-98. The numbers who passed the Minor examination during the same periods were 348 and 288 respectively. The proportion, therefore, of pharmaceutical chemists to chemists and druggists, added to the Register during the past year, shows a distinct falling off. That result, of course, was one to be antici-

pated when membership of the Pharmaceutical Society was thrown open to registered chemists as a whole, and it is satisfactory, on the whole, to find that the actual number of candidates who enter for and pass the Major examination has not diminished.

Nervous Candidates for Examination may find it useful to act on a suggestion thrown out by the *Medical Press* on their behalf. It is pointed out that the classic indisposition engendered by the imminence of an appearance before more or less unsympathetic examiners, is apt to involve irritation of the bladder and bowels, a feeling of extreme abdominal malaise, and tumultuous throbbing of the heart, which may even be associated with faintness. This group of symptoms has been attributed to relaxation of the abdominal muscles, consequent upon the diversion of nervous energy to other parts of the economy, and that relaxation is alleged to favour the accumulation in the large abdominal veins, by gravitation, of an undue proportion of the circulating blood, provoking local plethora and coincident cerebral anæmia, while the heart beats loudly and forcibly in a mad attempt to maintain the circulation with an inadequate supply of the fluid. Assuming this hypothesis to be correct, it is suggested that the proper treatment is evidently to reinforce the abdominal muscles, for which purpose nothing answers better than a tightly-drawn belt. The instinctive desire felt by many candidates to gird up the loins by drawing the trousers strap tighter just before undergoing the ordeal, is adduced in support of the suggestion that the use of a tightly-drawn belt is worth trying by nervous candidates. "It will not, it is true, confer a knowledge of the subject which has not been acquired, but it may enable the cerebral circulation to be carried on with something like physiological lines, and thus enable the candidate to make the best use of such knowledge as he has obtained." Inasmuch as the suggested remedy for excessive nervousness is both inexpensive and applicable without personal inconvenience, pharmaceutical students who are shortly expecting to face the board of examiners at Bloomsbury Square may be inclined to try the experiment and report thereon in due course.

The New Poison Regulations require the use of bottles rendered distinguishable by touch from ordinary medicine bottles, in the dispensing and selling of all liniments, embrocations and lotions containing scheduled poisons. But much trouble may be caused to chemists and druggists if they decline to supply such preparations except in special poison bottles, especially in the case of customers who bring their own bottles and insist upon those being used. It seems advisable, therefore, to have some ready means of converting an ordinary bottle into a poison bottle by attaching to it a strip of glass-paper or something equally simple. One of the most ingenious things of the kind has been devised by Mr. W. Temple Cooper, of 66, Oxford Street, W., and a special advantage of this little appliance is that after the bottle has served its purpose as a container of poison, the warning attachment may readily be removed and the bottle left as it was originally. A circular piece of sheet tin, enamelled white and having the word "Poison" embossed upon it in red, has a short length of very fine wire attached to it. By means of this wire, the tin label can be attached to the neck of a bottle in an instant, and when any attempt is made to pour from the bottle, the label hangs in the path of the issuing liquid, thus directing attention to its presence in an unmistakable manner, as, until it is retained at the other side of the neck by one of the fingers, the liquid cannot be poured out freely. The presence of the tin labels appears sufficient, for the time being, to render bottles distinguishable by touch from ordinary medicine bottles, and as the labels can be produced at as low a price as pleated paper bottle caps, their cost need hardly be taken into consideration.

The Approaching Council Election ought to excite a considerable amount of interest, as the list of candidates affords a fair field for selection, and there are some seventeen hundred more voters than last year, so that if there be any neglected pharmaceutical interest, there should now be opportunity of obtaining representation. The whole of the retiring members of Council—Messrs. Bottle, Carteighe, Harrington, Harrison, Park, Southall, and Young—have signified their intention of standing for election again and, in addition, there are six new candidates—Mr. A. S. Campkin, C. & D., of Cambridge, who is already well known to the electors; Mr. G. C. Druce, Ph.C., of Oxford, a former examiner; Mr. Glyn-Jones, C. & D., London, of P.A.T.A. fame; Mr. J. W. T. Morrison, C. & D., formerly of London and now of Tring, the first secretary of the Galen Lodge of Freemasons; Mr. J. Smith, C. & D., the Society's esteemed local secretary at Liverpool; and Mr. R. E. Wright, C. & D., London, a chemist's assistant who proposes to represent his fellow assistants on the Council. The views of all the new candidates, with regard to pharmaceutical matters, are stated in letters received from them for publication in this week's issue of the Journal (see p. 356 *et seq.*), and those statements will doubtless be perused with interest by the members generally. It is amusing to find that two respectable trade papers—which have no connection whatever with the Society, though at times their conductors manifest a seemingly incontrollable desire to pry into its affairs—have been making strenuous efforts to discover the opinions of intending candidates for the Council, though without going the length of emulating the enterprise of the modern press interviewer. To that end, one has addressed to candidates and non-candidates alike—presumably with the idea of not missing any likely person—a series of questions, and the other a request for "a short *résumé* of your policy." Both of these officious and self-constituted inquisitors have also asked for copies of recent photographs of the persons addressed. Some, at least, of the recipients of those pathetically-worded requests appear to regard the action of the senders as an impertinent intrusion, and in any case it cannot be too widely known that the *Pharmaceutical Journal*—which goes to every voter—is open to receive and publish any communications that may be addressed to it by candidates or voters, and that no other paper circulates amongst more than a fraction of the members of the Society.

The Conference Arrangements for 1899 are gradually assuming definite shape at Plymouth, and the programme for the week commencing July 24 next promises to be an exceptionally attractive one. It is not yet settled where the headquarters are to be, but the reception and smoking concert will probably be held in the Assembly Rooms, the sessions of conference at the Law Courts, and the luncheons be served in the Corn Exchange. A dance has been suggested as an additional attraction for the ladies, and the excursions will leave nothing to be desired for interest and variety. The provisional scheme for Thursday, July 27, includes a visit to Mount Edgcumbe, the Earl of Mount Edgcumbe having consented to throw open his park and beautiful private gardens for the entertainment of the members of the Conference and their friends. Luncheon will be served in the capacious Pier Pavilion, and subsequently the visitors will be conveyed around Plymouth Sound and then up the Tamar—one of the most beautiful rivers in England. Afternoon tea will be served on board the steamers and, provided the weather proves propitious, no more enjoyable trip could well be conceived. Short

excursions, to be arranged for the Tuesday and Wednesday afternoons, will doubtless provide opportunities for seeing something of Dartmoor and other places of interest in the vicinity of Plymouth. The naval dockyards at Devonport should also prove a great attraction, and altogether there is the promise of an extremely pleasant week in south-west Devon, with its varied and beautiful scenery, exceptionally hospitable folk, and wonderful historic associations. Mr. J. Davy Turney, who is acting as Local Secretary for the Conference, appears to have matters well in hand, and he is working indefatigably with his colleagues on the local committee to make such arrangements as will be generally satisfactory.

A Deputation of Preston Chemists has waited upon the Rt. Hon. R. W. Hanbury, Financial Secretary to the Treasury, by special appointment, to lay before him the position of registered chemists with regard to the Pharmacy Bill introduced by the Lord Chancellor. Mr. Arkle briefly reviewed the course of pharmaceutical legislation in this country, and explained the position at the present time, dealing particularly with the Lord Chancellor's connection with the matter. Mr. Hanbury, in reply, confessed that his knowledge of the Pharmacy Acts was but slight, and that he had not previously known of the Bill recently introduced. But he pointed out that the fact of the Bill being introduced by the Lord Chancellor virtually made the measure a Government Bill, and as he was himself a member of the Government, his hands were to a certain extent tied in the matter. If, however, the Bill should reach the Commons, he would then see what could be done. Contrasting the remarks of the Lord Chancellor on withdrawing his proposed amendment to the Pharmacy Bill which became law last year, with the Bill now introduced and the memorandum prefacing it, Mr. Hanbury said it certainly seemed that the Lord Chancellor had "turned a somersault," and he could not understand his action at all. He quite agreed that chemists had rights and that they ought to be considered. When, if ever, the Bill was brought forward in the House of Commons, he would see the Attorney-General or the Home Secretary, one of whom would have charge of the measure, and take care that the views of chemists on the subject were made known.

Secret Commissions served the Lord Chief Justice as the text of a speech delivered before the London Chamber of Commerce on Tuesday last. He pointed out that the evil of commissions existed even in the learned professions, and sometimes solicitors and medical men were concerned. Those were the exceptions, he hoped the rare exceptions, and he was not attacking the whole body. But, he asked, was it not intolerable and disgusting that a general practitioner who wrote a prescription should have an understanding with druggists, and an undertaking to receive from them a share of their profits? The evil of commissions, Lord Russell contended, was not merely the corruption of the person immediately concerned, but it blunted the sense of honour and honesty. It was bad all round and was carried on to the detriment of those who took part in it, as well as to the disadvantage of those who would have no part in it; it was demoralising to the community, and unjust and unfair to the men who maintained in this and other matters a high standard of probity and honour.

An Evening Meeting of the Pharmaceutical Society will be held in the Society's House, 36, York Place, Edinburgh, on Wednesday next, April 19, at 8.30, when Mr. J. Laidlaw Ewing will take the chair. Mr. Bertram Cockburn will contribute notes on (*a*) the Pharmacopœial Tests for Acetanilide, (*b*) Liquor Strychnini Hydrochloridi, (*c*) Liquor Arsenici Hydrochloricus; Mr. W. B. Cowie a paper on "The Temperature at which Ammonium Carbonate B.P., Lithium Carbonate, and Potassium Bicarbonate Decompose"; and the Assistant-Secretary, Mr. J. Rutherford Hill, will read a "Dispensing Note on Some Powders Prescribed in Cachets."

The Pereira Medal and the Pharmaceutical Society's medals may be competed for by all pharmaceutical chemists who were members of the Society at the time of passing the Major examination, and who have passed since the previous competition. The next examination—the subjects of which are botany, chemistry, and materia medica—will be held in London and Edinburgh, at 10 a.m. on Friday next, April 21, and intending candidates should communicate at once with the Registrar, Mr. Richard Bremridge, 17, Bloomsbury Square, W.C. It should be noted particularly that not less than three days' notice must be given by any person who intends to compete.

Petroleum Emulsion is now very largely used as a substitute for cod-liver oil, but it has always been a moot point whether the preparation possesses any nutritive value. As Dr. Robert Hutchison points out, in the *British Medical Journal*, petroleum belongs to a series of substances which are characterised by the great opposition they offer to chemical change. One would not therefore expect, on *à priori* grounds, that petroleum would be capable of assimilation in the body. In order to put the matter to practical test, however, Dr. Hutchison recently carried out some experiments on the absorption of petroleum emulsion by man. The results of those experiments have entirely confirmed the suspicions he had entertained on chemical grounds, and have led him to the conviction that petroleum is of absolutely no use at all as a substitute for cod-liver oil. It may reasonably be concluded, he thinks, that petroleum is not absorbed in the human intestine, and can, therefore, in no wise be regarded as a food or as a substitute for cod-liver oil. Nor does he think that petroleum has any remote action upon the lungs. "It is conceivable that if crude petroleum were employed, some of the volatile substances contained in it might enter the blood and be excreted by the mucous membrane of the air passages, but the purer the petroleum used the less chance is there of any such occurrence." Whether petroleum may have any value as a local application in intestinal diseases is left undecided, but it can be imagined that there may be conditions of the intestinal mucous membrane in which the administration of petroleum might be of value in the same way as the application of vaseline to the skin, by forming a sort of pellicle on the intestinal surface. In one sense, also, it may be regarded as an artificial intestinal mucus, and in that way have some value in certain forms of constipation. But petroleum, even when in the given form of emulsion, "is not absorbed at all, and as a consequence can have no nutritive value."

The First Hodgkins Gold Medal given by the Smithsonian Institution has been conferred on Professor Dewar, F.R.S., for his work on the liquefaction of air. Some time ago a wealthy American citizen—Mr. Thomas Hodgkins—left to the Smithsonian Institution a large sum of money to be given to scientists who from time to time contribute to our knowledge of the atmosphere. This medal is in connection with the Hodgkins Fund. The matter was referred to at a general monthly meeting of the members of the Royal Institution held this week, when the Duke of Northumberland presided and congratulated Professor Dewar on the honour conferred upon him and also on the Royal Institution. He said he regarded the incident as specially gratifying as a sympathetic recognition of scientific work and discovery in this country coming from the great nation of our own blood on the other side of the Atlantic.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, the 5th instant, at the Society's House, 67, Lower Mount Street, Dublin.

The President, Mr. R. J. Downes, was in the chair, and the other members present were the Vice-President (Mr. Beggs), and Messrs. Kelly, Bernard, W. F. Wells, jun., Grindley (Treasurer), Porter, Michie, Dr. Walsh, and Professor Tichborne.

The President read a letter from Sergeant F. Farrell, R.I.C., stating that at the Moville Petty Sessions he summoned William Carlin for unlawfully selling poison (rat poison), and for keeping open shop for the sale of poisons. The presiding magistrates were the Hon. E. Cochrane, chairman, Mr. Hannigan, and Mr. Bradley. They convicted the defendant on the first charge, and imposed on him a fine of £5, but they added that that being the first case of the kind that had occurred in the town, and the defendant having sold the poison in ignorance of the law, they recommended that the fine should be remitted. Mr. Bradley dissented.

A letter from the Privy Council Office stated that the Lord-Lieutenant and Privy Council declined to approve of a resolution of the Council amending the regulation which relates to the botany and materia medica courses by requiring that students who relied on attendance at schools outside that of the Society should produce certificates of having attended a course of twenty lectures in each subject, of one hour each, during three months. The Privy Council had written asking, was this a reasonable and possible requirement from the outside schools; and the Council had replied that those schools had been recognised on the understanding that they would maintain that minimum.

Mr. Grindley said that under such circumstances the Council should not recognise any other schools than their own.

Mr. Kelly: Would it not be well to write to the Castle pointing out that if this amendment be not allowed it will be possible for a candidate to take out the twenty hours in a week.

The President: A case occurred in which a candidate went to one school and was refused assistance unless he took out the lectures in the regular course. He went to another school, got through the lectures in a week, and got a certificate which we had to accept.

Mr. Bernard: You should communicate with Sir George Duffey on the subject. If he recommended the amendment it would have been passed by the Privy Council.

Mr. Kelly: It is a positive insult to us.

Mr. Wells: They suspect everything that you do. They think you can do nothing with a good motive.

The Vice-President: You will have to fall back on a system of excluding all schools except your own.

Mr. Wells: It might be well to intimate to the Privy Council that we should regret being obliged to cease to recognise the outer schools if they are not kept on the same footing as our own.

On the motion of Mr. Bernard, seconded by Dr. Walsh, it was ordered that the correspondence with the Privy Council relative to the amendment in question was ordered to be brought under the notice of Sir George Duffey.

A letter from the Under-Secretary, Dublin Castle, intimated that the Lord-Lieutenant had been pleased to reduce a fine of £5 which had been imposed on John O'Meara, of Killimor, for selling carbolic acid in an unlabelled bottle to £2.

Mr. Bernard: It is not Government funds that they are giving away.

The Vice-President: Would they reduce anything if it was in the Excise department?

A letter from the Inspector-General of the Royal Irish Constabulary requested the Council to make communications to the Constabulary to the superior officers of the district, and not to subordinate members of the force.

Mr. Wells pointed out that Section 16 of the Pharmacy (Ireland) Amendment Act of 1890 directed that the Registrar of the Council should send copies of the registers of pharmaceutical chemists and druggists and registered druggists to the inspectors of weights and measures in each constabulary district. When sergeants of constabulary were appointed inspectors of weights and measures, then superior constabulary officers had no control over them. They could prosecute or not, as they thought fit.

Mr. Bernard: This action of the authorities would disqualify them from acting as inspectors of weights and measures.

A letter from the Secretary of the Lord Chancellor of England acknowledged the receipt of a communication from the Council on the subject of the abuse of the Companies Acts by unqualified persons.

The Lord Chancellor's Bills.

The President said he received copies of two Bills which had been introduced in the House of Lords by the Lord Chancellor the day after the Bills were printed. One of these was very short and admitted the principle for which the Council contended, being entitled, "An Act to prohibit the profession of a physician, surgeon, dentist, or midwife from being carried on by a company." It provided that it "should be unlawful for any company under the Companies Acts from 1862 to 1898 to carry on the profession or business of a physician, surgeon, dentist, or midwife"; and that "any company contravening the Act should be liable to a fine not exceeding £5 for every day the contravention happened." The second Bill was entitled "An Act to Amend the Pharmacy Act, 1868." On the back of it was the following memorandum:—"Under Sections 1 and 15 of the Pharmacy Act, 1868, there are penalties on persons acting as chemists and druggists without being registered. It has been decided that the word 'person' in Section 15 of the Act of 1868 does not include a corporation, and that consequently the penalties for the contravention of that section cannot be recovered from a company (Pharmaceutical Society *v.* the London and Provincial Association, 1880, 5th Appeal Cases, 857). It is obvious that a company cannot pass the examination required to qualify for registration as a chemist and druggist. The object of this Bill is to allow a company to carry on the business of a chemist and druggist on the condition that they employ a duly qualified manager or assistant—that is to say, to place a company in the same position as the executors or trustees of a deceased druggist, and to provide that, subject to this provision, anything which would be an offence under Section 15 of the Pharmacy Act, 1868, if committed by an individual shall be an offence if committed by a company." With regard to the statement that a "company" could not pass an examination, a firm could do so, and he (the President) maintained that a "company" could in the same way that a a "firm" could.

Mr. Wells: This Bill is for England only.

Mr. Grindley: It is the thin edge of the wedge.

The President: It is to be noticed that "apothecaries" are not included in the Medical Bill; and that the Attorney-General, replying to a question in the House the other day, said he had received a resolution from the Corporation of Dublin, and that the Companies Acts should be amended so as to prevent a company, any of the members of which were not qualified as apothecaries, from carrying on the trade or business of an apothecary. There is nothing about apothecaries in the resolution of the Corporation; and, also, the Lord Chancellor, in his communications with us, always refers to our seeking amendments in connection with the abuse of the Medical Acts. This leads me to think that the Government have an idea of dealing with the compounding of prescriptions as the act of an apothecary, and separate from that of selling poisons, and I have addressed a letter to the Chief Secretary on the subject. You are aware that the Act of 1868, which is dealt with, does not extend to Ireland, nor would any amendment of it do so; so that we have no direct interest in that Act. You are also aware that the same Act allocates the right to "keep open shop for the retailing, dispensing, or compounding of poisons" to chemists and druggists, but does not extend to the compounding of medical prescriptions, so that the latter subject is not within view of the amendment; and it may be a question whether the pharmacists of Ireland ought not to lie low and await developments, a greater reason for which would be that apparently the Council of the Pharmaceutical Society of Great Britain does not desire that we should meddle in its affairs. I should be very sorry to do so, except where our interests are affected. It is a question also whether the Lord Chancellor has not thrown out these two kites to find the strength of the wind and in what direction it is blowing. He tables his Bills and says to the representatives, "Which will you endorse?" When he gets the answer to that question, he will be in a position to apply the accepted principle to all the interests concerned. This view makes it a necessity for us to oppose the measure on principle with all the influence we can command; we cannot help interfering. First, there is the giving away of titles, and this without repealing the Act of 1852 or cancelling the Charter of 1843. For though the title of "chemist and druggist" is first conserved in the Act of 1868, that of "pharmaceutical chemist" is of prior date, is of an educational character, and is not at all associated with "keeping

open shop." That a company should be capable of being pharmaceutical chemist in one month, and a chemist and druggist in another, according as it changed its assistants would be ridiculous. But the lower question as to the right to "keep open shop" is the marrow of the contention, and we cannot allow that to be given away in one part of the kingdom, for that could not be done without serious risk of its being applied to our part. Ireland is often favoured with special legislation, and the conditions of the two countries are dissimilar; so it is not impossible that such legislation might come to us. We have, however, a large contingent of druggists in the country; and although they have not shown themselves cordial I am unwilling to separate ourselves from them in this matter. All I have written and every argument I have used has been for their benefit, and will continue to be; for I believe the principle I have advocated can only be applied as a principle to all having similar rights and interests, and cannot be given to a profession and withheld from a trade which similarly requires education and examination prior to registration as evidence of qualification. If you take my view, that we must fight this question on the present Bill, I will ask you to make arrangements by which you can be effectively represented in the Lobby of the House. My business will not allow me to spend my time there, and I will cheerfully vacate the honourable position I hold to enable you to place someone with more freedom in the position of President.

Mr. Wells remarked that in the Medical Bill the object of the prohibition was a "limited company," whereas in the other Bill the words were "a company," which meant any company. It was extraordinary that this protection should be extended to dentists. He maintained that the profession of a pharmaceutical chemist was much more important to the public than that of a dentist.

Mr. Michie: Have the dentists a representative on the General Medical Council?

Mr. Wells: They have. We have not got that yet.

Mr. Grindley: I think the Lord Chancellor finds that the English Society is not tractable, and he is putting down his foot, and bringing in this Bill in order to bring the Council to reason.

Mr. Bernard: I do not grudge the English Society any treatment it gets.

The President: Will you take any steps to fight this question on principle?

Mr. Wells: I do not know what you can do. This is an English Bill. What have we got to say to it?

Mr. Bernand: Someone may propose that it be extended to Ireland.

The President: If the principle goes against us in this English Bill we cannot expect that it will not be carried out here.

Mr. Kelly: Can we educate the Irish Members as to what we want?

The President: As far as I can understand the Irish Members are all with us in the matter.

Mr. Wells: One Member told us that the whole Irish party will vote with you.

The President: Our own Member, Mr. Campbell, is with us; but he is with the Government. We have not approached Sir James Hazlett yet.

The Vice-President: Would it not be well to write to him, asking for his opinion, and also to hold a consultation with him? I propose that you write to Sir James Hazlett, asking for an interview, and, if you receive a favourable reply, go down to him. It would be well to see Mr. Campbell also.

Mr Wells: What about the Nationalist Members?

The President: We have written to them, but they are very busy just now.

Mr. Bernard: Dr. Kenny understands the thing thoroughly.

Professor Tichborne observed that in the Medical Bill there was nothing about "apothecaries," so that in order to evade its prohibition it would only be necessary for a person to be registered as an apothecary, and then he could conduct any of the prohibited pursuits.

Company Trading in Pharmacy.

A letter from the Town Clerk of Dublin enclosed the following resolution, which had been passed by the Municipal Council on March 28:—

> That this Corporation, having read the complaint of the Pharmaceutical Society of Ireland and the correspondence in support of it, we affirm that it is a scandal that persons incriminated and fined for a breach of the pharmacy laws may, under cover of the Companies Act, continue to "keep open shop" in contravention of the Statutes which require that the person keeping open shop shall be qualified by examination, and that "protected capital" should have powers and privileges in excess of what the individuals have of trading as a firm. And we are of opinion that in any amendment of the Companies Act it should be defined that persons may not be incorporated to pursue a calling or use titles which they may not as individuals or as a firm follow or use. And that a copy of that resolution be sent to the Lord-Lieutenant, Lord Chancellor, and Attorney-General in Ireland; and to the President of the Board of Trade, the Lord Chancellor and Mr. Balfour in England; and also to our city representative in Parliament.

The Public Health Committee of the Dublin Corporation, at a subsequent meeting, resolved, on the suggestion of Sir Charles Cameron, to forward to the Premier, in view of further legislation, the following recommendations as to the sale of poisons, contained in a paper by Mr. R. J. Downes (President of the Pharmaceutical Society of Ireland), which was read before the Public Health Congress:—

> (*a*) That "wholesale dealing" should be defined as (1) A sale to a person qualified to sell by retail; (2) a sale to a manufacturer for use in the process of his business; and (3) a sale to public bodies who usually buy by contract.
> (*b*) That the principle of qualification of the proprietor should not be departed from.
> (*c*) That "poisonous substances" recognised to be poison should be added to the Poison Schedule.
> (*d*) That potent and seductive poisons in prescriptions should not be repeated except by the special direction of the prescriber.
> (*e*) That poisons may not be kept or sold in the shop or room in which groceries and excisable liquors are sold or kept, or in bottles in common use for the containing of beverages.
> (*f*) That a legal as well as a moral obligation should rest on the public as to storing and distributing poisons.

The Registrar said letters had been received showing that similar views had been adopted by the Blackrock (Dublin) Urban District Council, the Drumcondra and Clonliffe Urban Council, the Carlow Urban Council, and the Carrick-on-Suir Council, whose letter stated that they were "unanimously in favour of the views of the Pharmaceutical Society of Ireland as to the importance of having none but those who were qualified by education and profession dealing with, or in any way disposing of, drugs and medicines to the danger of the public." Letters from a number of other public bodies either said they had not yet discussed the subject, or that the communications of the Society to them had been marked "read."

The President moved a resolution thanking the Councils which had passed resolutions in support of the representations to Parliament made by the Society for an amendment of the Companies Acts in regard to "keeping open shop" by companies contrary to the Pharmacy Acts.

Mr. Wells seconded the motion, which passed unanimously.

Further Correspondence.

A letter from the Irish Pharmacists' Assistants' Association, in reply to a remonstrance from the Council as to the use by that Association of the title "Irish Pharmacists' Association," stated that they "failed to see anything misleading in the use by them of that title, and that they did not consider any explanation necessary." The letter was signed by the President and Honorary Secretary of the Association.

The President said the Association used the title on tickets which they issued for an entertainment.

Vice-President: I think a very strong explanation is required. At my suggestion we gave them the use of the rooms of this Society. I am sorry to see that they have taken up such an attitude, and I think we should now ask them to procure rooms for themselves.

Dr. Walsh: When we wrote to them in the spirit in which we did, I think they ought to have fallen in with our views.

Mr. Wells: All along the Council have tried to meet them in the most friendly spirit and to encourage them in every way, and I think their letter uncalled for and most discourteous.

Mr. Kelly said he did not agree with the letter; but, on the other hand, he did not think such a small matter worth taking notice of.

The President said he was surprised at the tone of the letter, and he thought the Association should be informed that if they persisted in using the title in question the Council would have to reconsider their position towards them.

The President's suggestion was approved of.

The Registrar read a correspondence relative to the introduction of certain preparations in a Sale of Poisons Registry Book, published by Mr. James F. Wilkinson, of Manchester. Messrs. McMaster, Hodgson and Co., of Dublin, wrote to the President on March 23 objecting to the introduction in Part II. of the list of

preparations of carbolic acid. Mr. Wilkinson, they said, had informed them that it was the President who had supplied them with the list; and the letter asked Mr. Downes by what authority he made out the list, as in their view the Order of the Privy Council applied to phenol (carbolic acid) only. To this the President replied that he had only followed the judgment of the Courts, which was that the sale of a preparation containing a scheduled poison was a sale of the poison. In a letter of March 24 Messrs. McMaster, Hodgson and Co. dissented, urging that it could not have been the intention of the Privy Council that a cake of carbolic soap or a box of carbolic tooth powder was not to be sold except by a pharmaceutical chemist or a registered druggist. A letter from Messrs. J. and J. Haslett, druggists, of Belfast, pointed out that according to the Calendar phenol only was scheduled, and not its preparations, and asked the opinion of the Council on the matter.

The President said the preparations he put into the list were: carbolic acid lozenges c glycerin, carbolic oil, carbolic lotion, and sheep dips containing carbolic acid. His impression was that any preparation containing free carbolic acid came under the specification of "carbolic acid," but if combined as in soap it did not.

Mr. Wells said he thought the answer the President gave to Messrs. McMaster, Hodgson and Co., a fair one.

Mr. Kelly; If McMaster, Hodgson and Co.'s contention be right it will enable hardware men throughout the contry to sell things which we call poisons to the detriment of the public.

After some discussion it was ordered that the writers of the letters should be informed that the Courts had held that any preparation containing a proportion of any scheduled poison sufficient to cause death is a poison within the meaning of the Poisons Act.

Thanks were voted to the Pharmacy Board of Queensland for a copy of their Register.

On the motion of the President, seconded by Mr. Grindley, a vote of thanks was passed to the Ladies Committee and the artistes who had assisted at the social evening recently held by the Society.

Other business, including reports, having been disposed of, the Council adjourned.

MIDLAND PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held at Mason University College, Birmingham, on Monday evening, Mr. F. H. Alcock presiding.

Dr. C. Leedham Green, F.R.C.S., read a paper entitled

The Sterilisation of Milk.

The lecturer first dwelt upon the impurities of milk, pointing out that it always contained micro-organisms, even when obtained from the most sanitary of dairies. The presence of tuberculosis in cattle was truly alarming, and though it did not necessarily follow that the milk from cows so suffering was infected with the germ of the disease, it was very frequently the case, as was proved by the researches of Professor Kanthack, Dr. Sladen, and Obermüller. He was afraid that the prevalence of consumption in infancy and childhood was due to infection acquired through the alimentary canal by milk from tuberculous cows. After tuberculosis the disease most liable to be spread by milk was typhoid fever; and diphtheria, cholera, and almost certainly scarlet fever had been proved to have been conveyed by it. But quite apart from these definite specific diseases there were stomachic and intestinal troubles from which children so often suffered, which were largely due to milk which had undergone slight putrifactive changes. By far the majority of bacteria found in milk were quite harmless: what they should endeavour to prevent was the ingestion of the disease or the pathogenic bacteria. He advocated a more thorough and constant supervision of dairies and the investment of the authorities with greater powers. All cowsheds insufficiently ventilated, or not properly drained, should be condemned, and urban authorities should have power to prohibit the sale of milk from any cows within their boundaries which were found on examination to be suffering from disease. These precautions, he admitted, would not materially lessen the risk of the transmission of tuberculosis, because the disease in cows ran an exceedingly insidious course. Beasts, to all appearances in perfect health, and who would pass the dairy inspector as sound, were often found when slain to be riddled with disease. It was as yet too early to be dogmatic about the value of the "tuberculin test" in the diagnosis of bovine tuberculosis, but he was somewhat sceptical of its infallibility. Seeing that it was impossible to prevent the micro-organisms entering the milk, the question was how to render them innocuous. The difficulty lay in destroying the micro-organisms without affecting the quality of the article. To prove that boiling was not sufficient to accomplish this the lecturer produced two bacteriological cultures, one made from raw milk, and the other from the same milk after it had been "scalded." He pointed out that from the raw milk a large and varied growth of micro-organisms had developed, whilst from the scalded milk nothing had grown. A casual observer might conclude from this that the previously infected milk had been rendered sterile by the act of scalding. That this was not so he showed by the production of a flask containing some of the same scalded milk which had been kept at a temperature of 98 6° Fahr. for a few days. The lecturer also produced a bacteriological preparation from the same milk made after it had been incubated for two days. He pointed out a rich growth of micro-organisms on the surface, and said that though the boiling had killed off all the adult forms of bacterial life it had not destroyed certain micro-organisms from spores which were much more resistant to the action of heat. These, during the process of incubation had developed into the adult forms and rapidly multiplied. Dr. Leedham-Green next referred to Soxhlet's steriliser and explained its use. He showed that even by this process all the micro-organisms were not killed. In face of this, he said, it might well be asked whether under any circumstances milk could be rendered absolutely sterile. He answered that it could, but always with difficulty. One way of accomplishing it was by heating the milk to a temperature above boiling point in an autoclavet or digester, but this rendered it totally unstable for food. There was, however, another method of rendering milk sterile and yet preserving the characteristics of raw milk. This was what was known as "fractional sterilisation" or "Pasteurisation." It was based on the fact that all micro-organisms which were not in the spore stage were killed by a relatively slight amount of heat—*e.g.*, 60° and 70° C. By this method, therefore, the milk was rendered sterile through repeatedly subjecting it to this temperature, after a sufficient lapse of time to allow the spores to become adult micro-organisms, until at length no spores remained. This process was of necessity lengthy, requiring many days for its completion. As to whether it was necessary that milk should be absolutely sterile, authorities differed. Almost all the definite disease micro-organisms were with certainty killed after a temperature of 70° C. had been maintained for half-an-hour, but there still remained a large and widely spread variety of bacteria, of which the hay and potato bacilli, were examples, which were a prolific source of diarrhœa in infants. To destroy these, "fractional" sterilisation, long and tedious as it was, was necessary. Samples of the so-called sterilised milk which he had examined, he found were not absolutely sterile, and he considered it should not be labelled and sold as such. His own opinion was that each household should prepare its own milk, not striving to sterilise it, but resting content with the specific disease germs.

The paper was discussed by Dr. Young, Messrs. Wakefield, Gibbs, Spilsbury, Perry, and Shorthouse, and at the close Dr. Leedham-Green was thanked.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

A meeting of this Association was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Wednesday, April 12, at 11 a.m., Mr. David McLaren, President, in the chair.

The minutes of last meeting were read and approved. Apologies were intimated from Messrs Lunan, Nesbit, Boa, and Nelson.

Mr. A. J. Dey was elected an honorary member.

Mr. C. F. Henry, Honorary Secretary, introduced a discussion on the Lord Chancellor's Pharmacy Act Amendment Bill. After a free expression of opinion the following resolution was unanimously adopted:—

> That this Association in the first place resolves to secure the withdrawal or rejection of the Lord Chancellor's Bill, and to this end resolves to petition the more prominent members of the Government and the House of Lords.

It was remitted to the Committee with powers to carry out this resolution.

The following resolution was also unanimously adopted :—

Further the Association remits to a special committee to draft proposals for a Pharmacy Acts Amendment Bill to be submitted to a meeting of the Association, and thereafter to the Council and other parties interested.

The Chairman, Vice-Chairman, and Secretary, and Messrs. Bowman and Macpherson were appointed a special committee to carry out the above resolution.

Mr. Glass brought under the notice of the Association the objectionable circular issued along with Beecham's pills, to which attention had been drawn by the Forfarshire Association.

The Chairman suggested that the matter should be remitted to the Committee to take any action that might be considered expedient, and this was agreed to.

It was agreed that the next annual excursion of the Association should be on Wednesday, June 14, by train to Perth, and from there a drive to the Carse of Gowrie and back. A Committee was appointed to carry out the arrangements, and the meeting then closed.

BURNLEY AND DISTRICT CHEMISTS' ASSOCIATION.

At a special meeting of this Association, held at the Bull Hotel, Burnley, on Tuesday night, April 11, Mr. J. A. Heaton, the President, occupied the chair, and there was a large attendance to discuss the new Pharmacy Bill introduced by the Lord Chancellor.

After a lengthy discussion the following resolution was passed on the proposition of Mr. Walker (Burnley), seconded by Mr. Hitchin :—

We, the chemists of Burnley and District in open meeting assembled, desire to assure the Council of the Pharmaceutical Society of our confidence in them. At the same time we take the opportunity to state that we hope a most vigorous policy may be adopted by them, and we will do our utmost to assist in any active policy they decide upon with reference to the Pharmacy Bill introduced by the Lord Chancellor, and take the liberty to make the following suggestions :—

(1) That the Council take the craft into their confidence through the local associations.

(2) That these associations are fully alive to the necessities of the times and our present position.

(3) That every means be taken to get the withdrawal of the Pharmacy Bill by the Lord Chancellor, and to that end suggest the Council appoint a strong representative deputation from themselves, and solicit the co-operation of all associations, either direct or through the Federation of Local Pharmaceutical Associations, and invite them to send joint delegates, and wait upon the Lord Chancellor himself and point out the injustice of his proposals and the necessity of being placed on the Medical Bill.

On the proposition of Mr. J. Brown (Secretary) the following resolutions were also passed :—

That this meeting urge on the Federation of Local Associations the necessity of doing their utmost to bring all chemists and chemists' assistants to do their utmost to oppose the Bill now before Parliament, and that signed memorials should be sent to the Lord Chancellor pointing out objections to the Bill and praying for a withdrawal of the Bill, and asking that the pharmaceutical chemists and chemists and druggists be included in the Companies (Medical Profession Bill) ;

and

This Association desire the aid and sympathy of the medical profession in obtaining the inclusion of registered chemists in the Lord Chancellor's Bill (Medical Profession, 1899), and the withdrawal of his Pharmacy Bill, the effect of which will be prejudicial to the practice of pharmacy and render void the thirty years' of increasingly stringent examinations, and further remove all safeguard in the compounding and dispensing of medicines and the supply of drugs and dispensing of medical prescriptions for the public.

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACTS.

Judgment Against the Society.

At the Hanley (Staffordshire) County Court yesterday, His Honour Judge Jordan heard an action brought by the Pharmaceutical Society of Great Britain against John Longman, assistant to Mr. T. Hartle, chemist, 99, Broad Street, Hanley. The Society claimed £5, penalty incurred under provisions of the Pharmacy Act, 1868 (31 and 32 Vic., cap. 121), the particulars setting out that defendant had sold poison, to wit, morphine, contained in a compound known as "Kay's compound essence of linseed," and also in Mrs. Winslow's soothing syrup.

Mr. Grey (instructed by Messrs. Flux, Thompson and Flux, London) appeared for the plaintiffs, and Mr. F. W. Harris (of Messrs. Wain and Harris, Burslem) defended.

Mr. Grey stated, in opening the case, that the action was brought under an Act framed to prevent anyone except registered persons from selling poisons. Morphine was one of those poisons, and the defendant was not a registered chemist.

Arthur Foulds stated that, acting on the instruction of the Pharmaceutical Society, he went to the shop of Mr. Hartle in Broad Street, Hanley, on December 20. He asked the defendant for a bottle of castor oil and one of Kay's essence. Defendant said he was just out of the latter and also of Mrs. Winslow's soothing syrup, for which witness had also asked him. He said, however, that if the witness would wait he would send for it to Mr. Hartle's other shop, which was near to. Witness waited five minutes and a boy who was sent for the compounds returned. Longman wrapped up the bottles and handed them over to the witness, who then paid for them.

Cross-examined by Mr. Harris, witness denied that defendant said they did not keep either Kay's or Winslow's, or that he said "If you will leave your money, I will get them from the other shop." This was the case for the Society.

Mr. Harris, for the defence, said that Longman informed Foulds that poisons were not sold at that shop, but only at the other one. The boy was sent, but he did not return himself, as Mr. Hartle followed and overtook him, and taking the bottles from him went into the shop himself. He handed the bottles to Longman and told him to give them to Foulds. This was done. Mr. Hartle also handed the change out of the half-crown the lad had taken to the Snow Hill shop. Mr. Harris submitted that either the errand lad or Longman were constituted the agent of Foulds and that the purchase was effected at the Snow Hill shop. How, asked Mr. Harris, could a man be a seller without he had dominion of the property about to be passed to the purchaser?

His Honour: Your case is that Mr. Hartle intervened in time to make himself a seller.

Mr. Harris: Yes, sir.

Walter Hartle said he was a registered chemist and druggist of thirty-one years' standing. He bore out the statements of Mr. Harris, and said he did not sell poisons at the Broad Street shop at all.

Cross-examined by Mr. Grey: He had had the Snow Hill shop eight years, and one in Broad Street nine months. It was very exceptional for the boy to go to Snow Hill with regard to the sale of poisons. He had never seen Foulds until that morning in Court.

The defendant and the errand boy, John Samuel Baker, gave corroborative evidence.

His Honour, in giving judgment, said if the Pharmaceutical Society had been aware of all the facts in the case the action would never have been brought, for these amongst other reasons. The real defendant was Mr. Hartle, although, of course, the Society had a perfect right to sue the young man, Longman, who was, in law, at any rate, the nominal defendant. Mr. Hartle had a second shop, and he did not, as his Honour was afraid was often done, carry on his second shop without a qualified man. The qualified man was, moreover, at this time away at dinner. Had he not been, and had he been at the shop, no offence would have been committed. This was a peculiar coincidence, and he could not help saying that the law was very peculiar at present upon this subject. If a man sold a bottle of Winslow's syrup, and was not qualified, he committed an offence which rendered him liable to a penalty of £5, but if another and a qualified man sold the same thing, he did not commit an offence. It seemed a very peculiar thing. He would have understood the case very much better if the Legislature had made it an offence to sell Mrs. Winslow's or Kay's essence at all, but the Legislature allowed them to be sold by qualified persons. What magic there was in a bottle of Mrs. Winslow's passed to the hands of a purchaser from those of a qualified man as differing from those of an unqualified man he could not fathom. In this case Mr. Hartle had intervened in time to bring himself within the decision of the case cited to him (Pharmaceutical Society *v.* Wheeldon), and had thus saved himself from the penalty. In his opinion the sale was made from Mr. Hartle's Snow Hill shop, and by a qualified vendor. Even if it was not the sale was under Mr. Hartle's personal superintendence, and Mr. Hartle was a qualified person. He leant to the opinion that it was sold by a qualified man, and he therefore gave judgment for the defendant with costs.

LETTERS TO THE EDITOR.

Mr. Newsholme and the P.A.T.A.

Sir,—At a meeting of the Bradford Chemists' Association held on March 28 I notice Mr. Pickard criticises some remarks of mine made at a meeting of the Sheffield Pharmaceutical and Chemical Society on March 10, with reference to the P.A.T.A. I may say that the paragraph, "It was a great mistake for chemists to lend themselves to the appearance of evil, and they should not encourage the sale of such medicines at all," applied to the sale of those nostrums advertised for the cure of all irregularities in women, etc. As to the retailer paying more for his goods, Mr. Pickard admits that this is so, but says the extra profit goes into the pocket of the wholesaler and not into the pocket of the proprietor. This being so, where does the retailer get the benefit? All I contended was that the retailer's position was not improved by the P.A.T.A., and Mr. Pickard's remarks have not enlightened me on this matter.

Sheffield, April 11, 1899. G. T. W. Newsholme.

The B.P. Formula for Quinine Sulphate.

Sir,—The anomalies of the B.P., 1898, have been so frequently pointed out in the columns of the Journal that it is almost a work of supererogation to recur to the subject. Questions have frequently to be submitted to experts for opinion as to the correct rendering of various stipulations of the B.P., and in such cases the negative form of opinion that has frequently to be expressed is unsatisfactory, and it emphasises the necessity for a speedy revision at competent hands of the tests in the official work in this country on materia medica. As one instance amongst others of the uncertainty referred to, the question has arisen as to the proper percentage of water in quinine sulphate as fixed in the Pharmacopœia. The formula for quinine sulphate with fifteen molecules of water, or 15·32 per cent., is, of course, merely an approximation, a fact ignored by the compilers of the Pharmacopœia, and the B.P. stipulates that "2·5 Gm. of the freshly prepared salt should lose 0·38 Gm. of water by drying at 100° C.," or 15·2 per cent. But as quinine manufacturers well know, the amount of water in the crystalline sulphate is not a fixed quantity, for owing to the highly efflorescent character of the sulphate it may, with the greatest care in the drying operation, vary from 14 to 16 per cent. Indeed it may be said that except by the merest coincidence no commercial quinine sulphate would answer the B.P. test in so far as giving a loss of 15·2 per cent. on drying at 100° C. Samples of well-known brands of quinine sulphate lately examined and in other respects answering the B.P. requirements, but yielding 14·8, 14·6, 14·2, and 15·7 per cent. of water respectively, might all be rejected as not answering the B.P. test; moreover, they are on that ground alone liable to condemnation under the Food and Drugs Act. In order to prevent such needless commercial friction, it is imperative that the B.P. test should at once be adapted to practical results, and this would be arrived at if it were stipulated that the "salt" should contain between 14 and 16 per cent. of water, and not the arbitrarily fixed amount now required, which has little relation to the quality of the article and cannot be ensured as constant.

April 10, 1899. Quinine. (180/7.)

Apothecaries' Assistants' Certificates.

Sir,—At a meeting of the Dewsbury and District Chemists' Association held at the Town Hall, Dewsbury, on the 10th inst., attention was drawn to your comments on the above subject which appeared in your last issue, a portion of which was considered by the Association to be quite unwarranted and offensive, and eminently calculated to prejudice the continuance of the warm interest in the work of the Pharmaceutical Society, which has recently manifested such a marked development in this district. The paragraphs referred to are as follow:—

> The Dewsbury and District Chemists' Association would have done well to insist upon that fact, rather than weakly withdraw an expression of opinion, which, though imperfectly worded and incomplete, was not altogether unjustified by the facts of the case. Presumably, however, the martyr's spirit is not strong in pharmaceutical circles in the Dewsbury district, and a threat of impossible pains and penalties, has apparently proved too discomposing in its effects for a rational spirit to prevail.

It appeared to the Association, after a full consideration of all the bearings of the case, that the use of the words "sufficient legal qualification" in connection with the other portion of the resolution was quite inaccurate and therefore unjustifiable, and having arrived at this conclusion, it was felt that the most dignified and honourable course was to withdraw the expression complained of. No threatened pains or penalties, possible or impossible, would have been permitted to influence the decision arrived at, had the Association not been convinced that the statement in question was unjustifiable in a strictly legal sense. Before, however, taking final steps in the dispute, the Association was at the trouble of obtaining the opinion of a few influential and leading gentlemen connected with pharmacy, each of whom (with one exception) considered that the members would be acting in the manner most conducive to their own ultimate benefit, as well as the best interests of the trade, by withdrawing the statement complained of by the Society of Apothecaries. Having acted throughout this controversy from a strong sense of duty and with an earnest desire for the benefit of the trade at large, the Association feels somewhat indignant that the official organ of the Pharmaceutical Society should have gone out of its way to speak in such disparaging terms of the action that the Association has seen fit and proper to take.

Dewsbury, April 11, 1899. Robert Gledhill,
Hon. Secretary, Dewsbury and District Chemists' Association.

*** It was to be expected that the members of the Dewsbury and District Chemists' Association would not approve of the comments on their action quoted above. We must reiterate, however, that it was an ill-advised step to withdraw the "expression of opinion" referred to, in so unqualified a manner. So far from benefiting the trade at large, the action of the Association appears more calculated to inflict lasting injury upon the craft: it might more wisely have sought advice before giving expression to an erroneous opinion, and from sources which would have afforded correct guidance.—[Ed. *P.J.*]

The Strength of Solution of Strychnine.

Sir,—I hope you will allow me just once more to reply to Mr. Lunan. I have never changed from $\frac{1}{6}$ to $\frac{1}{4}$. On the contrary, I have all along contended that the salt of commerce does not contain $2H_2O$. I cannot agree that any simple fraction can accurately represent the difference between the two solutions, seeing that the quantity of water in the crystals of strychnine hydrochloride may vary, and this is admitted by the Pharmacopœia test. The figure given in the 'Companion' is, therefore, "sufficiently near for the purpose of the note."

London, April 10, 1899. P. W. Squire.

A Correction.

Sir,—In my letter (page 332) of to-day's *P.J.*, which you kindly inserted, if you refer to copy you will find a slight compositor's or reader's oversight. It should be the bud "with" the "fruit"; the ideal "with" the reality, not "hath." It is not a very important matter, but rather spoils the effect to a critical reader.

Cambridge, April 8, 1899. A. Sidney Campkin.

Open Letters From Candidates.

Sir,—I have been requested to become a candidate for a seat on the Council of the Pharmaceutical Society by many well-known members of our body. As a past-President of the Northamptonshire Pharmaceutical Association, and of the Oxford and District Chemists' Association, I have become acquainted with the wants of our craft, while my long experience as a retail pharmacist makes me eager to co-operate with those who would endeavour to alter the anomalous position in which we are placed by the interpretation of the Pharmacy Acts by legal authorities. I have recently expressed my views at length as to the advisability of altering the Minor examination by dividing it, and I should urge the desirability of keeping our examinations as much in touch with pharmacy as possible. That the tendency to diverge from it too much has been the case in recent years my experience on the board of examiners for nearly ten years enables me to affirm. I can only say that if elected I shall, by all practical and business-like means, strive to benefit the calling which we follow.

Oxford, April 10, 1899. G. C. Druce.

Sir,—I have been induced to offer myself as a candidate for the Council, in order that, should the electors see fit to place their confidence in me, the rank and file of pharmacy may be represented. I do not wish to deprecate (*sic*) the services of those gentlemen some of whom have been members of the Council for many years, but if one honestly asks himself the question, "Does the Council represent the ordinary pharmacist?" the answer must be a negative. In seeking the votes of the electorate, I do so as a representative of the general body in every respect "tempted and tried as they are." For eight years or more I was a divisional secretary (for West St. Pancras), and

proprietor of a London business, struggling against the competitions of houses of fame in the history of pharmacy. Now I am tasting the experience of country pharmacy, and its attendant battle with stores and companies. I do not purpose wildly talking about what the Council ought to do, regardless of the fact of whether it has the power or no, but it is my intention, should the electors do me the honour to return me as a representative, to study to the utmost the furtherance of their interests, by regular attendance at the Council meetings and assistance at the deliberations of its members. I hope subsequently to dwell more in detail upon the several points of interest to the pharmacist of Great Britain.

Tring, Herts., April 11, 1899. JOHN W. T. MORRISON.

Sir,—As the selected candidate of the Chemists' Assistants' Union for a seat on the Council of the Pharmaceutical Society, I feel it incumbent upon me to lay before the members of the Society some views which are of immediate interest to the whole body of chemists. I feel that, as a representative principally of assistants, my duty will be to act loyally to them and endeavour to further their interests as their advice urges from time to time. I shall regard myself at their service, and shall therefore, act upon the opinion of the majority. A representative on the Council should be the embodiment of his supporters' views, and should voice their instructions and demands in such a manner as to gain the confidence and assistance of the Council. I do not come forward as a candidate of the Chemists' Assistants' Union alone, but think that by assistants being represented on the Council it will be the means of establishing a closer bond of interests between employers and assistants. It is very obvious that what can be accomplished by working shoulder to shoulder must prove of very material advantage mutually, and I therefore trust that my candidature will be acceptable, not only to assistants, but also to masters. If qualified men pursue the short-sighted policy of assisting their worst foes to conduct annihilating competition, and of maintaining a form of business which owes its very existence to an error of judgment perpetrated in 1880, then let them not be disappointed when they find there is little prospect of earning a living when in business for themselves. No remuneration is sufficiently adequate for self-destruction. The present unsatisfactory state of affairs may be remedied by more effective organisation, and by ridding ourselves of the disinclination to work patiently and determinedly.

COMPANY TRADING.—In connection with the presence of limited liability companies in our midst I have already advanced an opinion that in view of the fact that the law has by its decision (1880) permitted joint-stock companies to carry on the business of chemist and druggist, we must accept the situation and improve matters for the future by promoting legislation in the direction of prohibiting the registration of companies formed for the purpose of engaging in pharmaceutical practice unless all the members of such companies are qualified under the Pharmacy Acts. I consider that steps should be taken to prevent the title of "Chemist and Druggist" being used by present-day joint-stock concerns. I suggested this as an expedient, having always held that the position of joint-stock companies is untenable. When the State by its decision led men to engage in practices which are violations of justice as understood by reasonable men it presents considerable difficulty in adopting plans for setting things in proper order, when the mischief of the injustice has demonstrated itself. The difficulty of the so-called vested interests confronted me when I put forth my views of tackling the company question. I find from the Bills introduced by the Lord Chancellor for regulating the practice of dentistry, etc., that his Lordship ignores considerations of vested interests, so-called, connected with these professions. I am gratified, but did not expect this. I abandon my ideas of considering the difficulty connected with vested interests of joint-stock companies, and now urge that we strive to convince Lord Halsbury of the justice of our claims to be considered in the same light as the dental profession.

WIDOWS' CLAUSE.—When we consider carefully the damage this clause has caused us we cannot further pursue the suicidal policy of its retention.

BRANCH MANAGERS.—With regard to the employment of qualified managers in branch shops, I advocate its enforcement.

APPRENTICES.—In view of the difficulty of obtaining apprentices I advocate a scheme, the principal features of which are the circularising of head-masters of schools, pointing out the necessity for, and the monetary and other conditions of, pharmaceutical education and employment respectively; and the keeping of a register of names of boys (supplied by head-masters) who have shown scientific inclinations, are willing to adopt pharmacy as a calling, and have attained certificates of recognised examining authorities in elementary chemistry and botany.

EDUCATION.—The solution of the present educational question lies in the proper selection of apprentices with a view to their fitness for their future work, training them properly in the pharmacy, and giving them all opportunities which are available for attending classes in subjects which will nourish, encourage, and help them to build up a sound elementary knowledge, and stimulate them to pursue their future studies to an excellent degree. At the present time I am not inclined to favour an enforced curriculum, because I think it would be imposing an unnecessary burden on the student, and be the means of creating a dearth of assistants. The division of the Minor seems attractive to students, but I do not think that by this means the qualification would be obtained more easily or less expensively.

PUBLIC DISPENSERS.—Regarding public dispensers in the light of assistants, steps should be taken in the direction of urging the Council to approach the Local Government Board with a view to obtaining adequate remuneration for those of the Society's licentiates engaged in Poor Law institutions. A similar course should also be pursued in connection with qualified dispensers engaged by County Councils and Asylum Boards.

APOTHECARIES' HALL.—Inasmuch as the lesser cannot cover the greater, something should be done to prevent the Assistant's Certificate of the Apothecaries' Hall being taken as any guarantee of pharmaceutical education and qualification.

JURY SERVICE.—The necessity of exempting all chemists from jury service should be urged upon the Privy Council.

London, April 11, 1899. R. E. WRIGHT.

Sir,—I am desirous of being elected as a member of the Pharmaceutical Society, and would be glad to be allowed through your columns to seek the votes and assistance of your readers. My immediate object in seeking election is to secure, if possible, that the question of dispensing in doctors' surgeries by unqualified persons should receive the attention of the Council. I am of opinion that up to the present the Council has given no evidence that it fully appreciates the immense danger to the public, and extreme unfairness to chemists, which accrue from the practice. I believe that the Council would be supported by its members, by the leaders of the medical profession, and by the general public, in any steps that they may take to remedy the evil, and that such steps if properly directed, would lead to an amendment of the law. I would support workable proposals for:—

1. Dividing the Minor examination, provided no qualification was given until the Final was passed.
2. Compulsory apprenticeship to a qualified chemist.
3. A better system of registration.
4. The extension of the Poisons Schedule.

I believe there is no danger of the Council neglecting the professional and educational side of pharmacy, but I would specially urge the recognition and protection of the interests of chemists as traders. I have more hope of benefits being derived as the result of efficient trade organisation, instigated by the Society upon democratic lines, and supported by chemists generally, than I have of getting privileges conferred by Act of Parliament. I think our local trade associations should receive fuller recognition from the Society; indeed, I see no reason why they should not be local branches of the Society. I would urge the strongest opposition to the Lord Chancellor's Pharmacy Bill, and would heartily support efforts amending the Companies (Medical Profession) Bill, so as to place pharmacists in the same position in regard to limited companies as the Lord Chancellor proposes to place medical men, dentists, and midwives. Whilst it is necessary that certain questions should be discussed in Committee, I feel strongly that the discussion of matters of general interest should receive the fullest publicity, and I am of opinion that the recent suggestions for a Pharmacy Bill should have been publicly discussed not only by the Council, but by the trade generally before being submitted to the Lord Chancellor. If elected I believe the experience gained by me during the last three or four years from personal contact with my fellow-chemists in all parts of the country would prove useful to me as a member of the Council, and I hope always to be actuated by the principle: the Pharmaceutical Society for the trade—not the trade for the Pharmaceutical Society.

London, April 11, 1899. W. S. GLYN-JONES.

Sir,—In again offering myself as a candidate for a seat on the Pharmaceutical Council, I may be permitted to remind the members of the Society that I have formerly expressed myself very strongly with regard to the illegality of pharmacy trading by unqualified companies, and hold that as the State has decided by Act of Parliament that to become a chemist and retailer and dispenser of potent medicines, drugs, and poisons, the qualified, registered, and experienced chemist should be protected against the unfair competition of unqualified trading stores and companies, who under the decision given as to the Companies Acts are exempt from personal liability. I would support and promote legislation which would place the chemist upon the same footing as members of the medical, legal, and other professions, and endeavour to educate the public thereby to a sense of their responsibility and safety. I consider the Society should be supported by all chemists, and that they should hesitate no longer to take advantage of recent legislation and become members thereof, so that the Council may be thoroughly representative of all sections, instead of, as hitherto, elected by less than a third of the chemists on the Register. With regard to the Bill introduced by the Lord Chancellor into the House of Lords, I think it should be strongly opposed (especially Clause 3) by the Council on behalf of the Society, and that steps should be taken by the Council to secure the opinion and co-operation of all registered chemists in opposition, so that the Bill may be defeated if opposition should be unsuccessful in the Upper House. All collective and individual opinion should also be brought to bear locally upon Members of the House of Commons, to secure its rejection. With a view to promote legislation in the next Session, of a more equitable and just character, I am not in favour of the suggestions for a Draft Pharmacy Bill recently proposed, as I consider further amendments and definition necessary with regard to the status of the seller, or dispenser, or compounder. Provision should be made for registration as students, and no one should accept as an apprentice one who has not previously passed an examination approved by the Council of the Society. I believe this would be beneficial not only to employers but to all future entrants, who would thereby be better prepared and secured against the failures that have been so noticeable in the past. I consider there should be a limitation as to the operation of the "Widows' Clause," and approve the proposals for the division of the Minor examination. I think the practical should be distinct from the theoretical part, as is adopted in the case of the Apothecaries' Assistant's examination. On matters generally, I have expressed opinions which have been reported, but recognition of the status of the chemist, who has undergone a long and tedious as well as an expensive preparation, is a point which I have all along strongly emphasised.

Cambridge, April 12, 1899. Algernon Sidney Campkin.

Sir,—Having been nominated for election to the Council of the Pharmaceutical Society, I have undertaken to accept office if elected, and offer myself to the electors as a candidate. The Council exists to carry on the business of the Society in the interests of all its members, and I think that the owners of middle-class retail business should have a larger representation. It is as a member of that section that I submit myself. The subject that demands our urgent attention at the present time is the Pharmacy Act Amendment Bill introduced into the House of Lords. We will want all our fighting strength to meet the Lord Chancellor's attack, and the Council must, in my opinion, be prepared with an alternative proposal. The absurd difference between the preamble and legal interpretation of Clauses 1, 3, and 15 of the Pharmacy Act, 1868, has been referred to over and over again, and must not be allowed to continue; but the solution must be found by our own body. It would be disastrous if we were split up into factions and our strength disintegrated through the production of rival schemes. I repeat, it is the duty of the Council to solve the problem in a way that will commend itself to the Legislature, while the interests of registered chemists shall be protected as fully as possible. The Council has made a demand for the maximum, and the Lord Chancellor's Bill is the reply to it. The time has arrived when it is imperative that insistent and persistent effort should be put forth to amend the Pharmacy Act of 1868 on rational lines, and that responsibility rests with the Council. Undoubtedly the Pharmaceutical Society is constituted on a democratic basis; but that character is not as conspicuous as it might be. I would advocate or support a proposal to bring the Council into closer communication with the members of the Society through the medium of the Federation of Local Pharmaceutical Associations or by any other means that would more effectually accomplish the object aimed at. I am of opinion that trade subjects should occupy the attention of the Council to a greater extent than appears to have been the case hitherto. A vigilant watchfulness should be exercised over all attempts at legislation directly or indirectly affecting registered chemists, either in their professional position or as traders. I would support to the best of my ability co-operation with the Irish Pharmaceutical Society in all Parliamentary matters when joint action could be arranged, and with other bodies whose interests would not clash with our own.

164, Aigburth Road, Liverpool. John Smith.
April 12, 1899.

ANSWERS TO QUERIES.

Moth Sheets.—Moth paper can be obtained from the Sanitas Co., Ltd., Bethnal Green, London. [*Reply to* E. H. C.—26/12.]

Ext. Hamamelidis Liq.—This preparation should be brown, but the colour varies slightly, according to the condition of the leaves from which it is prepared. [*Reply to* J. S. W.—26/5.]

Darkening Lead Letters.—Try painting them with strong ammonium hydrosulphide solution. [*Reply to* E. R. S.—26/13.]

Corundum Stone. — Try John Oakey and Sons, Limited, Westminster Bridge Road, London, S.E. [*Reply to* J. W.—26/24.]

Tennis Ball Coverings.—The substance you wish to remove appears to be indiarubber and carbon bisulphide; mineral naphtha, or benzol ought therefore to remove it. [*Reply to* E. H.—25/31.]

Liability of Labels.—The words "Prepared by," do not render the preparations liable, as you do not claim an exclusive right or title to preparing them. [*Reply to* G. A.—26/15.]

Chelidonium.—The "ch" should be pronounced "k," not "tsch." Your friend's pronunciation would appear to have been "made in Germany." [*Reply to* C. F. J.—26/19.]

Metol and Hydroquinone Developer.—You will find a suitable formula in the photographic supplement published with this week's Journal. [*Reply to* E. J.—25/30.]

Squire's 'Companion.'—We understand that the demand for ordinary copies has been so exceptionally great that it has not been found possible to offer interleaved ones for sale yet, but interleaved copies will be procurable shortly. Write direct to the editor, Mr. P. W. Squire, 413, Oxford Street, London, W., stating that you require a copy. [*Reply to* F. B. L.—26/23.]

Life Membership of the Society.—There is no difference between life members and other members. The former can resign their membership, or may be removed by the Council just the same as members who prefer to pay their subscriptions annually, instead of compounding them. The confusion you refer to no longer exists, as the Society now consists of members and student associates only. [*Reply to* F. S. C.—26/17.]

One-Solution Developer.—The following is suitable for your label: Potassium metabisulphite, 25 Gm.; glycin, 10 Gm.; distilled water, to 225 Gm. When dissolved, add potassium carbonate, 50 Gm.; potassium bromide, 1 Gm. The potash must be added gradually with constant stirring, as CO_2 is given off. You might also adapt the one solution metol and hydroquinone developer, the formula for which appears in the photographic supplement to this week's Journal. [*Reply to* J. W. W.—26/10.]

Hardening Skin for Shaving.—We do not think you will succeed in "hardening" delicate skin in shaving by any local application. We should rather recommend you to direct attention to the razor and to the soap employed. We have met with shaving soaps containing so much free alkali that the subsequent use of a razor might almost be dispensed with; if a very alkaline soap be used, it naturally makes the skin tender. Careful washing and thorough drying after shaving should be recommended to prevent excoriations. [*Reply to* J. W.—26/11.]

ROYAL COLLEGE OF SURGEONS ENGLAND 21 APR 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Cocainidine.

It is well known that the chemistry of coca leaves is far from being exhausted, and an intimation that Dr. George L. Schaefer has discovered a new alkaloid in the leaves does not, therefore, come as a surprise. According to the *Druggists' Circular*, Dr. Schaefer made the discovery in September last, but publication has hitherto been withheld, pending accurate determination of the chemical and physiological properties of the new alkaloid. Dr. Schaefer has termed this body "cocainidine," owing to its similarity to cocaine. The melting point of cocainidine is said to be higher than that of cocaine, and the base less soluble in petroleum ether than cocaine is. Cocainidine forms crystallisable salts, which are very soluble in alcohol and water, and it possesses the anæsthetic properties of cocaine, but to a lesser extent. The new alkaloid appears, from the preliminary analyses already made, to be isomeric with cocaine.

Crystalline Fibrin.

It has been noticed at the Institute Serotherapique de l'Est that tubes of antidiphtheric serum in the course of a few months show a deposit. This has been examined by A. Maillard, who finds that it consists of fibrin in the form of angular granules which polarised light shows to be of crystalline structure, with some lamella of a clinorhombic aspect. This form of fibrin is not peculiar to antidiphtheric serum; it has also been obtained from ox-blood serum when sterilised and set aside. It is only found in those tubes which show a deposit after standing for some months; if a precipitate appears in a few weeks it consists of amorphous fibrin in the ordinary form. It would appear, therefore, that fibrin, like the globulins of the reserve material of plants, should not be regarded as uncrystallisable, but rather as slowly crystallisable.—*Compt. rend.*, **128**, 373.

Arsenic in Glycerin.

A. C. Langmuir describes a modification of Polenske's process (*Chem. Centrbl.*, 1889, 60 [2], 58), for the determination of arsenic in glycerin, which yields very close results. For analysis he takes 15 to 20 Gm. of a crude soap lye glycerin and 25 to 30 Gm. of a saponification or C. P. glycerin. With dilute glycerins an amount is taken which would yield the requisite weight upon evaporation. The weighed sample is made up to 100 C.c. with hot water and rinsed into a capacious casserole, containing a mixture of 200 C.c. of concentrated nitric acid, and 12 C.c. concentrated sulphuric acid. Cover and heat gently in the hood until the action starts. Remove the flame and wait until the violence of the reaction is over, then boil down slowly over a low flame until dense fumes of sulphuric acid appear. Raise the heat at the end to expel the last traces of nitric acid. If the concentration has been a slow one (four to five hours) the organic matter will generally be entirely oxidised. If the acid turns brown, however, from the charring of organic matter, it is well to boil for some time longer to complete the oxidation. There is no danger of losing any arsenic by this treatment. Cool and dilute to 50 C.c. About 40 Gm. of coarsely granulated zinc is placed in the generating flask of the Marsh apparatus. A 75 to 100 C.c. stop-cock funnel pierces the stopper. The escaping gas is passed through a wash-bottle containing a 5 per cent. lead nitrate solution to remove any hydrogen sulphide, and is dried by passing through a calcium chloride tube. A tube of hard glass about 10 inches long and with an inside diameter of 10 to 12 Mm., is heated near one end and drawn out at that point to a tube with a diameter of 1 to 1½ Mm. This section serves to catch the metallic arsenic deposited. Of the large sections the longer heated by two Bunsen burners. To prevent sagging it is well to protect this part of the tube with a roll of copper gauze wrapped around it. The shorter section at the end of the tube holds a slip of filter-paper moistened with a saturated solution of mercuric chloride. This serves to detect the presence of any hydrogen arsenide which might pass the burners undecomposed. After making connections, 10 C.c. of 20 per cent. sulphuric acid is run into the flask. When the air has been entirely displaced rinse the solution to be tested into the stop-cock funnel, light the burners and run the solution, drop by drop, on the size at such a rate that not more than two bubbles a second pass the lead nitrate wash-bottle. If the mercuric chloride paper should at any time show a yellowish tint the solution should be run in more slowly. If the size of the mirror shows that a considerable amount of arsenic is present, it is well to add, at the end, a little stannous chloride dissolved in hydrochloric acid. In any case add a few cubic centimetres of dilute acid after the entire solution has been run in to expel hydrogen arsenide remaining in the flask. The section carrying the mirror is separated by a file and carefully weighed on an assay gold balance within 0·01 Mgm. This can readily be done, as the weight of the tube seldom exceeds 300 Mgms. The arsenic is dissolved by dipping the tube into hot dilute nitric acid, and after washing and drying the weight is taken again, the difference being the weight of the arsenic forming the mirror. The zinc and acids used should not form a perceptible mirror after running the apparatus three-quarters of an hour.—*Journ. Am. Chem. Soc.*, **21**, 133.

Suggested Galenical Processes.

F. W. E. Stedem suggests modifications in certain U.S.P. official processes for the production of galenical preparations, and some of the ideas he propounds may be found worthy of consideration by British pharmacists. Tincture of Asafetida is recommended to be made by percolation, the asafetida being selected and reduced to a uniform coarse powder, then packed in a percolator and macerated for forty-eight hours before percolating. For Tincture of Calumba, the drug in No. 20 powder is directed to be percolated, after packing loosely and moistening. In the case of Tincture of Guaiacum, the selected resin is reduced to fine powder in a mortar and the menstruum added gradually, with constant trituration. When most of the resinous matter is dissolved, transfer to a prepared filter; wash the residue, and filter with enough menstruum, reserved from the original quantity, to make up the measure. Tincture of Iodine is prepared by reducing the iodine to a uniform coarse powder, and after plugging the neck of a glass funnel with a plug of absorbent cotton, and covering that with an evenly cut piece of white filter paper, introducing the iodine into the funnel, and adding alcohol carefully. If any undissolved iodine should be left in the funnel after all the alcohol has passed, the weak tincture is again passed through, but this is rarely necessary. Tincture of Myrrh is prepared by percolation, the myrrh (in No. 16 or 18 powder) being packed gently without moistening, and menstruum added until the liquid wets the cotton of the percolator; the lower orifice of the percolator is then closed and the mixture allowed to stand for twenty-four hours, after which percolation is allowed to proceed, slowly at first, but more rapidly towards the end of the process. Camphor Water is prepared by weighting fair-sized pieces of camphor with fragments of glass rod, and immersing them in distilled water.—*Am. Journ. Pharm.*, 71, 162.

MICROCHEMICAL STUDY OF ALKALOIDS IN DRUGS.

The location in the drug occupied by its active principle is a question of practical as well as scientific importance. Hermann Barth has recently investigated a number of drugs containing alkaloids by use of microscopical reagents and methods, and his results are worthy of some notice.

The seat of alkaloids in drugs is by no means always the same, even in the case of similar organs. They sometimes occur at points where the most rapid development is taking place, as in the vegetative points of *Colchicum*. In cases they are located especially in parts that have finished their development and from which the alkaloids are not withdrawn for use, as piperine in the oil cells of the perisperm and wall of the fruit of the pepper. They originate in the plasms of the cell, appearing later in the cell sap, where they form salts with the acids there present.

In regard to the function of the alkaloids in plants, the view at present generally held relegates them to the excreted products which do not again enter into the plant's metabolism. They are thought perhaps to act as a protection against the attacks of animals, a view supported by their usually peripheral position.

The author sought to determine by quantitative methods whether in the seeds containing alkaloids these substances undergo any change during the germination of the seeds. *Datura* seeds, in which the alkaloids are located in the nucellus layer, were found to show a marked decrease in the amount of alkaloid present where ungerminated seeds and those which had undergone germination were compared; the latter were found to contain only one-fifteenth of the quantity present in the former. *Conium* tested in a like manner gave similar results. The author is, therefore, of the opinion that the view which regards alkaloids as reserves cannot be denied for certain cases.

In order to secure greater accuracy, Barth extracted the alkaloid from sections of the various drugs, and when applying reagents to the fresh sections used the extracted sections as control objects.

As reagents for alkaloids, the author made use of a long series of compounds. Potassium iodide solution of iodine was found to be useless in starchy and chlorophyll-bearing tissues. Treatment of starchy tissues with iodine was secured by exposing the sections to the fumes of iodine and observing in paraffin oil, the alkaloid being precipitated without the colouring of the starch. Zinc chloriodide, Mayer's reagent, tannin (10 p. c. solution), picric acid (1:10), chloride of gold and of platinum, potassium-platinum cyanide, mercuric chloride, ferro- and ferri-potassium cyanide, ammonium molybdate and sulphuric acid (Fröhde's reagent), potassium bichromate (5 p. c. solution), iron chloride (5 p. c. solution), copper sulphate (10 p. c. solution), bromine water, sodium hydroxide, and other reagents were made use of.

The study of the individual drugs gave an interesting series of results.

In *Conium maculatum*, L., the best reagents for coniine are solution of iodine in potassium iodide ($I:KI:H_2O = 1:1:100$), potassium-bismuth iodide, gold chloride, bromine water, iodine, bromine and HCl fumes. The alkaloids are found in the inner parts of the wall of the fruit and in those parts which immediately surround the fibro-vascular strands which traverse the ribs of the fruit. The endosperm and embryo are free from alkaloids.

In *Pegonum harmala*, L., the alkaloids, harmaline and harmine, are located in a layer of large cells adjacent to the remainder of the nucellus tissue. This is a very favourable object for the demonstration of alkaloids by microchemical methods.

In the seeds of *Datura stramonium*, *Hyoscyamus niger*, and *Atropa belladonna*, collected before ripeness, the alkaloids are located chiefly in the nucellus, but endosperm and embryo perhaps contain traces. The epidermis of the seed covering is free from alkaloids.

The best micro-chemical reagents for colchicine in the tubers of *Colchicum autumnale* are: I in KI sol., picric acid, tannin, conc. sulphuric acid, and conc. hydrochloric acid. The reactions indicated alkaloid in the epidermis of the scales surrounding the corm, in the epidermis of the corm itself, in the bundle sheaths, and in the phloem. The growing point and the adjacent tissue for 1 Cm. shows alkaloid in all cells alike. A concentration toward the periphery is marked. The base of the corm is poor in alkaloid.

In the stem the alkaloidal reaction is to be detected in the epidermis, in bundle sheaths and in the phloem. The leaves likewise show alkaloids in the bundle sheaths, in the phloem and epidermis. It is especially pronounced in the epidermis, being unevenly distributed; it is not especially abundant in the guard cells.

In the unripe seeds, the alkaloid is present in the seed coat in an interior layer composed of quadratic cells. In the ripe seeds, it is found especially in strongly compressed cells in the same region.

In *Sabadilla officinarum*, Brandt., the alkaloids are found in the endosperm and embryo and in smaller quantity in the seed coat also. No veratrine is present in the seed coats, and it is possible that the alkaloids of this region are different from those of the embryo and endosperm.

The seeds of *Aconitum napellus* contain aconitine in the cells of the endosperm, the central part of the seed being somewhat richer than the periphery. The embryo also contains the alkaloids, while the seed coats are free.

The bases contained in seeds of *Areca catechu* are found in the endosperm cells. The best reagents for this drug are potassium bismuth iodide, picric acid, gold chloride, platinum cyanide and vapours of iodine, hydrochloric and nitric acids.

In the Calabar bean, *Physostigma venenosum*, Balfour, the seat of the alkaloids is in the cell contents of the cotyledons, as appears especially on treatment with I in KI solution, bromine water, nitric acid and iodine vapours.

The seeds of *Strychnos nux vomica*, L., contain in the contents of the endosperm cells strychnine and brucine; the embryo, however, contains only brucine. Several other species of *Strychnos* were studied. The seeds of *S. potatorum*, L. fils, *S. spinosa*, Lam., and a third, undetermined species from the Zambesi valley, contain no alkaloids in the seed. In *S. ignatii*, the alkaloids are easily demonstrated. *S. spinosa*, Harvey, showed traces of brucine and strychnine, confined to the uttermost three or four cell layers. The embryo lacks alkaloids. *S. tienté* contains much strychnine and little brucine.—*Bot. Centralbl.*, **75**, p. 225, through *Pharm. Review.*

Iodothymoform.—This new disinfectant may be prepared thus: Thymol, 100, is warmed with formalin, 100, and well stirred for some time; then hydrochloric acid, 100, is added, when violent reaction takes place, and a thick oily fluid separates, which, on cooling, solidifies to a solid mass. This is crushed up and drained from adhering liquid, washed, and dried. Each 41·6 of this product are dissolved in alcohol, 50, potassium iodide, 12, and iodine, 32·8. When solution is complete the mixture is heated for an hour under a reflux condenser; after cooling, a slight excess of ammonia is added, when the iodothymoform separates out; this is at once collected, washed, dried, and powdered.—*Pharm. Post*, **31**, 549.

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

(*Continued from page 321.*)

MYRTACEÆ.

Pimenta.—*Pimento* is the Spanish name for the tree. *P. officinalis*, Lindley. Latin, *officina*, a workshop; hence *officinalis*, used in a workshop or for manufacturing purposes.

Eugenia.—This genus was named in honour of Prince Eugene of Savoy, who, in addition to being a distinguished general, was a great patron of botany. *E. caryophyllata*, Thunberg.—Greek, καρυόφυλλον (karyopyllon), a spice, probably the clove. It is composed of the two Greek words, κάρυον (karyon), a nut, and φύλλον (phyllon), a leaf, of which the clove may have been supposed to be a combination.

LYTHRARIEÆ.

Punica.—The Latin name for the tree was *Malus punica*; the Carthaginian (punic), apple. It was introduced at an early period into Northern Africa. *P. granatum*, Linn. *Granatum* was also a Latin name for the pomegranate. It probably referred to the numerous seeds (*grana*) which are found in the fruit.

CUCURBITACEÆ.

Citrullus.—Diminutive of Latin *citrus*, the citron tree. The fruit of the colocynth resembles that of the citron in form. *C. colocynthis*, Schrader. The classical name for the plant. Greek, κολοκύνθη (kolokynthe), a pumpkin or gourd.

Ecballium.—Greek, ἐκβάλλω (ekballo), to cast out. This refers to the characteristic action of the fruit, which dehisces with violence on ripening, causing the seed to be projected to a considerable distance. *E. elaterium*, A. Rich. Greek, ἐλατήριος (elaterios), driving away, indicating the purgative action of the drug.

Bryonia.—Greek, βρύω (bryo), to cause to shoot or burst forth. The name indicates the rapid growth of the shoots, as may be seen in the common bryony of our hedges. *B. dioica*, Linn. Latin, diœcious. This is derived from the Greek δίς (dis), double, and οἶκος (oikos), dwelling; diœcious plants bearing their pistillate and staminate flowers on separate plants.

UMBELLIFERÆ.

Conium.—Greek, κώνειον (koneion), hemlock; the juice of which was used by Greeks to poison their criminals. The origin of the word is uncertain. *C. maculatum*, Linn. Latin, spotted. A characteristic of the hemlock is the spotted stem.

Carum.—The Greek, κάρος (káros) of Dioscorides has been supposed to be a Carum, but recent research has thrown doubt upon this name. It is connected with the Arabic *karawya* (caraway fruit), the etymology of which is not known. *C. copticum*, Benth. and Hook. The plant is a native of Egypt, the land of the Copts —*C. carui*, Linn. Arabic, *karawya*, the caraway fruit.

Pimpinella.—It is said to be derived from *bipinnula*, twice pinnate, referring to the bipinnate leaves. *P. anisum*, Linn.—*Anisum* is the classical name for the plant, the origin of the word is not known.

Fœniculum.—The old Latin name for fennel, from *fœnum*, hay. The fragrant odour was supposed to resemble that of hay. *F. capillaceum*, Gilib. Latin, *capillus*, the hair. The fine thread-like divisions of the leaf appear to have suggested hair.

Ferula.—Latin, giant-fennel, probably applied to several species of this genus. It is supposed to be derived from *ferio*, to strike, the dried stems of these plants being used as canes for the castigation of slaves and schoolboys. *F. narthex*, Boiss. Greek, νάρθεξ (narthex), a large umbelliferous plant, probably identical with the Latin *ferula*. In the hollow stalk Prometheus is said to have conveyed the spark of fire from heaven to earth. Asafetida is obtained from this and the following species. The etymology and orthography of the word asafetida have been the subject of much discussion. It is probably a combination of the Arabic *asa*, which signifies healing, and the Latin *fetida*, stinking. —*F. scorodosma*, Benth. and Hook. Greek, σκόροδον (scorodon), garlic, and ὀσμή, a smell. The odour of the volatile oil of asafetida bears some resemblance to that of garlic.—*F. fetida* is a synonym for this species.—*F. galbaniflua*, Boiss and Buhse. Latin, *galbanum*, the gum-resin obtained from this plant; *fluo*, to flow. *F. sumbul*, Hook. fil. The Arabic word *sumbul* is applied to several roots.

Dorema.—Greek, δώρημα (dorema), a gift, indicating the high estimation in which the gum-resinous exudation was held. *D. ammoniacum*, Don.—The name was applied by the classical writers to the gum-resin of some other plant, probably *Ferula tingitana*, Linn., which is indigenous to North Africa. The name is derived from the temple of Jupiter Ammon, in the neighbourhood of which it was probably found.

Peucedanum.—Greek, πευκέδανος (peukedanos), a term originally applied to some umbelliferous plant. *P. graveolens*, Hiern. Latin, heavy-smelling, referring to the strong aroma of the volatile oil.

Coriandrum.—Greek, κορίαννον (koriannon), the fruit or plant of *C. sativum*. It is derived from κόρις (koris), a bug, on account of the offensive odour of the leaves and unripe fruits. This is quite distinct from the aromatic odour of the oil contained in the ripe fruit. *C. sativum*, Linn. Latin, cultivated. The elder Cato refers to the cultivation of coriander in the third century B.C.

Cuminum.—Arabic, *quamoun*, the fruit of the *C. cyminum*. —*C. cyminum*, Linn. The specific name is simply an altered form of the generic.

CORNACEÆ.

Cornus.—Latin, *cornus*, the dog-wood tree, from *cornu*, horn, on account of the hardness of the wood. *C. florida*, Linn. Latin, flowery. The flowers, although inconspicuous individually, are crowded together and surrounded by an involucre of large petaloid bracts.

CAPRIFOLIACEÆ.

Sambucus.—Latin, the elder tree. It is supposed to be derived from *Sambuca*, a word applied to various musical instruments, both wind and stringed. Elder wood may have been used in making the former, the soft pith when removed leaving a tube. *S. nigra*, Linn. Latin, black. The fruit when ripe is of a deep purplish-black colour.

Viburnum.—The old Latin name used by Virgil and others for some species of this genus. It is supposed to be derived from *vieo*, to bend, on account of the pliability of the branches. *V. prunifolium*, Linn. Latin, *Prunus*, a plum tree; *folium*, a leaf. The leaves resemble those of some species of *Prunus*.

RUBIACEÆ.

Uncaria.—Latin, *uncus*, a hook. These climbing plants are provided with articulated peduncles, which taper from a broad base. The entire inflorescence when falling breaks off at the articulation about half-way up the peduncle, the remaining portion of which becomes hardened and elongates into a strong hook, by means of which the plant is supported. *U. gambier*, Roxburgh. Gambier is the Malay name for the astringent extract, known officially as catechu, which is prepared from this plant.

Cinchona.—In 1638 the Countess Ana de Osorio, wife of the fourth Count of Chinchon, Spanish Viceroy of Peru, was cured of intermittent fever by the use of the powdered bark. After her recovery she caused large quantities of the

bark to be collected, and the remedy was introduced into Spain under the name of Polvo de la Condosa (the Countess' powder). The genus was named *cinchona*, by Linnæus, in commemoration of the Countess; the correct spelling would have been *chinchona*. Chinchon is a small town in Spain, from which the Count derived his title. *C. officinalis*, Linn. Latin, *officinal*. This was at one time the chief source of the bark, and a variety of this species, the *quinquina*, doubtless afforded the powder which cured the Countess (see above). Quinine is derived from the Indian word *quina*, bark.—*C. calisaya*, Weddell. Calisaya is a native term for the bark in Peru and Bolivia.—*C. ledgeriana*. This is usually regarded as a variety of *C. calisaya*. In 1865, Charles Ledger, an English traveller, collected the seed in Bolivia, and brought it to this country. It was eventually sold to the Dutch Government, and plants raised from it in Java have proved a great success, yielding a very large percentage of quinine. — *C. succirubra*, Pavon. Latin, *succus*, juice; *rubra*, red. The sap, when it exudes, is colourless, but on exposure to the air it becomes milky, rapidly changing to red.

Remijia.—After Remijo, a distinguished Brazilian physician. *R. pedunculata*, Triana. The inflorescence of this species is a long stalked cyme.—*R. purdieana*, Weddell. This shrub was discovered by Purdie, a curator of the Botanic Gardens in Trinidad, in 1837.

Coffea.—The genus was named by Linnæus from the word coffee. This is derived from the Turkish, *quahveh* or Arabic, *qahweh*, both words meaning coffee. *C. arabica*, Linn. Coffee was introduced into Europe from Arabia, but the plant is indigenous to tropical Africa.—*C. liberica*, Hiern. Liberian coffee is derived from this species.

Psychotria.—The derivation of this name is uncertain, but it is probably connected with the Greek ψῡχή (psyche), life, from the valuable medicinal properties of the following species:—*P. ipecacuanha*. This is derived from the native name for the drug in Brazil, which in the earliest records appears to have been called Igpecaya. It is now termed Poaya. The native word is said to mean "the smaller roadside sick-making plant."

VALERIANACEÆ.

Valeriana.—The name has been in use since the ninth century. Its origin is doubtful, but it is usually supposed to be derived from Latin *valeo*, to be well, owing to the medicinal value of *V. officinalis*.—*V. officinalis*, Linn. Latin, *officinal*.

COMPOSITÆ.

Inula.—The old Latin for elecampane, probably derived from ἑλένιον (helenion), the Greek name for the plant. This is probably derived from ἕλος (helos), a marsh, the plant usually occurring in damp situations. It has also been referred to Helen, the heroine of the Trojan war, from whose tears the plant is said to have sprung. *I. helenium*, Linn. Greek, ἑλένιον (see above). Elecampane is probably derived from *Enula* (*Inula*) *campana*, from the province of Campania, on the west coast of Italy, where the plant was common.

Anacyclus.—A contraction of *Ananthocyclus*, a name proposed for the genus by Vaillant. Greek, ἀ, not; ἄνθος (anthos), a flower; κύκλος (cyclos), a circle. It refers to the row of ovaries, without flowers, found in a circle round the disk of the capitulum. *A. pyrethrum*, DC. Greek, πύρεθρον (pyrethron), the name applied by Dioscorides to this or possibly to some allied plant. It is probably derived from πῦρ (pyr), fire, in allusion to the burning taste of the roots. The English name pellitory of Spain is a misnomer. The plant does not come from Spain but from North Africa. Pellitory is applied to several plants, but is more correctly confined to the Pellitory of the Wall, the *Parietaria*, from Latin, *paries*, a wall.

Achillea.—Achilles is supposed to have used some species of this genus to heal the wounds of Telephus. *A. millefolium*, Linn. Latin, *mille*, a thousand, *folium*, a leaf. The leaf is divided into numerous minute divisions.

Anthemis.—Greek, ἀνθεμίς (anthemis), some flower similar in appearance to camomile, from ἀνθέω (antheo), to blossom. Presumably it received its name from the abundance of flowers or florets usually found in these plants. *A. nobilis*, Linn. Latin, well-known, famous. Tragus, who named the plant *Chamomilla nobilis*, probably used the term to express the German "edel," which, in botanical language, indicates useful. He may have wished to indicate its superiority to the common chamomile of Germany, *Matricaria chamomilla*. Camomile or Chamomile is the Greek χαμαίμῆλον (chamaimelon), derived from χαμαί (chamai), on the ground; μῆλον (melon), an apple. It probably referred especially to *Matricaria chamomilla*, Linn., the flowers of which have been supposed to have the smell of an apple. The reference to the ground indicates the old idea that the more it was trodden upon the more luxuriantly the plant would grow:—"For though the chamomile the more it is trodden on, the faster it grows; yet youth, the more it is wasted, the sooner it wears."—*Shakespeare*.

Artemisia.—The classical name for some plant of this genus which was said to have been dedicated to Artemis (Diana). The plant is said to have been used to induce precocious puberty and to have been named after the goddess, on account of its employment for this purpose. Even in the days of Pliny, however, the origin of the word appears to have been doubtful, as he mentions a belief that it was named after Artemisia, Queen of Mausolus, King of Caria, who was said to have adopted the plant and given it her name. *A. absinthium*, Linn. ἄψινθος (apsinthos), the Greek for wormwood. Wormwood is derived from the Anglo-Saxon *wermôd*, mind preserver, indicating the supposed value of the plant in mental disorder.—*A. maritima* var. *Stechmanniana*, Besser. The common *A. maritima*, Linn., is frequent on the British and other coasts, and thus receives its name. The above variety occurs chiefly on the Russian steppes. The variety is named after J. P. Stechmann, who wrote on this genus. *Santonica* from Greek σάντονιον (santonion), wormwood, derived from the Santoni, a tribe of Southern Gaul.

Arnica.—The source of this word is doubtful. According to some authorities it is derived from ἀρνακίς (arnakis), a sheep's skin, from the texture of the leaves. Others consider it to be a corrupton of ptarmica, from the Greek πταρμός (ptarmos), sneezing, the powdered flowers being used as a sternutatory. *A. montana*, Linn. Latin, mountainous. The plant is a native of alpine meadows and mountainous districts, reaching almost to the level of the snow.

Taraxacum.—Greek, τἄράσσω (tarasso), to stir or disturb; owing to the diuretic and aperient properties of the dandelion root. *T. officinale*, Wiggers. Latin, *officinal*. The plant has been used in medicine for many centuries. By the Arabian physicians it was termed *Tarakhshlagun*. The synonyms *Leontodon*, *Dent de lion* and *Dandelion*, indicate the resemblance to a lion's tooth in the dentate margin of the leaf.

Lactuca.—Latin *lac*, milk. The plants are permeated with vessels containing a bitter, milky juice. *L. virosa*, Linn. Latin, poisonous. The plant can hardly be considered poisonous in the usual acceptation of the word, but the opiate smell and sedative action of the juice are undoubtedly responsible for the name.—*L. sativa*, Linn. Latin, cultivated. This, the common garden lettuce, has been cultivated from ancient times.

Grindelia.—The genus was named after D. H. Grindel, a German botanist, who died in 1836. *G. robusta*, Nuttall. This probably refers to the hardy character of the plant.—*G. squarrosa*, Dunal. Latin, rough. The scales of the involucre have a rough surface.

Arctium.—Greek, ἄρκτος (arktos), a bear. The roughness of the globular fruits are suggestive of a bear's coat. *A. majus*, Schkur. Latin, greater. It is larger than some other species of the genus. The synonym *Lappa* is from the Celtic *Llap*, a hand, the bristly fruit taking firm hold of neighbouring objects. The common English name, burdock, is in allusion to the large leaves, resembling those of the dock, and the rough prickly fruit known as *burs*.—*A. minus*, Schkur. Latin, smaller. The lesser burdock.

Calendula.—Latin, *calendæ*, the first day of each month. Under favourable conditions flowers are to be found open every month in the year. *C. officinalis*, Linn. Latin, *officinal*. The source of the medicinal Calendula. The English, marigold, refers to the colour of the flower which was dedicated to the Virgin Mary.

LOBELIACEÆ.

Lobelia.—From Mathias de l'Obel (Lobelius), a distinguished botanist who was born at Lille in 1538. He migrated to London, where he wrote some valuable works, and was appointed "botanographer to King James I." *L. inflata*, Linn. Latin, inflated. The persistent calyx becomes much distended, giving an inflated appearance to the fruit.

ERICACEÆ.

Arctostaphylos.—Greek, ἄρκτος (arktos), a bear; σταΦυλή (staphyle), a bunch of grapes. The clusters of red berries may have been supposed to have been a food for bears, or, being found in wild mountainous districts, the name may simply indicate the plant had the same habitat as the bear. *A. uva-ursi*, Sprengel. Latin, *uva*, a berry; *ursus*, a bear. Practically a repetition of *Arctostaphylos*, of which bear-berry is the English equivalent.

Gaultheria.—The genus received its name to commemorate Dr. Gaulthier, a physician and botanist, who lived at Quebec in the eighteenth century. *G. procumbens*, Linn. Latin, *procumbo*, to bend down. The plant is a small creeping shrub with long prostrate stem. It is an evergreen as indicated by its English name, Wintergreen.

SAPOTACEÆ.

Dichopsis.—Greek, δίχᾰ (dicha), double; ὄΨις (opsis), appearance. The leaves of *D. gutta* have a dull green upper surface, but below are covered with close, silky, golden-orange tomentum, the two distinct colours giving a characteristic appearance to the tree. *D. gutta*, Bentley. Gutta is the Malayan term for gum or juice, including the product of this tree.

STYRACEÆ.

Styrax.—Greek, στύραξ (styrax), the Greek name for the *Styrax officinale*, Linn., the source of the balsamic resin, which was also known as styrax. *S. benzoin*, Dryander. Benzoin is supposed to be derived from the Malayan words *Lubán Jáwi*, meaning "Incense of Java." Jáwi appears to have included Sumatra, where benzoin is produced. Benjamin is another corruption from the same source.

APOCYNACEÆ.

Strophanthus.—Greek, στρόΦος (strophos), a twisted rope ἄνθος (anthos), a flower. The name refers to the peculiar manner in which the segments of the corolla are twisted together in the bud. *S. kombé*, Oliver. Kombé is the native name for the arrow poison prepared from the seeds in tropical Africa.—*S. hispidus*, D.C. The seed is covered with silky appressed hairs.

OLEACEÆ.

Fraxinus.—The Latin classical name for the ash tree. From Latin *frango*, to break, on account of the brittle character of the wood. *F. ornus*, Linn. *Ornus* was the Latin for a wild mountain ash, probably derived from *orno*, to adorn, on account of its elegant appearance. Manna, the sweet concrete juice, receives its name from its supposed resemblance to the manna of the Bible, derived from the Hebrew words *man hu*, what is it?

Olea.—Oliva is the old Latin name for the olive tree, connected with the Greek ἔλαιον (elaion) oil, and ἐλαια (elaia) the olive tree. *O. europæa*, Linn. Although a native of Asia Minor, the tree has for so long been cultivated in Europe that it has received its name from this continent.

ASCLEPIADACEÆ.

Hemidesmus.—Greek, ἡμι (hemi), a prefix meaning half, δεσμός (desmos), a bond. The filaments have peculiar triangular appendages at their apices, which, uniting at their margins, form a cover to the stigma. *H. indicus*, R. Brown. The plant grows abundantly in India.

LOGANIACEÆ.

Strychnos.—Greek στρύχνος (strychnos), the name for some solanaceous plant probably possessing poisonous properties. *S. nux vomica*, Linn. Latin *nux*, a nut; *vomica*, an evil or plague. This is the mediæval name for the drug, due doubtless to its very poisonous properties.—*S. ignatii*, Bergius. Ignatius beans were so named by the Jesuits after the founder of their order, Ignatius Loyola. The seeds were supposed in the Philippine Islands to act as a charm, and a certain Jesuit father is reported to have owed his life to the fact of having a seed in his possession when a would-be murderer endeavoured to poison him by the exhalations from certain poisonous herbs commonly used for the purpose.

Spigelia.—The genus was named by Linnæus after Adrian Spigelius, who was born in Brussels and became professor of anatomy and surgery in Padua. He was also a botanical author. He died in 1625. *S. marilandica*, Linn. Maryland, one of the United States of America, of which the plant is a native.

Gelsemium.—Formerly Gelseminum, from *Gelsemino*, an old Italian name for the jasmines. *G. nitidum*, Linn. Latin, bright, polished. Both leaves and corollas have smooth, shining surfaces. Jasmine is derived from *yásmin*, the Persian name for the common jasmine.

GENTIANACEÆ.

Gentiana.—Greek, γεντιάνη (gentiane). According to Pliny, Gentius, a king of Illyria, discovered the tonic properties of the gentians. *G. lutea*, Linn. Latin, yellow. This species has bright yellow flowers.

Swertia.—Linnæus named this genus after E. Sweert, a Dutch horticulturist and author of 'Florilegium,' who lived in the 17th century. *S. chirata*, Ham. The Sanscrit name for the plant is *Kirāta-tikta*, meaning the "bitter plant of the Kiratas." The Kiratas are "an outcast race of mountaineers in the north of India."

Menyanthes.—Greek, μηνίανθος (menianthos). The origin of the name is uncertain, as also is the plant to which it originally referred. It may be derived from μήν (men), a month; ἄνθος (anthos), a flower, indicating its use as an emmenogogue, or from μίννυθα (minuntha), a short time, from the short duration of the flowers. *M. trifoliata*, Linn. The leaves of this species are trifoliate, each leaf consisting of three nearly sessile leaflets.

Erythræa.—Greek, ἐρυθρός (erythros), red, on account of the usual colour of the flowers. *E. centaureum*, Pers. According to Pliny the name is derived from the centaur Chiron, who cured himself with it from a wound he had accidentally received from an arrow poisoned with the blood of the hydra. It is doubtful to what plant Pliny referred.

(*To be continued.*)

ROYAL INSTITUTION.

In the course of the lecture recently delivered at the Royal Institution by Lord Rayleigh on

Transparency and Opacity,

the lecturer confessed that he could not help mixing up the French and English systems of weights and measures. If an eminent mathematician, and a Senior Wrangler to boot, like Lord Rayleigh finds difficulties attend the mental process of converting one system into the other, it is no cause for surprise that average Englishmen should also be occasionally puzzled in a like manner. The humour of the situation was too much for the Royal Institution audience, inasmuch as the chair was occupied by Sir Frederick Bramwell, the author of a letter to the *Times* on this much vexed question, to which reference was recently made in these columns (*ante*, p. 286). A hearty laugh rose when Lord Rayleigh remarked that for his own part he would like to see the cumbersome English system abolished. Lord Rayleigh commenced his subject by defining the terms transparency and opacity. A medium is said to be transparent if the light which traverses it pursues its course with the same intensity throughout. Any defect in transparency is known as opacity, and is due to the stoppage of some of the rays of light. Another cause of extinction of light is well seen in snow clouds, where a part of the light is reflected back, while part is refracted. In this case more light suffers refraction than reflection. In order to show the fundamental principles connected with refraction and dispersion Lord Rayleigh performed some simple experiments with a prism, showing how a beam of white light may be split up and thrown on a screen, giving the many-coloured bands of the solar spectrum. By using a direct vision prism it was shown how refraction is destroyed while dispersion remains, the rays being projected directly upon the screen instead of suffering refraction to the right or left. This led the way to a consideration of the spectroscope.

The effect of light falling on snow may be readily explained by taking a perfectly white, dry towel, soaking one half of it in water and wringing it to remove superfluous liquid. On holding up the towel so treated the dry portion appears whiter than that which has been wetted. As a matter of fact, the rays of light falling on the towel get through the part that is wet better than through the dry part, where the reflection is considerable.

Experiments were then made with a view to explaining why it is generally possible to see a solid in a liquid, *e.g.*, a glass rod in water. If a liquid be of the same optical quality as the solid which is placed in it, the solid body cannot be seen. It is possible to make a mixture of benzol and carbon disulphide in such proportions that a glass rod will not be visible when dipped below the surface. It should be remembered that the glass must be free from flaws and cracks. Since common glass rod possesses these defects, it is well to take a better kind, such, for example, as the stem of a wine-glass. In these experiments different kinds of lights give different results, so that it is necessary to specify the exact nature of the light incident on any particular mixture that may be employed. This is owing to the fact that the optical qualities of a substance are not the same in all kinds of light, *e.g.*, being different in blue light from what it is in red light.

Lord Rayleigh described a form of spectroscope, devised by himself about twenty years ago, containing ten right-angled prisms of glass, together with layers of benzol and carbon disulphide. A disadvantage possessed by this instrument is its variation with temperature, consequent on the alteration in volume of the liquid. Hot air is less refractive than cold air, and is more readily seen. To illustrate this it is only necessary to hold a hot poker before a white screen. A glass vessel with flat sides was filled with glass powder, uniformly sifted, and free from dirt. It was seen to be opaque, but on filling up the interstices of the powder with a liquid of the same refractive index as the glass a yellow light of a high degree of purity streamed through the vessel. In speaking of the spectroscope, the lecturer mentioned a principle in optics, that retardations which do not exceed a quarter of a wave-length are of no importance. The resolving power of a spectroscope is dependent, not only on the dispersion, but also on the width of the aperture. This was verified by experiment.

The cause of the blue colour in the sky next received attention. Tyndall and Rucker, of Vienna, among others, have attacked this problem. Lord Rayleigh showed how the effect may be imitated by slowly precipitating sulphur, by the addition of an acid to a solution of sodium hyposulphite. On passing the light through a Nicol's prism the colour of the transmitted light will be found to be blue. It is not likely that, as some have thought, the blueness of the sky is due to the presence of finely-divided foreign matter in the atmosphere; the view that it is due to the light dispersed from the molecules of the air themselves is much more worthy of acceptance. Clark Maxwell calculated that each cubic centimetre of air contains nineteen million million million molecules, and by calculating the retardation which they offer to light there is every chance of arriving at the solution of the mystery. It is interesting to consider how many molecules are present in air under what is gencrally regarded as a high vacuum, viz., a millionth of an atmosphere of pressure. Lord Rayleigh thought it possible that a closer investigation of the subject might throw light on the question of the ultimate size of molecules.

The exhibits included an X-ray installation, by Alfred E. Dean, 73, Hatton Garden, London, E.C., who distributed catalogues containing prices and descriptions of all the paraphernalia used in X-ray photography.

In the fourth of his course of lectures on

The Mechanical Properties of Bodies,

Lord Rayleigh discussed the question of the differences between solids and liquids. Liquids at rest are unable to support a shearing strain. It has been said by some physicists that whereas solids will bear both tension and pressure, liquids will only bear pressure. This is not a fact, as was readily proved by taking a glass tube about fifty inches long, in which mercury was standing at a height of some forty-six inches; thirty-two of these inches contained mercury at atmospheric pressure, but the sixteen inches above contained mercury that was suffering tension. As a matter of fact, gases will not bear tension, but liquids have this property. A tube of mercury seventy inches high was then shown, where the mercury at the top of the tube was bearing one whole atmosphere, or thereabouts, of tension. Solid bodies are said to possess two elastic constants, one that resists cubical extension and contraction, the other resisting shearing. Indiarubber and jellies are easily sheared, *i.e.*, one layer readily slides upon another, but these bodies do not admit of cubical expansion. It was once thought that a relation existed between these two constants, but they are now considered to be independent.

When a solid body, *e.g.*, a bar of iron, is bent, the concave surface is under compression, the convex under tension; between these two extremes there is a neutral line. In the construction of girders for bridges and other structures, it is of vital importance to clearly understand which parts are under compression and which under tension. This is readily seen by sawing a wooden plank half through, holding the saw horizontal. When the ends of the plank are supported, so long as the sawn surface is uppermost, enormous weights may be suspended from it, but on turning the board over on the other side the strength is enormously reduced, so much so that the plank immediately snaps in two on applying a much smaller weight. Extended sheets of metal were next considered. By being rolled out their strength is lessened; to obviate this difficulty iron is corrugated, because it is thereby rendered far stronger. Speaking of the bending of curved surfaces, Lord Rayleigh pointed out that a hemisphere can be bent, but a spherical sheet of material does not yield in the same way. This explains why a metal ball is indented when dropped with sufficient force. In bending a curved surface one curvature is diminished, while the other is increased. Clausius' theorem was then given as of general application to building construction. Let a triangle be supposed to rest in a vertical position on a firm support. The sides of the triangle are hinged together, and from the apex hangs a weight. If the length of each rod be multiplied by the tension or compression to which it is subjected, the algebraical sum of these quantities will be equal to the product of the weight supported and its height above the points of support.

Lord Rayleigh went on to speak of liquids, especially with two of their properties, viz., viscosity and capillarity. It is not generally known that a mixture of alcohol and water is more viscous than either of these liquids. This is shown by passing the liquids along a capillary tube and noting the rate of flow; the mixture takes three times as long to traverse a given distance as is required by pure watcr. The viscosity is proportional to the time taken, but in arriving at numerical results certain details have to be taken into account, *e.g.*, the diameter of the tube. It is interesting to

note that the motion of water through a capillary tube is not like the passage of water through a main. In the former case the current is most rapid in the centre of the tube, and at the inner surface of the tube there is no current at all. In water-mains, on the other hand, water is constantly eddying up, so that there are no regularly stratified layers. Viscosity considerations lead to a method of detecting whether or not an egg is hard boiled. A raw egg when rotated on its long axis quickly slows down, owing to the viscosity of the fluid portion, whereas a boiled egg rapidly assumes a vertical position.

The study of the viscosity of gases has led to interesting results as to the mechanical constitution of gases. The viscosity of gases is the same, whatever their density. The law of Boyle follows easily from a study of the viscosity of gases, as was shown by Maxwell. This law in its dynamical aspect may be rendered intelligible to beginners by likening the shower of gaseous molecules on the walls of the containing vessel to the effect of a billiard ball on the pocket at the moment of entering. Finally, it was pointed out that the velocity of the individual particles of a gas may be compared in order of magnitude to the rate at which sound is propagated in air, viz., with a velocity of about one thousand feet per second.

SOME USEFUL VARNISHES.

BY "KAM."

Varnishes of one kind or another are in such frequent demand amongst photographers, that anything like an apology for collecting and tabulating those in most general use would be decidedly out of place. It is well to mention that all the formulæ given have been thoroughly tested, and proved satisfactory for their particular purposes.

Hard Negative Varnish.—The following is a really good varnish for negatives on glass. The plate must be very slightly warmed before applying the varnish, and then heated until it is hotter than the hand can bear.

Orange Shellac	1 ounce.
Sandarac	1 ounce.
Canada Balsam	30 grains.
Methylated Alcohol	8 ounces.

Put the ingredients in a bottle, and shake well at intervals until dissolved. Filter twice through paper, and it is ready for use.

Cold Negative Varnish.—This is intended for application to the negative without the necessity of heating the plate. It is made thus :

Gum Dammar	40 grains.
Benzole	1 ounce.

Filter the mixture, and apply to the cold negative. It is well to have first slightly warmed it, however, to drive out any moisture that may be present. Another varnish of this class that is easily made is a mixture of equal parts of japanners' gold size and benzole.

Matt Varnish.—This is used to give the well known ground glass effect to the glass side of negatives and transparencies. There are various ways of making it, but the following are both good :—

(1)	Gum Mastic	20 grains.
	Sandarac	90 grains.
	Ether	2 ounces.
	Benzole	1 ounce.
(2)	Sandarac	6 grains.
	Shellac	40 grains.
	Mastic	40 grains.
	Ether	12 drachms.
	Benzole	1 drachm.

In order to ensure this varnish drying with a matt surface, it is imperative that the plate be as cold as possible when it is applied.

If the grain given is not sufficiently coarse, add a little more benzole.

Colouring Varnish.—It is often a convenience to be able to tint either negative or matt varnish, to prevent a thin negative printing too quickly. This may be done, as required, by means of a strong solution of aniline "malachite green soluble in alcohol." Make a saturated solution of this colour in strong alcohol, and add it in any proportion to either varnish to give the tint desired.

Backing Varnish.—An easily applied backing varnish for preventing halation is made thus :—

Aurine	2 grains.
Plain Collodion	1 ounce.

This is applied by pouring on to the back of the plate, the surplus being drained from one corner and returned to the bottles; the film will not interfere with development in the slightest, and it can be removed by lightly rubbing it with a damp cloth.

Retouching Varnish.—The following is a cheap retouching medium that answers well, so long as it has not to stand varnishing. It may be used either before or after varnishing the film.

Sandarac	400 grains.
Castor Oil	80 grains.
Alcohol	6 ounces.

Another that is in very common use is—

Resin	360 grains.
Dammar	70 grains.
Turpentine	4 ounces.

Also the following :—

Dammar	40 grains.
Canada Balsam	20 grains.
Turpentine	4 ounces.

Dead Black.—This is much in request for dressing the inside woodwork, etc., of cameras, and is usually made in a haphazard manner by mixing lamp-black with negative varnish until it is of the thickness of cream. To bring it to something like a formula, I have tried to express the relative proportions, thus :—

A.—Alcohol		7 ounces.
	Shellac	1 ounce.
B.—Lamp-Black		2 ounces.
	Alcohol	1 ounce.

Rub B together until quite free from dry lumps, then add A a little at a time, until both A and B are thoroughly incorporated.

Another dead black is made by mixing lamp-black with japanners' gold size to the consistency of cream, and thinning it with turpentine as required. These blacks answer most purposes, and look really black, but they do not adhere very well to metal. The only black I know suitable for the best purposes is a commercial preparation known as "Nigrogene," made by the Vanguard Manufacturing Co., Maidenhead; this sticks so firmly to metal that it may be vigorously rubbed until it takes a brilliant polish, rather than part company with its support.

Brilliant Black.—A brilliant black is frequently required in connection with photography; the simplest thing, if only a little is wanted, is to break up a stick of black sealing-wax, and dissolve it in enough methylated spirit to rather more than cover it. The varnish should be quite thick, but may be thinned with spirit as required. This dries very quickly, and it is intensely black and brilliant, though somewhat brittle.

Varnish for Maps, Drawings, Etc.—Although not strictly photographic, many photographers have occasion to mount and prepare the Christmas supplements for framing, the most popular method being to varnish the prints and frame them in gold, without margin or glass. It is a common practice to mount the prints on canvas and a stretcher, but a far better method (especially if they are ever to be packed for travelling) is to mount them on heavy mill-board, and size them with a coat of warm gelatin solution, made by dissolving 1 oz. of gelatin in 10 ozs. of water. When this is quite dry apply a coat of the following :—

Canada Balsam	1 ounce.
Turpentine	2 ounces.

and the picture will be much improved. The same treatment holds good for the protection of maps, plans, etc., that have to be exposed to atmospheric conditions. It is well to observe that this varnish should be applied in a tolerably warm room, which will enhance its brilliancy to a marked degree.—*Photogram.*

Mentholised Iodol.—Since iodol, which is often used in the treatment of diseases of the nose and pharynx, is characterised by an unpleasant odour, to which patients take exception, Schaeffer proposes to combine it with one per cent. of menthol. This mixture is recommended for insufflation in catarrhal affections and in ulcerated conditions of the nose and larynx.—*L'Union Méd.*, 39, 450.

BACTERIOLOGICAL NOTES.

SANFELICE, BUSSE, AND OTHERS have obtained yeast-like organisms from some malignant tumours, and with yeasts isolated from certain fruits have produced tumour-like formations. At a recent meeting of the Royal Society Plimmer showed an organism which he regards as a yeast, isolated from a case of cancer of the breast. Plimmer stated that he had studied the bodies which have been regarded as protozoa and described by Ruffer and himself, Metschnikoff, and others in over 1200 cases of cancer, but in only nine out of this number were these bodies numerous. In the case in question they were present in enormous numbers. Thin slices were cut from the growth with a sterilised knife and placed in flasks containing a special culture medium. This consisted of an infusion made from cancer, to which was added after careful neutralisation 2 per cent. of glucose and 1 per cent. of tartaric acid. Hydrogen was then passed through the flasks, which were thus incubated anaërobically. Grown in this way, a cloudiness becomes apparent in forty-eight hours, and a sediment gradually forms. Microscopically the organisms appear as rounded bodies, the central portion of which stains deeply, surrounded by a thick capsule. Their reproduction appears to be by budding, and Plimmer considers that these bodies correspond morphologically to those found in the original tumour, and with the structures described by Ruffer and others as protozoa. The organism will grow aërobically, but rapidly loses its virulence under such conditions. On "cancer-agar" it forms roundish colonies, at first white, afterwards yellowish. On potato a thick whitish layer develops, which changes to a yellowish brown. Animal experiments were not conclusive; in some cases a general infection with nodules in the various organs; in others no result was obtained. We shall await with interest further particulars regarding this organism.—*Lancet*, 1899, 1, p. 826.

AN INSTALLATION FOR THE STERILISATION OF WATER by means of ozone has now been in operation at Lille for some months, and a Commission, including Drs. Roux and Calmette, has recently issued a report on its efficiency. The ozone was produced electrically and was thoroughly mixed with the water, the amount present varying from 5 to 10 Mgms. of ozone per litre of air. The amount of water treated was 35 cubic metres per hour. The conclusions of the Commission are very favourable. The apparatus worked well and simply, and brought about a marked sterilisation of the water. The untreated water contained over 2000 organisms per cubic centimetre, after passing through the ozoniser it contained only two or three organisms (*B. subtilis*) per cubic centimetre.

JOOS CONSIDERS THAT A SERUM-AGAR CULTIVATING MEDIUM gives much better results than the ordinary Löffler's serum in the diagnosis of diphtheria by cultivation. The medium he recommends is prepared as follows:—300 C.c. of ordinary blood serum is mixed with 150 C.c. of distilled water and 50 C.c. of normal caustic soda solution. The mixture is heated in a flat-bottomed flask over a water-bath for two to three hours at a temperature of 60° to 70° C. The temperature is then raised to 100° C. or, better still, the flask is placed in the steam-steriliser for half to three-quarters of an hour. An equal volume of peptone beef broth and 20 Gm. of agar are added and dissolved as quickly as possible. When solution is complete the mixture is filtered, then sterilised for a quarter of an hour at 100–110° C. in the autoclave and distributed in Petri dishes. The peptone beef broth, which is added during the process, is prepared by digesting 500 Gm. of beef (some days old) with 1000 C.c. of water, filtering, and adding 20 Gm. of peptone and 5 Gm. of salt. The mixture is then rendered feebly alkaline by the addition of about 7 to 8 C.c. of normal caustic soda solution per litre. The secretion or membrane is rubbed over the special medium in the plates and incubated at 37° C. for twelve to fifteen hours, though in some cases the diagnosis can be made in five or six hours (*Centr. f. Bak.*, 25, No. 8/9, p. 296). Joos states that his method yields absolutely certain results.

IN THE SAME NUMBER of the *Centralblatt* (p. 278), Klein makes a further contribution to the bacteriology of the dejecta. In a former number of the *Pharmaceutical Journal* the characters of the *Bacillus enteritidis sporogenes* were given, and Klein now describes another organism, the *Bacillus cadaveris sporogenes*, which has to be distinguished from the former. It is a large anaërobic bacillus, staining by Gram's method, and in its morphological and pathogenic characters resembling the *B. enteritidis sporogenes*. It does not, however, curdle milk in the typical manner, forms spores on agar in two or three days, and the colonies on agar give out branching, filamentous extensions, whereas those of the *enteritidis* are greyish white, and with a crenated or regular margin, and no branching filaments.

A USEFUL DOUBLE STAIN FOR BLOOD, bacteria, etc., has been devised by Jenner (*Lancet*, 1899, I., p. 370). When to a solution of eosin some solution of methylene blue is added, a precipitate forms, probably a definite compound of eosin (acid) with methylene blue (base), as the melting-point of the crystals obtained by modifying the conditions is constant. This compound forms the basis of the new stain and is prepared as follows:—Equal parts of a 1·2 per cent. to 1·25 per cent. solution of Grübler's water soluble eosin, yellow shade, in distilled water, and of a 1 per cent. solution of Grübler's medicinal methylene blue, also in distilled water, are mixed together in an open basin (not in a flask), and thoroughly stirred with a glass rod. The mixture may with advantage be left for twenty-four hours. It is next filtered, and the residue is dried at a low temperature, not exceeding 55° C. in an incubator or water oven. When dry the residue is scraped off the filter paper and finely powdered. The fine powder is shaken up with distilled water, filtered, and the residue on the filter paper washed, dried, and powdered. For use, 0·5 Gm. of the powder is shaken up with 100 C.c. of pure methyl alcohol. This solution keeps well. Cover-glass preparations are made in the ordinary way, and as soon as dry, stained by flooding or floating in a watch-glass, no previous fixation being required. The cover-glasses must be absolutely clean, and during staining the preparation must be covered with a watch-glass to prevent evaporation and consequent precipitation. In from one to three minutes the stain is rapidly poured off and the specimen rinsed, usually for five to ten seconds, in distilled water until the film becomes pink. It is then carefully dried and mounted in xylol balsam. In blood-films so stained the red discs appear terra-cotta, the nuclei of the white cells are blue, the platelets are mauve, the granules of the polymorpho nuclear white cells and of myelocytes are red, the granules of the basophils (mast cells) when present are dark violet, and bacteria, filariæ, and malarial parasites are blue. To obtain good, clear, sharply-defined preparations of bacteria in blood, smears, or pus the writer has found it advantageous to prolong the staining from twenty to thirty minutes, with longer washing afterwards.

PHARMACEUTICAL SOCIETY.

EVENING MEETING IN EDINBURGH.

The sixth and last evening meeting of the session was held in the Society's house, 36, York Place, Edinburgh, on Wednesday, April 19, Mr. J. Laidlaw-Ewing in the chair. The minutes of the last meeting were read and adopted. Apologies for absence were intimated from Messrs. Nesbit, Davidson, Lunan, Coull, Cockburn, and Duncan.

Mr. Bertram Cockburn had contributed the three following brief notes :—

Liquor Strychninæ Hydrochloridi.

An objection to the use of strychnine hydrochloride in the preparation of the official liquor is the readiness with which the crystals effloresce on exposure to air, with consequent variation in strength. The author would suggest that the strychnine hydrochloride be extemporised by adding to the alkaloid sufficient hydrochloric acid to form the neutral hydrochloride, and adjusting the volume of the solution to contain 1 per cent. of $C_{21}H_{22}N_2O_2$, HCl, $2H_2O$. The result is a stable solution of definite strength free from the objection to the solution of strychnine hydrochloride of the 1885 Pharmacopœia. In that preparation, owing to the excess of hydrochloric acid employed, the strychnine hydrochloride was frequently "salted out." The suggested formula is :—

Strychnine	1 Gm.	or 72 Grs.
Diluted Hydrochloric Acid	1 C.c.	,, 75 ℥
Alcohol 90 per cent.	30 C.c.	,, 5 Fl. oz.
Distilled water to produce	122 C.c.	,, 1 pint.

The solution prepared by the above formula is very faintly acid, as was proved by titrating back with N/100 alkali.

A Pharmacopœial Test for Acetanilide.

In the appendix to the 1885 Pharmacopœia the following test for the purity of phenacetin is given : "A mixture of 5 grains of phenacetin with 2 fluid drachms of solution of potash boiled should yield no unpleasant odour when again boiled after the addition of 5 drops of chloroform." This carbylamine reaction, meant to detect the presence of acetanilide, is not included in the characters and tests for phenacetin, B.P., 1898, but is mentioned under acetanilide as a test which distinguishes it from phenacetin. It is, however, to be noted that phenacetin also furnishes phenyl-carbylamine after prolonged boiling with solution of potash and chloroform (E. Ritsert, *Pharm. Zeitung*, 1890, s. 75). Three samples of phenacetin were examined, with the result that this statement was confirmed. The reaction, therefore, as a test to distinguish between these two substances is unreliable.

Liquor Arsenici Hydrochloricus.

It was suggested to the author that the boiling which is necessary to dissolve the arsenious anhydride in the preparation of this solution drives off part of the hydrochloric acid. The arsenious anhydride and hydrochloric acid for a quantity of this solution were mixed with the water, but not heated, and the acidity determined by means of normal alkali. A quantity of the solution was then carefully prepared according to the pharmacopœial directions, and the acidity again determined ; the number of cubic centimetres of normal alkali required was in the two cases almost exactly the same, indicating no appreciable loss of acid. This was also proved by the fact that a piece of blue litmus paper held in the neck of the flask was only slowly reddened.

Mr. Dott said he agreed with the author that to make the strychnine solution with alkaloid and the correct proportion of acid was better than the official method. As to the acid solution of arsenic, he had found that in boiling a concentrated solution of arsenic in hydrochloric acid there was a loss of arsenic, but such was not likely to be the case in a dilute solution.

Mr. Cowie said the suggested formula might do well for large quantities, but it would not be so easy to get the exact equivalents of acid and arsenic on the small scale. He would prefer to keep to the present formula. In regard to the solution of arsenic, it should be borne in mind that no hydrochloric acid would be given off till the liquid reached a concentration equal to 20 per cent. of hydrochloric acid.

Mr. Boa said the official formula for solution of strychnine possessed the merit of simplicity. Pharmacists kept the strychnine hydrochloride in stoppered bottles, and there should, therefore, be no error from efflorescence. He preferred the official process.

Mr. J. Rutherford Hill said it was interesting in this connection to mention a case brought under his notice by Mr. Jack, of Arbroath, in which a 20-ounce quantity of liquor strychninæ hydrochloridi presented a number of small crystals adherent to the bottom and sides of the bottle. It was made strictly B.P., and was kept in a green glass fluted poison bottle. Curiously a quantity kept in a white glass bottle did not deposit crystals. The crystallisation did not seem due to alkali from the glass, for the solution was still practically neutral and, if anything, faintly acid. The salt looked all right, but had not been examined. Possibly it might contain an acid hydrochloride which decomposed on solution like the acid sulphate. With regard to Mr. Cockburn's formula, it no doubt worked well in the hands of a careful dispenser, but the possible danger in the case of ordinary pharmacists had been pointed out in the discussion. Mr. Cockburn only indicated that there was no loss of acid when the arsenical solution was boiled for the period requisite to secure solution. Mr. Cowie had kindly tested prolonged boiling, and found that even then there was no loss. There did seem to be a prevalent opinion that boiling led to loss of acid, and it was well to have the point practically determined so that no one need fear that their solution was not thoroughly up to official requirements. This was Mr. Cockburn's first appearance before the Society, and he hoped they would often hear from him again.

Mr. W. B. Cowie next read the following paper on

The Temperatures at which Ammonium Carbonate B.P., Lithium Carbonate and Potassium Bicarbonate Decompose.

While conducting the experiments for my previous paper on sodium bicarbonate it occurred to me that it would be useful to complete the research for the alkali group. The results are embodied in this paper. The only salt requiring treatment different from sodium bicarbonate is the official ammonium carbonate. The difficulty, of course, is the ready sublimation of the salt) which was quite perceptible at 20° C. Precautions had to be taken to distinguish between sublimation and decomposition. This was effected by passing the vapour from the retort through a series of five glass bulbs immersed in ice-cold water. Proof that no ammonium carbonate was reaching the barium hydrate solution was obtained by inserting a piece of moist phenolphthalein paper in the mouth of the U-tube. With this exception the process adopted was precisely that described in my previous paper. A careful volumetric determination indicated a purity standard of 96·7 per cent. for the ammonium carbonate used. The lithium carbonate examined by the B.P. process indicated a purity standard of 97·5 per cent. There was a trace of chlorides but absence of sodium chloride was proved by Thomson's

test. By ignition and volumetric determination the potassium bicarbonate used indicated a purity standard of 97·1 per cent.

Experiment.	Ammon. Carb., B.P.	Li_2CO_3.	$KHCO_3$.	$NaHCO_3$.
1	45° C.	40° C.	59° C.	54·5° C.
2	44° C.	41° C.	60° C.	54° C.
3	45° C.	39° C.	60° C.	54° C.
Mean.	44·7° C.	40° C.	59·6° C.	54·1° C.

It will thus be seen that all the members of the group have their decomposition temperatures between 40° C. and 60° C.

Mr. Dott asked if the temperatures mentioned were those at which the first indication of decomposition was given or did the whole of the carbonic anhydride come off at these temperatures.

Mr. Boa said these results were of considerable practical importance. He was surprised that lithium carbonate decomposed at so much lower a temperature than potassium bicarbonate.

Mr. Cowie, in reply, said the temperatures stated were those at which decomposition began, but he believed all the carbonic anhydride would come off at those temperatures in time. Lithium was much less basic than potassium. He had prepared and now exhibited samples of all the official granular effervescent preparations made at a temperature below, or at least never exceeding 50° C. Those samples were in excellent condition, and went to show that all the preparations could be made at a temperature well under the point—54°·1 C.—at which sodium bicarbonate begins to lose carbonic anhydride.

Mr. J. Rutherford Hill next read the following

Dispensing Note on some Powders Prescribed in Cachets.

The object of this note is to indicate a simple means of overcoming a difficulty that is not infrequently encountered by dispensers. It often happens that a powder is prescribed to be put up in cachets in a quantity too large to go into a cachet of reasonable size. Often the quantity is just a grain or two over what, say, a No. 0½ cachet will contain, and the only choice seems to be to put it into an inconveniently large No. 1 cachet or into two No. 0½ cachets. In these circumstances it has been found that many powders may be reduced in bulk by the simple expedient of rubbing them down in a glass or porcelain mortar with a drop or two of rectified spirits and that the prescribed dose can then easily be contained in a small-sized cachet. This point is well illustrated by such a salt as bismuth salicylate. Commercial samples of this salt vary in density. The variety I have used is Schering's, which is comparatively light. Here I have a No. 0½ cachet filled with bismuth salicylate in its natural state. It holds only 7½ grains. A No. 1 cachet similarly filled holds only 12 grains. Here I have also another No. 0½ cachet, filled with bismuth salicylate, which has been rubbed down with two or three drops of rectified spirit. The salt has aggregated so much that the cachet contains 14 grains of bismuth salicylate, or almost double the quantity of untreated salicylate, and 2 grains more than the No. 1 cachet holds of untreated salicylate. It was my intention to have given several other examples of the application of the method, but circumstances have deprived me of the necessary time. Many useful applications will doubtless occur to the busy and often perplexed dispenser.

The Chairman said this hint would be very useful to dispensers who had to put bulky powders into small packets.

Mr. Boa said he had for a long time followed the practice of aggregating bulky powders by rubbing them firmly in a mortar without any alcohol.

Mr. Burley said his experience was similar to Mr. Boa's. Sulphate of quinine, for instance, could be greatly reduced in bulk in that way.

Mr. Hill also exhibited a device for protection against accidental poisoning, sent by Mr. John Dickson Plean, Bannockburn, consisting of an ordinary cork with sharp steel wires projecting on all sides, and a rubber ring glued into the top for extracting the cork from the bottle.

Mr. Hill pointed out that though an effective safeguard, the idea did not conform with the Act, which required that the bottle itself should be distinguishable by touch. Mr. Hill also exhibited samples of aloes from Uganda, Canton rhubarb and Rio ipecacuanha showing stem and root in one, sent by Mr. Peter MacEwan, London. Attention was also directed to recent additions to the library.

On the motion of the Chairman, votes of thanks were awarded to the authors of papers, to Mr. MacEwan, and to the donor of books.

On the motion of Mr. Boa, a hearty vote of thanks was awarded to the Chairman for his services during the session, and the meeting then closed.

EXAMINATIONS IN LONDON.

April 1899.

MAJOR EXAMINATION.

Candidates examined	.....	37
,, failed	.....	19
,, passed	.....	18

Cowley, Harry James
Durbin, Herbert Samuel
Garsed, William
Glaister, Robert
Harrison, Thomas Arthur
Kelf, Henry David
Kluge, Herman James
Laverack, Clyve Cordukes
Magan, Frances
Noble, Harry William
Nundy, William Lockwood
Payne, Herbert
Spurway, William James
Todd, John William
Wallis, Thomas Edward
Wamsley, William Bunting
White, Daniel Hanbury
Whiting, William

"FIRST" EXAMINATION QUESTIONS.

April 11, 1899

LATIN.

(Time allowed—from 11 a.m. to 12.30 p.m.

I. For all candidates. Translate into Latin —

1. He had both horses and money.
2. The two boys were being taught by the master.
3. Have you shut the gates of the city?
4. "But why," said the queen, "do you not attack the enemy?'
5. He has done these things that he may be praised.

II. Translate into English *either* A (Caesar) *or* B (Virgil).
(Candidates must not attempt both authors.)

A.—Caesar.

1. Tum demum Liscus, oratione Caesaris adductus, quod antea tacuerat, proponit: Esse nonnullos, quorum auctoritas apud plebem plurimum valeat; qui privatim plus possint, quam ipsi magistratus. Hos seditiosa atque improba oratione multitudinem deterrere, ne frumentum conferant; quod praestare debeat, si jam principatum Galliae obtinere non possent, Gallorum, quam Romanorum imperia perferre; neque dubitare debeant, quin, si Helvetios superaverint Romani, una cum reliqua Gallia Aeduis libertatem sint erepturi.

2. Diu quum esset pugnatum, impedimentis castrisque nostri potiti sunt. Ibi Orgetorigis filia, atque unus e filiis captus est. Ex eo proelio circiter hominum millia centum triginta superfuerunt, eaque tota nocte continenter ierunt: nullam partem noctis itinere intermisso, in fines Lingonum die quarto pervenerunt, quum, et propter vulnera militum, et propter sepulturam occisorum, nostri, triduum morati, eos sequi non potuissent.

Grammatical Questions.

(For those only who take Caesar.)

1. Decline, in the singular, *improba oratione*; and, in the plural, *ipsi magistratus.* (Passage 1.)
2. Give the principal parts of all the verbs in Passage 2.
3. Parse fully:—"Diu quum esset pugnatum, impedimentis castrisque nostri potiti sunt." (Passage 2.)
4. What is meant by the *sequence of tenses?* Give, in English and Latin, *two* sentences in illustration.

B.—Virgil.

1. Musa, mihi causas memora, quo numine laeso,
Quidve dolens, regina deum tot volvere casus
Insignem pietate virum, tot adire labores,
Impulerit : tantaene animis coelestibus irae ?
Urbs antiqua fuit, Tyrii tenuere coloni,
Carthago, Italiam contra Tiberinaque longe
Ostia, dives opum, studiisque asperrima belli ;
Quam Juno fertur terris magis omnibus unam
Posthabita coluisse Samo.

2. Ergo his aligerum dictis affatur Amorem :
Nate, meae vires, meae magna potentia ; solus,
Nate, patris summi qui tela Typhoia temnis,
Ad te confugio, et supplex tua numina posco.
Frater ut Aeneas pelago tuus omnia circum
Littora jactetur, odiis Junonis iniquae,
Nota tibi ; et nostro doluisti saepe dolore.
Hunc Phoenissa tenet Dido, blandisque moratur
Vocibus : et vereor, quo se Junonia vertant
Hospitia : haud tanto cessabit cardine rerum.

Grammatical Questions.

(For those only who take Virgil.)

1. Decline, in the singular, *urbs antiqua ;* and, in the plural, *animis coelestibus.* (Passage 1.)
2. Give the principal parts of all the verbs in Passage 2.
3. Parse fully :—"Ergo his aligerum dictis affatur Amorem." (Passage 2.)
4. What is meant by the *sequence of tenses ?* Give, in English and Latin, *two* sentences in illustration.

ENGLISH.

(Time allowed—from 3 p.m. to 4.30 p.m.)

1. Analyse :—
"Sweet was the sound, when oft, at evening's close,
Up yonder hill the village murmur rose."
2. Parse fully—"Ill fares the land, to hastening ills a prey."
3. Explain the meaning of the following prefixes, and write words formed by means of them :—*in-*, *anti-*, *mis-*, *retro-*, *en-*.
4. In the following passage supply the necessary capital letters, and put in the stops and the inverted commas where necessary :—do you know nothing mr somerset not even law was the reply the answer is worthy of a sage returned his friend and you sir he continued turning to challoner as the friend of mr somerset may i be allowed to address the same question to you well replied challoner i play a fair hand at whist

The following question must be attempted by every candidate :—

5. Write a short Composition on *one* of the following subjects :—
(i.) Cycling.
(ii.) The late War between Spain and the United States of America.
(iii.) Self-reliance.
(iv.) "Deep rivers move silently ; shallow brooks are noisy.".

ARITHMETIC.

(Time allowed—from 12 30 p.m. to 2 p.m.)

[The working of these questions, as well as the answers, must be written out in full.]

1. Find the value of 7 cwt. 3 qr. 24 lb. 8 oz. at £12 10*s.* 8*d.* per cwt.

2. Simplify $\dfrac{3\frac{1}{2} - 2\frac{1}{3}}{3\frac{1}{2} \text{ of } 2\frac{1}{3}} \div \dfrac{4\frac{1}{2} - 1\frac{1}{4} \text{ of } 1\frac{2}{5}}{1\frac{2}{3} \text{ of } \frac{2}{3\frac{1}{2}}}$.

3. Express in shillings the difference between 3·0693 of 8*s.* 5*d.* and £·6416.
4. If the gas for 7 burners, 6 hours every day for 19 days, cost 8*s.* 6*d.*, for how many hours every day may 8 burners be lighted for 30 days for 11*s.* 4*d.* ?
5. A man bought 120 lb. at 2s. 8d. per lb., and sold ¼ of it at a profit of 5 per cent., ⅓ of it at a profit of 15 per cent., and the rest at a loss of 10 per cent. How much money did he gain by this transaction ?
6. How much 3 per cent. stock at 93 could I purchase with the proceeds of the sale of £9858 4 per cent. stock at 131 ?

The following question must be attempted by every candidate :—

7. A wine merchant bought 17 casks, each containing 2 hectolitres of wine ; how much would he realise by selling all the wine at 2*s.* 4*d.* per pint ?

NEW REMEDIES.

Triphenetol-Guanidine-Hydrochloride.—This is used as an anæsthetic in ophthalmic cases in a solution of 1:1000, and is stated to give complete anæsthesia in one to two minutes after dropping into the eye. It causes no irritation and is free from toxic after effects.—*Pharm. Post*, **31**, 559.

Eurobin (Chrysarobin Acetate).—This compound is suggested as a substitute for chrysarobin, since it is free from toxic and irritant action, yet exercises the curative effects of chrysarobin itself. Kromayer states that in solution from 2 to 3 per cent. of eurobin has the same action as chrysarobin, and does not stain the linen.—*Pharm. Cent.*, **39**, 476, after *Munich Med. Woch.*

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—IX.

Chordata.

The phylum Chordata, divided into three sub-phyla, includes all animals which at any period of their life history show a supporting internal spinal column or notochord. The first two sub-phyla consist of only a comparatively few forms remarkable for the fact that the notochord appears in an aborted condition, the general appearance and structure of the animals being of a low, invertebrate character. In the Adelochorda the notochord is represented by a vestige in the anterior region, and in the Urochorda it appears in tho tail sometimes only in the larval form, but in a more pronounced way. The third sub-phylum—Vertebrata—are distinguished not only by the spinal column, but also by the hollow nerve chord which lies along the whole length on the dorsal side, in contrast to the solid, ventrally-situated nerve rod of invertebrates, and the possession at some period of their life of paired, bronchial apertures or gill-slits. The Vertebrata are divided into Acrania and Craniata, the Acrania being very sharply marked off from the others and consisting only of one family, represented by the lancelet (*Amphioxus*). This animal, which early observers placed amongst molluscs as a fish-like slug, possesses in a distinct but simple form the three chordate characteristics mentioned above, and its position on the borderland between vertebrates and invertebrates renders it of peculiar interest. The notochord in *Amphioxus* is a simple gelatinous rod extending from snout to tail, which in higher forms is replaced by a more elaborate cartilaginous or partially or completely ossified structure.

Development.

The female animal cell or ovum is a mass of protoplasm matter in some cases associated with more or less yolk or nutrient food material, and surrounded by one or more membranes or external coats. The nucleus of this cell as it ripens previous to impregnation casts off one or more portions of itself ; these are known as "polar bodies," and are supposed to represent some element that would be hurtful to future development. The male cell is usually a small motile mass of protoplasm bearing a tail, by the lashing of which its movement takes place. The sperm enters the ovum in some animals at an aperture or micropyle, but in others it pierces its way through the integument and mass of protoplasm until it reaches the nucleus. After fusion of the two, segmentation commences. In ova containing no yolk, division of the whole cell or "holoblastic" segmentation occurs, but where there is much yolk the division is confined to the special protoplasmic area or germinals disc ; this is "meroblastic" segmentation. In *Amphioxus*, the cell divides and redivides until first a mass, morula, and then a hollow ball, blastula, of cells is formed. Invagination then takes place, one side of the ball becomes pushed in to form a two-walled cup, the edges of which grow over, enclosing a space except at a small opening, the blastopore, which marks the posterior end of the future animal. This hollow structure, the gastrula, is similar to the adult form of certain coeleuterates, and its cavity, archeuteron, is the primitive gastric cavity. The gastrula next becomes elongated, and a furrow is formed along the dorsal side, which finally closes over and becomes the hollow nerve cord.

In the bird's egg, say that of *Gallus*, there is an enormous amount of nutrient yoke, and the development of the embryo takes place after the egg is laid by the parent. The female germinal protoplasm is concentrated at one point, the germinal

disc. In passing down the oviduct this yolk mass becomes coated first with albumin, and then with a substance forming a porous calcareous shell. No invagination takes place here or in the mammal, the first process after preliminary segmentation being the formation of a "primitive streak" of specialised cells at the point where the blastopore occurs in the gastrula.

As the embryo grows at the expense of the yolk, it gradully sinks into the cavity so made, and two membranous structures, not found in lower forms, are developed for its protection and use. The one, the amnion, is a growth of the external tissue, which folds up and encloses the embryo, the other, the allantois, is a sac, growing out from the posterior end of the embryo gut, and in the bird spreads out and occupies a large portion of the egg, adhering close to the shell, through which its vascular system becomes aërated. In the mammal, where the young fœtus, in the absence of yolk, has to depend on the parent for nourishment, this allantois becomes fused with the wall of the maternal uterus to form the "placenta," through which nutritive material is passed.

EXPLANATORY NOTES ON THE B.P. 1898.

Cetaceum.—Spermaceti consists chiefly of cetyl palmitate, cetyl alcohol being one of the higher homologues of methyl alcohol —hence its formula, $C_{16}H_{33}OH$, follows the general formula for the alcohols of this series, $C_nH_{2n+1}OH$. Since it contains sixteen carbon atoms in the molecule its systematic name is hexadecyl alcohol. Note that spermaceti contains no glycerides, and hence yields no glycerin on saponification. If spermaceti be saponified by alcoholic potash, potassium palmitate and cetyl alcohol are the main products :—

$$\begin{array}{lcl} C_{15}H_{33}COO\,C_{16}H_{33} & & C_{15}H_{33}COOK \\ + & = & + \\ KOH & & C_{16}H_{33}OH \end{array}$$

It will be noted that one molecule of cetyl palmitate is thus saponified by one molecule of potassium hydroxide, since cetyl alcohol is a monohydric alcohol. On the other hand, each molecule of the *glyceryl* esters of fatty acids require three molecules of potassium hydroxide, because glycerin is a trihydric alcohol. Thus for glyceryl oleate we have :—

$$\begin{array}{lcl} (C_{17}H_{33}COO)_3C_3H_5 & & 3C_{17}H_{33}COOK \\ + & = & + \\ 3KOH & & C_3H_5(OH)_3 \end{array}$$

Consequently much less potash is required for the saponification of a given weight of spermaceti than for an equal weight of those oils and fats which consist chiefly of glycerides. From this it follows that the *saponification equivalent* of spermaceti, *i.e.*, the number of grammes saponified by 1 litre of N/1 KOH is represented by a comparatively high figure, viz., about 440. The molecular weight of pure cetyl palmitate is 480, and it will be seen by reference to the equation representing its saponification that this figure represents also its saponification equivalent. The saponification equivalent of spermaceti itself, as mentioned above, is about 440. This difference is explained by the observation that in addition to cetyl palmitate spermaceti contains small quantities of homologous esters of lower molecular weight, which consequently require more potassium hydroxide than an equal weight of cetyl palmitate. In the official characters and tests the behaviour of spermaceti to cold and hot alcohol should be noted. It is dissolved entirely by hot alcohol (90 per cent.), and practically entirely deposited on cooling. Paraffin wax and several other possible adulterants are detected by this test. Since spermaceti, unless rancid, contains no free acid, its solution in hot alcohol, under the conditions described, should be rendered alkaline by the first drop of normal soda solution added. The test for stearic acid (and other solid fatty acids) is really unnecessary, since their presence will have been revealed by the test immediately preceding—the test for "limit of acidity." The test as described depends upon the insolubility of spermaceti and the solubility of free fatty acids in cold alcohol. The fatty acids are, however, precipitated from their alcoholic solution when this is diluted with water.

Opium.—The Pharmacopœia does not now state the geographical source of opium, so that opium produced in any part of the world may be used, provided it complies with the official characters and tests. Opium containing a minimum of 7½ per cent. of morphine may be employed in making the tincture and extract, since both these preparations are themselves standardised after manufacture. For the other galenical preparations the opium used must contain, in the dried state, between 9½ and 10½ per cent. of morphine. The use of any opium containing less than 7½ per cent. of morphine is not allowed, probably because varieties of opium containing less than this proportion of morphine contain often comparatively large quantities of the other alkaloids, some of these having a quite different pharmacological action, and in some cases an action antagonistic to that of morphine. The Pharmacopœia now suggests that samples of dry opium containing more than 10 per cent. of morphine, as is often the case, may be diluted to that strength by the addition of weaker opium or of milk sugar.

The assay process has been modified in the following particulars, but the explanation provided in the previous series of articles (see Students' Page, *P.J.*, September 4, 1897) still applies to the principles of the method. The *relative* proportions of the various materials employed in the assay remain unaltered, although they are now given in the metric system. The crystals of morphine are now to be washed with *morphinated water*, *i.e.*, water already saturated with morphine (this morphinated water contains about 0·04 per cent. of morphine, *vide* B.P. Appendix), so that the wash liquor shall not dissolve any of the precipitated morphine. The weight of the dried precipitate is not calculated as pure morphine, because it is associated with colouring matter and other impurities. A weighed quantity is titrated with N/10 H_2SO_4, and from the quantity found by titration in this portion (which should obviously be something less than its actual weight), the weight of morphine present in the total precipitate may be determined. The volumetric calculation is based upon the fact that morphine is a mono-acid base and forms the sulphate $M_2\,H_2SO_4$. Hence 285 Gm. of morphine ($C_{17}H_{19}NO_3 = 285$) are neutralised by 49 Gm. of sulphuric acid ($\frac{1}{2}H_2SO_4 = 49$). Now, 1 litre N/10 H_2SO_4 contains 4 9 Gm. of H_2SO_4, and therefore 1 C.c. contains 0·0049 Gm. H_2SO_4. Now, since

$$\begin{array}{rcl} 49 \text{ Gm. } H_2SO_4 & \equiv & 285 \text{ Gm. morphine} \\ \therefore\ 0{\cdot}0049 \text{ ,, ,,} & \equiv & 0\ 0285 \text{ ,, ,,} \end{array}$$

Hence, each C.c. of N/10 H_2SO_4 neutralised indicates 0·285 Gm. of morphine in the precipitate titrated. To the total weight of morphine so found, about 10 per cent. (0·104 Gm.) is added, to allow for morphine unavoidably lost during the preceding steps of the assay process. This addition is made because it has been found that if 1 Gm. of morphine be substituted for the 10 Gm. of powdered opium, and carried through the official assay process, only about 0·9 Gm. of alkaloid is recovered at the end. In the 1885 B.P. process this addition was not made, but the error was there approximately counterbalanced by taking the weight of the final precipitate as pure morphine, although it contained often nearly 10 per cent. of impurities.

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THE PRESENT SITUATION.

Registered chemists and druggists have now imminently before them a contest, the necessity of which has been apparent ever since the law lords decided that, in regard to the Pharmacy Act, 1868, the significance of the word person was not to be extended so as to include a corporation. That decision would, in any case, have been a demonstration of the defective nature of the Act, either as a means of regulating the practice of pharmacy or as a measure to some extent providing, in that respect, for the safety of the public; inasmuch as it involved the inference that the Act—while intended to prevent individuals from assuming the title of chemist and druggist and keeping open shop in that capacity, unless qualified—was not intended to prevent an association of unqualified persons from carrying on the business under that designation. Inconsistent as that inference obviously is with the object and intention of the Act, the demonstration of its defective nature by the law lords was made still more palpable by their unanimous declaration that the real objects and policy of the Act are made so obscure by the ambiguity and confusion of its language, as to raise a doubt whether its framers or the Legislature ever intended it to apply to associations of persons as well as to individuals or to give qualified individuals exclusive rights. The consequences of the decision that companies are outside the scope of the Pharmacy Act and not amenable to its provisions for ensuring due qualification of persons carrying on the business of chemists and druggists have been mischievous in two ways. By encouraging the formation of "one man" companies for evasion of the law, the operation of the Act in the public interest is to a great extent counteracted; and secondly, persons legally qualified, as the Act provides, are liable to be deprived of the concurrent advantages that qualification should carry with it.

Twenty years have elapsed since the decision now referred to was given; but in that interval no attempt has been made by registered chemists and druggists to take advantage of the very important admissions of the law lords as to the uncertainty and difficulty surrounding the question they decided, or of their distinct statements that they might have been led to an opposite conclusion by considerations of policy as well as other circumstances. Though the number of individuals prejudicially affected by the consequences of that decision has increased until it now amounts to some fifteen thousand, no attempt has been made to provide, by amendment of the Act, such a remedy as the remarks of the law lords evidently pointed to as being within reach. The question is said to have been "shirked" by those more directly interested in it, until the Lord Chancellor, recognising the anomalous condition of the law, proposed to take action for its amendment. The mistake of supposing amendment could be effected in such a way as to place companies in the same position as the executors of a deceased chemist does not appear to have been yet perceived by the Lord Chancellor for the recent repetition of that proposal in the form of a Bill introduced into the House of Lords is unmistakably an attempt to give specific statutory recognition to the consequence of the House of Lords' decision of twenty years ago. The Bill is essentially based upon consideration of the circumstance—which very materially led to the decision of the House of Lords—that the Pharmacy Act recognises unqualified proprietors of a business as not being "necessarily inconsistent" with the object or policy of the Act. On that circumstance, coupled with the concurrent provision of other safeguards for the public interest, the decision of the House of Lords was mainly founded, though Lord Selborne distinctly stated, at the same time, that he thought the argument against a company being permitted to carry on the business would otherwise have been extremely strong. During the twenty years of inaction with regard to this defect of the Pharmacy Act, company pharmacy is alleged to have acquired vested interests. The Lord Chancellor's Bill would recognise and establish those interests without regard for the fact that the practice—if not technically illegal—has been directly contrary to the spirit of the law, and if the Lord Chancellor's Bill were passed by the Legislature the legitimately acquired interests of qualified chemists and druggists would be correspondingly damaged.

To prevent such a result chemists and druggists have no alternative but to oppose this project of the Lord Chancellor's with all the energy they can exert. They can no longer delay to unite in defence of the State-created rights they possess as a consequence of statutory limitation of the exercise of their business, imposed in the interest of the public. From that position they must strenuously dispute the unreasonable claim that continued wrong-doing could establish vested interests to their prejudice. They must trust to the public sense of justice to support them in their defence of the vested interests they have acquired in conformity with the law. They must also unite in demanding that the obviously true meaning of the Act of 1868 shall be distinctly recognised; that since the qualification which the Act demands cannot be other than individual, combinations of unqualified persons shall not be permitted to usurp the rights of qualified persons by means of the evasive procedure of signing a memorandum of association under the Companies Acts. The first clause of the Council's suggestions for a draft Pharmacy Bill covers the ground in that respect. But chemists and druggists will require to go further than that to obtain a measure better entitled to be termed a means of regulating the practice of pharmacy, than the "wretched Poisons Act," which has generally proved so defective and indequate. Regard must be had for the pharmacist's proper business—the supply and dispensing of "medicine"—to which the second clause of

the suggestions relates. The principle underlying that clause will be appreciated by all competent to form an opinion, notwithstanding the trivial and fanciful objection that it would involve a monopoly of the sale of simple drugs and prevent a grocer from selling Epsom salts. No such unreasonable object is contemplated, but only a means of enabling the public to distinguish between the competent pharmacist and the unqualified vendor of drugs or nostrum cures, and to understand that, in the supply of medicine, when their lives may be at stake, their own interest requires them to seek the services of persons recognised as being competent to perform the frequently difficult and responsible work of preparing medicines for their use. It is not merely because certain potent articles are dangerous that—for the safety of the public—knowledge, skill and experience are needed to be exercised in dealing with them: those qualifications are equally essential for avoiding mistakes in all instances of the preparation of medicine. Moreover, maintenance of the chemist and druggist's professional status—which has been largely improved by the efforts of the Pharmaceutical Society—is necessary not only in the interest of the public; but also because it provides the only effectual protection on which reliance can be placed for the promotion of the more purely trade interests which are, under various conditions, connected with the business of the chemist and druggist.

LIVERPOOL CHEMISTS' ASSOCIATION.

Shortly after the foundation of the Pharmaceutical Society attempts were made in several provincial centres to establish associations of the local chemists and druggists as branches of the central organisation. Among the number was Liverpool, where a meeting was convened during the summer of 1849 to hear an address by Jacob Bell upon the objects of the Pharmaceutical Society. The chair was taken on that occasion by Mr. Edward Evans—who is again President of the Association—and a resolution was passed to appoint a committee to make arrangements for future meetings of the chemists of Liverpool, and for promoting the educational and general objects of the Society. The result was the formation of the Liverpool Chemists' Association, which celebrates its jubilee during the present week. In the interval that has elapsed, that Association has done much useful work, which has been recorded in the pages of this Journal and can be referred to as affording an excellent illustration of the advantages to be secured by the establishment of local associations. In that connection it is of interest to point to the change that has taken place in the social relations of chemists and druggists amongst themselves and with their fellow townsmen. That change seems to be indicated by the advice given by Jacob Bell to the Liverpool chemists, on the occasion above mentioned, that in the meetings and proceedings of the Association no allusion should be made to "the closing of shops, regulation of prices, or any subjects of that nature which might occasion collision of interests and the consequent feeling of jealousy or distrust naturally arising from such discussions," in order to avoid the danger of breaking up their organisation. Chemists may be congratulated that much improvement has taken place since that time, and that in place of the old jealousy prevailing there is now a possibility of discussing such questions, and of arriving at mutual agreement in regard to them.

DEATHS BY POISON.

The Registrar-General, in his sixtieth annual report of births, deaths, and marriages in England, attributes 1195 of the deaths that occurred in 1897 to the effects of poisons and poisonous vapours, being an increase of 104 on the total for 1896. The accidental deaths show an increase from 619 to 691—449 males and 242 females; suicides increased from 472 to 504—289 males and 215 females. Of the accidental cases, those in which carbolic acid was the fatal agent account for an increase from 34 to 43, and the deaths caused by narcotics of all kinds have increased from 117 to 150. The tabular statement here given shows further details:—

Cause of Death.	Males.	Females.	Total.
Metallic Poisons (including Lead, 131)	114	33	147
Ammonia, Iodine, Phosphorus	6	11	17
Acids (including Carbolic, 43, and Oxalic, 5)	45	26	71
Narcotics	93	57	150
Prussic Acid and Cyanide	3	1	4
Belladonna	2	5	7
Aconite	3	0	3
Strychnine and Nux Vomica	2	1	3
Weed Killer	2	0	2
Anæsthetics	81	46	127
Miscellaneous (including Alcohol, Tobacco, Ptomaines, etc.)	98	62	160
Total	**449**	**242**	**691**

The cases of suicide by poison were again remarkable for the large proportion in which carbolic acid was resorted to as a means of securing relief from care. There were 176 such cases in all in 1897—89 males and 87 females—being an increase of 13 on the total for 1896. A large increase also took place in the number of cases of poisoning by oxalic acid—42 as against 24 during the previous year. Further details from this portion of the 1897 report are given below:—

Cause of Death.	Males.	Females.	Total.
Metallic Poisons	9	9	18
Ammonia and Phosphorus	7	8	15
Acids (including Carbolic, 176; Oxalic, 42; Salt of Lemon, 4)	138	139	277
Narcotics	47	22	69
Prussic Acid and Cyanide	46	7	53
Belladonna	2	1	3
Aconite	1	2	3
Strychnine and Nux Vomica	7	3	10
Weed Killer	1	0	1
Vermin Killer	3	4	7
Miscellaneous	28	20	48
Total	**289**	**215**	**504**

The scheduled poisons cannot be distinguished absolutely from other poisonous substances mentioned in the foregoing lists, but as nearly as can be ascertained from the report the figures are as given in the following table:—

Group.	Scheduled.	Unscheduled.	Total.
Accidents	182	509	691
Suicides	204	300	504
Total	**386**	**809**	**1195**

It will be seen that scheduled poisons were responsible for but little more than one-fourth of the accidental deaths and for only two-fifths of the cases of suicide by poisoning. It must also be borne in mind that there is always a certain proportion of the scheduled poisons named in both lists

which have not been procured through the medium of chemists and druggists; otherwise the proportions of fatalities from the misuse of scheduled and unscheduled poisons would undoubtedly differ still more widely. Placing a poison on the Schedule is therefore a very real protection for the public, for, whilst the risk of accidents is thereby largely diminished, would-be suicides appear to manifest disinclination to attempt to procure deadly substances of which the sale is surrounded by certain formalities.

Turning next to what has of late years become the special feature of the Registrar-General's reports—the number of deaths caused by carbolic acid—we find that neglect to place that article on the Schedule is still tending to increase the mortality returns. The figures for the past six years are here given—

Cause of Death.	1892.	1893.	1894.	1895.	1896.	1897.
Carbolic Acid.....	106	148	202	258	197	219
Other Agents	709	819	889	920	894	976
Total Deaths	**815**	**967**	**1091**	**1178**	**1091**	**1195**

These figures show that the percentage of deaths by carbolic acid poisoning has increased in the six years from 13 to 18·3 per cent. The great increase has been in the case of suicidal rather than accidental deaths, as more than one-third of those who terminated their existence by the aid of poison invoked the aid of the article which, by the continued inaction of the Privy Council, remains unscheduled, that fact being clearly brought out in the appended tabular statement:—

Group.	Poison.	1892.	1893.	1894.	1895.	1896.	1897.
Accidents	Carbolic Acid	33	31	35	34	34	43
	Other Agents	481	566	553	564	585	648
		514	**597**	**588**	**598**	**619**	**691**
Suicides	Carbolic Acid	73	117	167	224	163	176
	Other Agents	228	253	334	356	309	328
		301	**370**	**501**	**580**	**472**	**504**

OPPOSITION TO THE PHARMACY BILL.

The Pharmacy Bill (House of Lords)—is still awaiting second reading, and no date is as yet assigned for that stage, nor has any opposing notice found its way to the paper. The Watch Committee of the Society's Law and Parliamentary Committee held a special meeting on Wednesday last to consider the most effectual way of carrying out the Council's policy of opposition to the Lord Chancellor's Bill, and it was then decided to issue an official communication to Local and Divisional Secretaries, pointing out the undesirability of independent and isolated action at the present juncture. It is understood that this communication will suggest that individual activity in approaching members of Parliament may embarrass the official work of opposition, and we are asked to emphasise that point in these columns. There is very little doubt that the Watch Committee may safely rely upon the loyalty of the members of the Society to refrain from precipitate action.

ANNOTATIONS.

The Lord Chancellor's Pharmacy Bill is mentioned by the *Lancet* in a manner that contrasts very strongly with the remarks in the *British Medical Journal*, already referred to in last week's Journal. Though the *Lancet* incorrectly assumes the Bill to have been "introduced on the representations of the Council of the Pharmaceutical Society," it goes on to point out that its principle is in direct opposition to them, and adds that "a greater blow to the status of the respectable profession of pharmacy could hardly have been dealt," predicting also that "if the Bill be passed, all the commendable energy and zeal of the Pharmaceutical Society to raise the standing of those who dispense medicines and sell poisons will be lost," thus affording a mischievous precedent tending to drag down professional occupation to the level of mere trade, a proceeding which is the very opposite of what is considered desirable by the medical profession in regard to the practice of pharmacy, as a useful and honourable profession "which can only be properly conducted by men of enlightenment and knowledge, who must be recognised as such and stamped by a qualification required by the State."

The Apotheker Zeitung—which is the official organ of the German association corresponding to the Pharmaceutical Society—in speaking of the Lord Chancellor's two Bills draws attention to the extraordinary contrast between their provisions, remarking that they offer an illustration of the poor appreciation of pharmacy that prevails in England and the want of understanding shown even by the representatives of the nation, tending to degrade the qualified pharmacist to the position of a mere employé of trading capitalists. It adds that if the uncertainty now existing as to the legality of company pharmacy should be replaced by such statutory recognition of unqualified companies as the Lord Chancellor proposes, the consequences of such inappropriate legislation must be destructive to pharmacy and detrimental to the public interest.

A Pharmacy Bill drafted by the Council of the Pharmaceutical Society appears likely to take its place shortly amongst the necessities of the times, since the suggestions submitted to the Lord Chancellor have apparently failed to meet with his approval and they are absolutely ignored in the Bill actually introduced by him. No Bill can satisfy the majority of registered chemists unless it proposes to prohibit absolutely the practice of pharmacy by associations of unqualified persons, as well as the assumption of pharmaceutical titles by such associations; but we also require better systems of registration, both for students and for persons duly qualified under the Pharmacy Acts. As Mr. Harrington suggests in his letter published this week (see p. 380), pharmaceutical students should be compelled to register as such at least three years before entering for the qualifying examination, and if, in addition, it were made necessary for candidates to produce evidence of having served a regular apprenticeship with a registered chemist, the professional status of the pharmacist would go up at a bound. A compulsory six or twelve months' course of study, in the case of all candidates for examination, would tend in the same direction and inflict no hardship, since there are few who do not voluntarily submit to such a course now. Improved registration of duly qualified persons would involve the payment of an annual registration fee of merely nominal amount; unless that fee were remitted to the Registrar, together with the sender's full name and address, by a given date in any year, the name would be removed from the Register. In the case of members of the Pharmaceutical Society, the registration fee could be included in the annual subscription, as there is no

difficulty in keeping the Register accurate so far as they are concerned, and no special expenses are incurred on their behalf, though it is different in the case of other registered chemists.

THE COMPOUNDING OF PHYSICIANS' PRESCRIPTIONS and the sale, for medicinal purposes, of all poisons and potent substances, might reasonably be restricted to duly qualified persons if the reforms referred to above were effected. Indeed, it is not at all unreasonable to ask for such restriction now, considering that the registered chemist is the only person properly fitted to undertake such important duties. But as time goes on, professional men will find it increasingly necessary to impose greater burdens upon themselves and upon those who are preparing to succeed them, and chemists and druggists must be prepared to take up their share of the extra burdens along with the rest. A necessary sequel to such action on their part would be the release of all registered chemists from jury service. It might not be advisable to include a clause dealing with such exemption in a Pharmacy Bill, though medical practitioners secured exemption by the Medical Act of 1858, but in any case relief should not be long delayed whenever the chemist and druggist's position comes to be thoroughly understood in Parliament. The public safety is dependent as much on the pharmacist's continuance at his post as upon his proper qualification, and service on juries is not compatible with the first-named requirement. Many minor provisions might also be included in a Pharmacy Bill, but if full attention were given to all the points referred to, other matters might well be left to adjust themselves. Overloading must, of course, be avoided; on the other hand, it would be a pity to omit anything that is really essential. If a serious effort is to be made and sustained, nothing that has been commented on above need be omitted, and the result of legislation on those lines would be to establish the practice of pharmacy on a proper basis, whilst effectually providing for public safety in regard to the compounding of medicines and the sale of poisons and other potent remedies.

PROFESSIONAL STATUS is the object to which the work of the Pharmaceutical Society has always been directed, and with some measure of success, as in the grant of a Royal Charter of Incorporation, the recognition that qualification is desirable in connection with the practice of pharmacy and the respect shown for the Society's educational efforts. But much opposition has been offered, arising mainly from the disproportionate development of the trading side of the business. But for that the Chemist and Druggist might now be approaching extinction, and the qualification of Pharmaceutical Chemist established as necessary for all persons in business on their own account. The influence exercised by the journalistic evolution of a sundryman's trade circular has operated in the same direction, and professional status has been submerged by preponderating regard for trade interests. The altered incidence of pharmaceutical qualification, when it was established as a legal condition, has had a similar effect, as shown by the conclusion that, in connection with the practice of pharmacy, the requirements of the public are sufficiently satisfied by qualified assistants acting as the servants of unqualified trading companies. A further indication of that effect was given when the Lord President of the Privy Council spoke of the Pharmacy Act, 1868, as having established a "trade monopoly": another such indication was given when the Lord Chancellor, in seeking to effect amendment of professional law, regarded "trade operations" in the case of pharmacy—as constituting differences and difficulties requiring legislation directly opposite in principle to that which he proposed in reference to the practice of medicine: lastly, the astonishing opinion, which appears to be accepted in some quarters—that the suggestions put forward by the Council of the Pharmaceutical Society for amendment of pharmacy law are nothing more than a delusive expression of an unattainable ideal—may be taken as evidence that there is much room for education as to the necessity of a professional status for persons engaged in the practice of pharmacy, and as to the relation that pursuit bears to the practice of medicine and other occupations of a professional nature.

THE ANNUAL MEETING OF THE SOCIETY, as members may be reminded, will be held at 17, Bloomsbury Square, London, on Wednesday, May 17. In connection with that meeting, a question has been raised as to what is the latest time for sending in notices of motion intended to be discussed at the Annual Meeting. Unfortunately, the point is not at all clear, but Section XV. of the Bye-laws appears to have some bearing on the subject. After stating that "summonses, notices, or advertisements convening special general meetings shall be given not less than ten clear days before the day thereby appointed for the meeting," the Bye-law proceeds thus:—

> All other summonses, notices, or advertisements shall be given not less than three clear days before the day thereby appointed for the meeting, and in all the said cases there shall appear notice of the general nature of the business to be discussed at the meeting.

That may be understood to imply that no motion can be discussed at an annual meeting of the members unless notice of it has been given to the members not less than three clear days before the day appointed for the meeting. Inasmuch as the *Pharmaceutical Journal* is sent to every member of the Society and (*vide* Bye-laws, Section XXII.) and all notices to the members are considered duly made or given if inserted therein, any notice of motion received by the Secretary of the Society sufficiently early to be inserted in the Journal for May 13 next would apparently be in time to meet the requirements of the case.

SOME MISAPPREHENSION ABOUT NOMINATIONS for the Council of the Pharmaceutical Society has been caused by the fact that an official notice on the subject was inserted by the Secretary in the issue of the *Pharmaceutical Journal* nominally published on the day which happened to be the latest on which nominations could have been received. Reference was also made to the matter in the editorial columns for that week, and some careless and unduly suspicious readers appear to have jumped to the conclusion that publication of the official notice had been purposely delayed to prevent nominations being received in time. The state of mind thus revealed is curious, to say the least, but it probably represents what is only a passing phase in the process of fusing the varied interests affected by the reconstitution of the Pharmaceutical Society last year. But, however that may be, it appears necessary to point out that the Journal for February 4 last (see p. 109) contained an article on the coming Council election, in which the whole procedure of nomination, etc., was fully explained, and the date mentioned before which notices of nomination must be received by the Secretary. Subsequently, in the special issue of the Journal for February 25—sent to everyone whose name appeared on the Register of Chemists and Druggists—the Secretary again inserted an official notice on the subject, and that was followed by further notices published three weeks later. Even then there was ample time, after delivery of the Journal, for notices of nomination to be sent in time, and we are quite unable to see that any member has the least ground for complaint in the matter. The fact should not be overlooked that it is not strictly necessary for any notice to be given by the Secretary. Every member of the Society has received

a copy of the Bye-laws which regulate the elections, etc., and it should be regarded as a duty to know what those Bye-laws contain.

The President of the Pharmaceutical Society, who has been prevented by pressure of examination work from attending the Bradford and Liverpool meetings this week, has promised to attend the annual dinner of the Nottingham and Notts. Chemists' Association, on Thursday next. The Vice-President of the Society is also expected to be present, and among other invited guests are the members of Parliament for the city of Nottingham, and representatives of University College, Nottingham. An enthusiastic meeting is anticipated, and in order that the arrangements may be in every way conducive to success, the Hon. Secretary—Mr. A. Eberlin, 2, Chapel Bar, Nottingham—requests that all applications for tickets may reach him by Tuesday next at latest.

The Secret Commissions supposed to be paid to medical practitioners by chemists are vexing the soul of the conductors of the *Daily Telegraph*, and in a short article on the subject, which has appeared in that paper, it is stated that, as regards the allegation that commissions are given to medical practitioners to induce them to send their prescriptions to particular establishments, chemists are even more deeply concerned than medical men. An attempt has been made, therefore, to ascertain how chemists regard the accusations made by the Select Committee of the Chamber of Commerce on Secret Commissions, and a visit paid to several gentlemen — each selected as representative of a particular class — has elicited a unanimous declaration that they know nothing of such commissions being given or received. None, however, have gone the length of saying that the practice does not exist. On the contrary, they are said to have admitted that they have heard of it, and should not be surprised if it prevails, though they have no idea who the offenders are, if offenders there be. The giving and receiving of such commissions, according to one gentleman connected with a large wholesale drug business, is "demoralising and improper." A chemist with an old-established business in a good residential suburb pointed out that nearly all the medical men make up their own prescriptions, so that it would neither pay chemists to give them a commission, nor the doctors to accept it. In the West-end, a leading chemist said he doubted very much whether the accusations of the Chamber of Commerce could be upheld, but a South London chemist's reply is thought by the *Daily Telegraph* to be most to the point and as perhaps summing up the situation accurately. He said he did not know anything about commissions. He did not give them, and if he did, he was not likely to proclaim the fact.

A Petition to the Pharmaceutical Council has been signed by the registered chemists of Cambridge and forwarded to the Society's headquarters, directing attention to the provisions of the Pharmacy Bill, 1899, introduced into the House of Lords by the Lord Chancellor, and urging the Council strongly to use every effort to secure its rejection, as being most unjust in that it completely ignores the position of chemists who are qualified in accordance with the requirements of the Act of 1868, and further grants an exemption in favour of unqualified trading companies. The petitioners also express the opinion that for this and other reasons the Bill should be rejected in the interest of public safety and security. The document is signed by Ald. Deck (President C.P.A.), Messrs. A. Sidney Campkin, E. Saville Peck (Vice-President C.P.A.), H. F. Cook (Hon. Treasurer), and B. Sidney Campkin (Hon. Secretary C.P.A.), together with all the chemists in the town.

NOTICES OF BOOKS.

'The Photo-Miniature' is a new American monthly magazine of photographic information, published in this country by Messrs. Dawbarn and Ward, London, at sixpence net. The first number deals with modern lenses and leaves little unsaid on the subject that can be compressed into the space available. Subsequent numbers will treat of the art of posing, hand camera work, and photography outdoors, whilst every issue will also contain reproductions of examples of fine art, and present, in concise form, the photographic news of the world. To all who study photography as a science and an art, this new publication will be indispensable.

'Notes on Practical Chemistry,' by J. Armstedt Ray, jun., B.A., Ph.C. (Dublin: Hely's, Limited. Pp. 36. Price 1*s.* 6*d.* net), is a slight production which has been compiled especially for pharmaceutical and medical students. It includes the various group charts with notes on procedure and special tests, lists of tests for alkaloids, etc., a section on volumetric analysis, and some disconnected notes for unsystematic urine analysis.

In 'The Natural Mineral Waters of Harrogate,' by Dr. F. W. Smith (London: Dawbarn and Ward. Pp. 106. Price 1*s.* net.) the author considers the waters chemically, therapeutically and clinically, and he also deals with their internal and external application, the book being dedicated to "the doctors of this country for the good of their patients and the glory of Harrogate." It should prove extremely useful as a medical guide to the district treated of.

'Constipation and Its Modern Treatment,' by Dr. George Herschell (London: H. J. Glaisher. Pp. 67. Price 2*s.* 6*d.* net.) is a reprint of a paper read before the West Kent Medico-Chirurgical Society. That paper appears to have been in some demand, and as the numbers of the *Clinical Journal*, in which it was originally published, are now out of print, republication has been effected in the form of a handy cloth-covered volume.

DENTAL NOTES.

Sensitive Dentine.

A mixture of two parts of oil of cloves and one of carbolic acid, sealed up in a sensitive cavity for several days, possesses great value. For stomatitis from smoking, spongy gums, or general unhealthiness of the mouth, use the following:—

℞ Glycerin. Ac. Carbol.
Tr. Myrrhæ .....aa ℥iv.
Aq. Rosæ .....ad ℥iv. M.

To be used either as a mouth wash or with a soft tooth-brush.

Shrinkage of Plaster.

To prevent this, use 2 parts plaster and 1 part marble dust.

Amateur Dentistry.

The death is announced, as having occurred at Monkwearmouth, of the Rev. Thos. Snell, in his 79th year. The deceased gentleman, who was widely known in the North of England, had a great reputation as an amateur dentist, and a carefully kept record shows that during the last quarter of a century he had gratuitously extracted 30,000 teeth.—*Daily Chronicle*, February 3.

The Latest in Patents.

A Brazilian has patented an artificial tooth which is hollow and has a valve in one side, through which the air is exhausted, so as to cause the tooth to grip the jaw after it has been fitted to the gum.—*Dental Digest.*

PRESTON CHEMISTS' ASSOCIATION.

A well-attended meeting of chemists was held at Preston on Thursday, April 13, to discuss the Pharmacy Bill introduced by the Lord Chancellor. Mr. F. Hackforth (Leyland) was voted to the chair, and the Secretary of the Preston Chemists' Association (Mr. Williamson) stated that he and Mr. Arkle had succeeded in interviewing the Right. Hon. R. W. Hanbury, M.P. (Financial Secretary to the Treasury), and placed before him what they regarded as the unfair attitude of the Lord Chancellor. He explained that Mr. Arkle, who acted as chief spokesman, reviewed the various Pharmacy Acts from the Charter of the Society to the Act of last year, when, owing to the considerable amount of machinery it would require to make it workable, the Lord Chancellor withdrew what was down for inclusion. His Lordship readily accepted the proffered help of the Pharmaceutical Council with a view of overcoming the difficulty, but instead of their suggestions being heeded, the Lord Chancellor seemed to have gone in direct opposition, for he actually proposed to legalise all the illegalities chemists had complained so bitterly about for the last fifteen years; and this in spite of the repeated opinions of Her Majesty's judges that an amendment of the law should further safeguard the public. It was also pointed out to Mr. Hanbury that when the Act of 1868 was framed the Legislature was not confronted with the fear of an association of unqualified men, for the preamble of that measure distinctly implied that "persons keeping open shop" must obtain the qualification "before commencing such business." In fact, no greater proof was required than schedules "C" and "D," appended to the Act. An unqualified person, whether director or shareholder, in a company did not fulfil those requirements, and the man had yet to be named who would argue that an assistant or manager, though qualified, kept open shop. Mr. Arkle urged upon Mr. Hanbury that the phrase, "before commencing business," distinctly implied that the business should be his *in toto*. As to the contention that it would be difficult to make the Bill retrospective, it was pointed out that law-breakers did not obtain vested rights by persisting in doing that which was wrong. The enactment for the public safety could not be allowed to degenerate into a commercial speculation in human life. As a rule, a chemist was in business for life. All his faculties and his means were devoted to obtaining a living, and any laxity or mistake on his part brought with it disaster, but with the manager of a drug store the position was altogether different. In case of error, the manager simply left that particular place of business to join another, and where it was sought to impose a penalty, he could simply put everything he possessed under his hat and march away to a different branch. Those were some of the difficulties chemists were anxious to see remedied, but unfortunately the Society could not redress the grievances under which registered chemists laboured. On the other hand, the Lord Chancellor had introduced a Medical Bill which, by contrast, exposed to the full the utter inconsistency of his action In that measure, dentists, quite a recent growth as such, and, above all things, midwives, were included, and surely a Society which imposed such stringent regulations and examinations upon its members ought to hold a position equal to midwives and dentists. He therefore asked Mr. Hanbury to obtain the total rejection of the Pharmacy Bill, 1899, and to do his utmost to secure the inclusion of chemists in the Medical Bill, or, in the event of the Pharmaceutical Council promoting a Bill, that he would give it his support. The Right Hon. gentleman replied that the fact of the Bill having been introduced by the Lord Chancellor transformed it into something like a Government measure, and as he was a member of the Government, his hands were to a certain extent tied; but reading the Lord Chancellor's suggestion of last year, and looking at the memorandum and Bill of 1899, it certainly appeared as if his Lordship had turned a somersault. Mr. Hanbury quite agreed that the chemists had rights, and inquired why the penalties under Sections 16 and 17 were not enforced? He (Mr. Williamson) replied that it was a most difficult matter to ascertain who the seller was, and therefore the Sections were absolutely inoperative. Then Mr. Hanbury asked as to the large stores, and Mr. Arkle informed him that the first prosecution was directed against one. In any Bill promoted branches ought to be objected to, and personal sole responsibility substituted. As a fact, in one Lancashire town more than one store was carried on by late errand boys and porters, with the assistance of friends and relatives. It appeared strange to Mr. Hanbury that after the expense of a prosecution and the imposition of a penalty the person fined could simply walk away, but he promised when the Bill reached the House of Commons he would approach his friends, the Home Secretary, the Attorney-General, or the Solicitor-General, in one of whose care it would be placed. In conclusion, Mr. Williamson said that Mr. Hanbury seemed decidedly in favour of the withdrawal of the Lord Chancellor's Bill.

The CHAIRMAN: I think Mr. Hanbury has taken a very favourable view of the matter, and it may be the means of securing something advantageous to our interests.

Mr. WILLIAMSON said it had been suggested that the local associations should send a memorial in their own name to the Lord Chancellor, pointing out the unfairness of the whole Bill.

Mr. LIVESEY said such a proposal would certainly receive the approval of the Preston chemists, who had sufficiently good reasons for not wishing the Bill to become law. Without the slightest doubt chemists had a very good case indeed, and if outsiders could only appreciate the difficulties with which the trade had to contend, they would be among their warmest supporters.

Mr. RAE understood that the Lord Chancellor was himself interested in a drug company, and therefore it was hardly fair that he should introduce a measure calculated to brighten his own interests.

Mr. LIVESEY believed that the opposition had put before the Lord Chancellor a very strong case, and felt that His Lordship would soon be convinced that he was adopting a wrong course if their view of the situation could be brought to his knowlege.

Mr. RAE: But the man himself is a member of an illegal company. He is encouraging that which is illegal.

After further discussion, it was unanimously resolved to forward a memorial to the Lord Chancellor.

The meeting then proceeded to elect the officers of the newly-formed Preston Chemists' Association. Mr. Wm. Stewart was chosen President; Mr. F. A. Williamson, Hon. Secretary and Treasurer; and Messrs. Livesey and Arkle, with the Chairman and Secretary, were appointed to act as the Executive Committee.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

As briefly reported last week, the annual general meeting of this Association was held at the Victoria Hotel, Manchester, on Wednesday, April 12, Mr. HARRY KEMP occupying the chair, in the absence through indisposition of the President (Mr. G. S. Woolley).

Mr. J. WOODRUFF WALTON, Hon. Secretary, read the annual report of the Council for the session 1898-99, which gave a summarised account of the work done during the past session, the thirty-second in the history of the Association, and reported that the prizes presented by the President (Mr. G. S. Woolley) and Mr. J. Rymer Young were competed for as usual during the session, with about the same number of entries as in previous years. The papers in the junior division did not reach the standard which justified the examiner in awarding the first prize; the second prize was won by Mr. B. G. Hough. In the senior division, the first prize was gained by Mr. R. H. Dawson, and the second by Mr. J. S Craven.

The TREASURER (Mr. A. J. Pidd) submitted his annual report, showing that the receipts from subscriptions amounted to £23 15*s.* from seventy-three members, an addition of eleven on the previous year, and there was a grand total of £51 3*s.* 4*d.*, including the balance of £10 on the previous year. This year there was a balance of about £15.

The CHAIRMAN proposed the adoption of the balance sheet and statement of accounts, and said the attendance during the past session was matter for congratulation, and he hoped that this would improve. He commented favourably on the work done by the Association, and expressed his thanks to many gentlemen for the help they had rendered. Altogether they were in a more favourable position than they had been for some time past.

Mr. LANE seconded the motion, and said there was more life in the Association than there had been for some time past. He thought the thanks of the chemists of Manchester and the district were due to the Committee appointed to act in connection with the P.A.T.A., and in regard to the attendance, he thought, instead of having an average attendance of twenty or twenty-five, they ought to aim at having something like fifty. He congratulated the Treasurer on the excellent report he had submitted.

The report was approved.

The Council elected included: Messrs. Walter Gibbons, H. Kemp, W. Kirkby, W. Lane, A. J. Pidd, J. C. Kidd, J. W. Walton, G. H. Westmacott, J. Wild, G. S. Woolley, E. Yates, and J. Rymer Young.

Mr. Kirkby moved, and Mr. Pidd seconded the reappointment of Mr. G. S. Woolley as President, which was carried unanimously.

Messrs. Kemp and Kirkby were re-elected Vice-Presidents, and Mr. A. J. Pidd, Treasurer.

The Chairman, in highly complimentary terms, proposed the re-election of Mr. J. Woodruff Walton, as Hon. Secretary.

This was seconded by Mr. Westmacott, and the Chairman said he had good reason to congratulate the Society on their choice. The motion was carried amid applause.

The Chairman presented the prizes to the successful competitors at the examinations last year, as noted in the annual report.

Mr. T. Woodruff was added to the P.A.T.A. Committee.

The New Pharmacy Bill.

The Chairman referred to the next items on the agenda—"Suggestions for the draft Pharmacy Bill," "The Dispensing of Medicines by Unqualified Assistants in Surgeries," and "The Misuse of Chemists' Titles," and hoped they would be considered *en bloc*. He said the Lord Chancellor had seen fit to introduce into the House of Lords a Pharmacy Bill of his own, and it was of such a character that for the time being it knocked the bottom out of their proposals for that night. He thought that the suggestions for a draft Pharmacy Bill and the misuse of chemists' titles affected very much the Bill of the Lord Chancellor.

Mr. Kirkby said the matter was of great interest to pharmacists, inasmuch as they thought there was a great danger in removing the safeguards as to the education of pharmacists provided by the Acts of 1852 and 1868. It was hardly possible for them to deal with the Bill in any methodical manner; it was a jumble from beginning to end, short as it was. He thought that the opposition ought not to be based on personal interests, but the interests of the public, and then they could go to Parliament with clean hands and ask after what had been done in the Act of 1868 in regard to the dispensing of poisons, that it was entrusted to individual pharmacists who had undergone an examination which was very much more stringent now than it was at that time, that they ought to advance something in the nature of right. Having certain responsibilities they had also certain rights, but while the Legislature had pledged itself in the Acts already passed to protect their interests, he thought the Lord Chancellor in his Act had distinctly opposed them. In regard to the dispensing of medicines by unqualified assistants the time had come when they had got to look that matter in the face. The matter could be no longer neglected. They must also do the utmost they could to enlighten the public on these matters, and he was going to urge them to pass a resolution in that the pharmacists should be added to the other names in the Bill introduced by the Lord Chancellor for the protection of dentists and midwives. He could not possibly conceive how a company could go out and act as a midwife. He concluded by moving the following:—

> That this Association is gravely concerned at the character of the Pharmacy Amendment Bill introduced into the House of Lords by the Lord Chancellor, which appears to be completely subversive of the principle of the Pharmacy Acts of 1852 and 1868, which is that the professional education of the individual chemist and druggist, or pharmaceutical chemist, affords the only safeguard to the public in the dispensing and selling of poisons. This Association would urge upon the Council of the Pharmaceutical Society the necessity of at once opposing the Bill, and would suggest that means be taken to secure the inclusion of chemists in the other Bill introduced by the Lord Chancellor in favour of medical men, dentists, midwives, etc. It pledges itself to do its utmost in assisting the Council of the Pharmaceutical Society in this matter.

Mr. Swindells thought it would be wasting time to discuss the character of the Lord Chancellor's Bill, which would enable companies to do what an individual could not do. He urged them to give strong support to the Council of the Pharmaceutical Society in the matter, and also that they should ask the members for Manchester and Salford to give their assistance in the same direction.

Mr. J. Rymer Young said that having just left a meeting of the Council he could assure them that there was no uncertainty as to what they were doing in regard to this iniquitous Bill which was sought to be thrust upon them. The resolution which had been arrived at was one of unqualified opposition to the Bill introduced by the Lord Chancellor, and a strong Watch Committee had been formed in conjunction with the Pharmaceutical Society with that end in view. There was a painful feeling that pharmacists had been snubbed, and remembering the invitation to make suggestions by the Lord Chancellor it was almost inconceivable that he should have put forward such a Bill before the House of Lords. They had two objects in view, one was to reject one Bill and the other was to secure the word chemist in the other. He advocated the absolute rejection of the Lord Chancellor's Bill.

Mr. Slack and Mr. J. Bell having spoken, the resolution was carried, and the Secretary was requested to communicate it officially to the Secretary of the Pharmaceutical Society.

A vote of thanks to the officials of the Manchester Association for their services was carried with enthusiasm.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The first meeting of this Association after the Easter holidays was held at 73, Newman Street, W., on Thursday, April 13, the President, Mr. F. W. Gamble, in the chair. There was not a very large attendance. The minutes of the last meeting having been read and confirmed, Dr. H. A. D. Jowett communicated a series of notes on

Methods of Alkaloidal Assay in their Pharmaceutical Application.

Dr. Jowett introduced his subject by remarking that the question of the assay of galenical preparations containing alkaloids is highly important at the present time, on account of the adoption of this principle in various pharmacopœias and the tendency for the manufacture of such preparations to pass entirely into the hands of the wholesale druggist. The paper dealt first with general methods of assay of drugs, and then the assay of official preparations. The general method, the author said, is to extract the powdered drug with a suitable solvent, then extract, either from this solvent or from the residue left by its evaporation, the alkaloid by dilute acid, then, after rendering alkaline with ammonia, to extract the alkaloid with an immiscible solvent, which is then removed by evaporation and the residue weighed, either directly or after purification, as total alkaloid. In his opinion, the best methods for extraction are (1) with alcohol—either ammoniated or acidulated, strong or dilute, or mixed with chloroform. This is best carried out in a Soxhlet apparatus, when the nature of the alkaloid in question will permit of this exposure to heat. (2) The Keller method, when the drug is exhausted by maceration with ammoniated solvent, usually a mixture of ether, chloroform, and ammonia, and then drawing off an aliquot portion of the menstruum or better still, by maceration and percolation. The alkaloid is then removed from this solvent by acidulated water. The difficulties met with in the first of these general methods, Dr. Jowett explained, are (1) that of extracting the varnish or sticky mass left after distilling off the alcohol, and (2) the tendency to emulsification when the alkaline liquid is shaken with the immiscible solvent, particularly chloroform. This method answers better with roots than with leaves. The Keller method, he thought, is the most useful general method for alkaloidal assay, but the drug is best extracted as suggested by Gunn for coca leaves, viz., by maceration and percolation with the ammoniated solvent. The objections to the method of extraction usually described and employed are (1) considerable time and labour is required in the maceration of the drug; (2) it is very difficult to avoid loss of the volatile solvent, either by a faulty stopper or by evaporation during the transfer of the liquid to the measuring vessel. These difficulties are overcome by the process of maceration and percolation, this method answering admirably for leaves, as well as roots and stems. Methods involving the use of lime or magnesia, the author said, have only a limited application, as very few alkaloids can be subjected to this treatment without suffering decomposition. The alkaloid, as thus obtained by these methods, is generally impure, and should always be checked by some additional operation. Methods of purification by lead acetate or animal charcoal are useless on account of loss of alkaloid, whilst precipitation of the alkaloid by potassio-mercuric iodide, iodine, phospho-tungstic acid, tannin, etc., and subsequent regeneration of the base from the precipitate, is not to be recommended on account of the great liability to loss in the additional operations involved. Titration of the crude alkaloid with standard acid and alkali, he thought, is the most valuable check on the purity of the crude product, and the work of recent years enables the pharmacist in the majority of

cases to carry out this titration with a suitable indicator. Titration with potassio-mercuric iodide (Mayer's reagent) had not proved satisfactory; in a few cases titration with iodine had been used, excess of standard iodine being first added, the periodide filtered off, and the residual iodine in the filtrate determined by thiosulphate of sodium. The most useful and general method was therefore to determine the total alkaloid by the Keller modified method, and then supplement this by titration with standard acid. Dr. Jowett was of opinion that there is considerable room for extension in the standardisation of fluid extracts, etc., but in all cases it is very essential that the process of assay should determine the proportion of active principle present, instead of, or in addition to, the amount of total alkaloid. Various criticisms and suggestions were then made on such preparations in the B.P. that require assay. No method is at present known of determining the amount of aconitine in aconite preparations. Any method of assay for ext. preparation of hyoscyamus must determine not only the total alkaloid, which is an easy matter, but the proportion of scopolamine present. Methods are needed for the assay of coca preparations. Possibly the amount of petroleum spirit-soluble alkaloid would suffice for physostigma preparations where the ether-soluble alkaloid could be taken as the standard, and particularly in the case of jaborandi, where more information is needed as to the chemical nature of the alkaloids present before any method of assay can be suggested. Finally, it was urged that greater attention should be paid to the fact that an approximate assay of the active principle in a drug is of more value than an accurate determination of the total alkaloid.

At the conclusion of the paper, the PRESIDENT expressed the pleasure it had given him to listen to such a highly practical paper. They must all admire the great pains Dr. Jowett had taken to compile so large a volume of notes as he had brought before them that night. He was sure they had all gained ideas which would prove useful.

Mr. HAROLD WILSON having commented on the paper, Mr. GEO. PEARSON moved a very hearty vote of thanks to Dr. Jowett which was accorded by acclamation, and Dr. JOWETT having replied, the meeting terminated.

GLASGOW CHEMISTS' AND DRUGGISTS' ASSISTANTS' ASSOCIATION.

As the result of a preliminary meeting of assistants held on March 17 last, at which it was agreed to make an effort to form a union of assistants and apprentices, a large and enthusiastic meeting of about 100 assistants from all parts of the city was held in the Lesser Waterloo Rooms, 41, Waterloo Street, Glasgow, on Wednesday, April 12, 1899, at 9.15 p.m.

On the motion of Mr. DAVID STEVEN the chair was taken by Mr. J. P. GILMOUR, of the Victoria Dispensary. The Chairman briefly explained the purpose for which the meeting had been summoned, and called upon Mr. D. Massie, Interim Secretary, to read the report of the Provisional Committee as to what had been done and was proposed.

Mr. MASSIE then read the report, in which it was suggested that a union, to be called the Glasgow Pharmacy Club, should be formed consisting of chemists' assistants and apprentices, and such honorary members as might be recommended by the Committee of the Club. The inquiries of the Provisional Committee had satisfied them that such a scheme could be successfully carried out.

The CHAIRMAN then called upon Mr. David Taylor, who had first suggested the scheme, to explain the new movement.

Mr. TAYLOR said there had been a feeling for a considerable time that it was very desirable to have a bond of fellowship among chemists' assistants in Glasgow. It was felt to be a great disadvantage that those engaged in the same calling in the city did not know one another, and the older Association did not quite meet the need. It was thought that a club such as was now proposed would go a long way to supply what they desired. It was, of course, a question of finances, but he did not think they should have any difficulty in securing and fitting up, say, one or two rooms where they could have a library and other accessories, and where members could meet of an evening and have a smoke, or discuss matters of common interest to them as pharmacists. They could also have meetings either of a social nature or otherwise, say, once a week or once a fortnight, or as often as might be found suitable. He felt sure that in a large city like Glasgow they should have a strong and healthy association of chemists' assistants and apprentices.

The CHAIRMAN then called upon Mr. Rutherford Hill, of Edinburgh, to address the meeting.

Mr. HILL said he had to congratulate them on the large attendance, which augured well for the success of the Association they were inaugurating. He took this meeting as evidence of an aspiration after unity and fellowship and organisation among assistants and apprentices in Glasgow. Such an aspiration was always to be welcomed and in every possible way encouraged. He had the honour to be one of the founders of the Edinburgh Chemists', Assistants', and Apprentices' Association more than twenty-one years ago. That was the day of small things, and some even of the leading assistants in the town predicted that six months would see the end of it. But it had lived till now and done good work. At a large festive gathering the other day it celebrated its majority in undiminished vigour and with abundant promise of future vitality and usefulness. The Edinburgh Association had some advantages, the chief being the generous action of the Pharmaceutical Society in giving accommodation for the holding of their meetings. In Glasgow they would have greater difficulties to contend with, but difficulties were made to be conquered, and he doubted not that they were able to overcome them. It was to be remembered that the old Association really originated in a movement among the assistants. In course of time it had no doubt developed into what was doubtless regarded as more of a masters' association. Such a result was almost inevitable. But there was no reason why there should be any antagonism between the new Association and the older one: he did not believe there would be. On the contrary, he felt quite sure, from his experience, that the junior Association would form a most important feeding school and source of strength to the older Association. That had been emphatically the case in Edinburgh. Most of the men who took a leading part in the trade Association and in the Pharmaceutical Society had served an apprenticeship to public life in the junior Association. Organisation was of importance to the members of any craft; it was pre-eminently so to the pharmacist, and particularly so at the present time. A complicated evolutionary process had been going on during the last sixty years, and to-day we saw the profession of pharmacy in Britain emerging with a specific form more distinct and definite than at any previous period. It was a profession, too, in which a very large and rapidly increasing number of its members were not in business on their own account, but were in the position of giving their professional services to those who required them. This had arisen in connection with movements taking place during recent years which were yet far from being well understood or rightly appreciated; but the time was one in which organisation of all engaged in the practice of pharmacy was of the utmost importance. They would inevitably find that whenever they honestly studied the question of organisation the Pharmaceutical Society, with its Royal Charter and Statutes, furnished a platform of unity and a ground of advantage as a rallying point for all British pharmacists such as could not be surpassed. On a recent memorable occasion Mr. Cross, M.P., said to him in conversation, "I admit that your Society is a Parliamentary engine of enormous power, and that in my case it has been used with great skill." It was to be noted, too, that last year's legislation had made the Society more democratic than ever. Every registered chemist, whether employer or assistant, could now be a member, a councillor, and even president of the Society. It was a mistake to leave everything to the Council. The Council desired and required the interest and guidance and support of every member, and it was only when this was freely given that the great work the Council might yet do could be accomplished. With regard to their own meetings, he observed it was intended to have social gatherings. These were of the utmost value, but might sometimes be overdone. It was well to remember that when they met they met as pharmacists; for the promotion of pharmacy and their own advantage as pharmacists. He therefore suggested that discussions on subjects of pharmaceutical interest should constantly be kept in view, and that those behind the counter would find abundant material for interesting talks in their daily experiences and difficulties. The working of the Association would not be all plain sailing; there were tides in the affairs of associations, and they might sometimes get into very slack water. But by standing together and persevering they would keep the ship going, and the

favourable breeze would come again. He heartily wished them God-speed and abundant success in their venture.

The meeting then proceeded to consider the constitution of the new Association, and a lively discussion took place as to the name. The Provisional Committee suggested "The Glasgow Pharmacy Club." On this being moved and seconded Mr. Sturgeon moved that it be called "The Glasgow Chemists' and Druggists' Assistants' Association." This also was seconded, and on being put to the vote, the latter was carried. It was agreed that the Association should consist of assistants paying 7s. 6d. a year and apprentices paying 3s. 6d. a year. It was also agreed that such honorary members as were elected by the Committee should pay an annual subscription of £1 1s. (*sic*). The Committee were to have power to elect an honorary president. The following office-bearers were then elected :—J. P. Gilmour, President ; T. C. Adams, Vice-President ; David Steven, Treasurer ; Malcolm Nicholson, 252, Paisley Road West, Secretary ; D. Massie, Assistant Secretary ; and as members of Committee, Messrs. Correy, Dexter, Grierson, Lawe, Milne McAdam, McKie, Martin Meldrum, Mowatt, Robertson, Sturgeon, Taylor, and Wright. It was agreed that the Committee should meet at 21, Waterloo Street, on April 21, at 9 30 p.m., and the meeting then closed.

HALIFAX AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of the Association was held at the Old Cock Hotel, on Wednesday, April 13, the President, Mr. G. M. Cobb, in the chair. There was a large attendance. Mr. Councillor Hebden, J.P., was congratulated by the President and Mr. J. B. Brierley, the Vice-President, on having been placed on the Commission of the Peace for the county Borough of Halifax.

Mr. Hebden having briefly responded,

The Lord Chancellor's Pharmacy Bill

was then thoroughly discussed, and

Mr. H. C. Brierley, Hon. Sec., proposed

That this Association oppose most strenuously the Lord Chancellor's Bill re company pharmacy.

Mr. W. R. Fielding, pharmaceutical chemist, seconded, and the motion was agreed to.

It was next proposed by Mr. Brierley

That the Pharmaceutical Council be requested to petition that pharmacists be included in the Companies (Medical Profession) Bill now before the House of Lords, making the clause read: It shall be unlawful for a company under the Companies' Acts, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist, chemist, or midwife.

This was seconded by Mr. W. R. Comyns and carried unanimously.

The Hon. Secretary was instructed to send the following letter to the Duke of Devonshire, after being signed by all the chemists in Halifax and district :—

To His Grace the Duke of Devonshire, K.G.

May it please your Lordship,—The undersigned beg to draw your Lordship's attention, as the most influential nobleman in our immediate vicinity, to the following resolutions passed at the monthly meeting of the Halifax and District Chemists' Association respecting the legislation of the practice of company pharmacy :—

Resolved,—That this Association oppose most strenuously the Lord Chancellor's Bill on company pharmacy, which is entitled a Bill to Amend the Pharmacy Act of 1868, under Section I. of which "a company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist if and so long only as the business is *bona fide* conducted by a manager or assistant, being a duly registered pharmacist or chemist and druggist as the case may require," but subject to this provision "anything which would be an offence under Section 15 of the Pharmacy Act of 1868 if committed by a company."

And inside thereof we humbly petition that pharmaceutical chemists and registered chemists and druggists be included in the Companies (Medical Profession) Bill, 1899, now before Parliament, making the clause read, "It shall be unlawful for a company under the Companies Act, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist, chemist, or midwife." And, further, we venture respectfully to draw your Lordship's attention to the accompanying circular, which more fully explains our view of this matter.

The Poison Regulations.

Specimens of poison labels and bottles were exhibited, which had been received from Mr. Silverlock and Messrs Townsend, of Exeter. These showed different methods of conforming with the new poisons regulations.

BRITISH PHARMACEUTICAL CONFERENCE.

A meeting of the Executive Committee was held at 16, Bloomsbury Square, W.C., on Wednesday, April 12.

Present: Mr. J. C. C. Payne (President) in the chair; Dr. Attfield, Dr. Symes, and Mr. C. J. Park (Vice-Presidents); Mr. J. C. Umney (Hon. Treasurer); Messrs. Bird, Collier, White, and Wright; Messrs. Naylor and Ransom (Hon. Gen. Secretaries) and Mr. Nightingale (Assistant-Secretary).

Letters regretting their inability to attend were read from Messrs. Atkins, Hills, Downes, Martin, Atkinson, McKnight, and Turney.

The following report was presented by the Sub-Committee appointed at the last meeting of the Executive to consider the best methods of increasing the membership :—

The Sub-Committee appointed by the Executive Committee of the British Pharmaceutical Conference have had under consideration the most suitable methods for increasing the membership of the Conference, and have decided that in their opinion the best plan to adopt would be the appointment of direct representatives in various districts, who, by their personal interest in the Conference and their influence, might be able to obtain fresh members by putting before them the advantage to be obtained by such membership. It has been felt that it would be necessary to apply some distinctive title to the gentlemen appointed in the various districts, and the name that has been suggested for such honorary appointment is that of "Local Corresponding Secretary." The Sub-Committee has had under consideration various methods for the subdivision of the United Kingdom for this representation, and submits to the Committee a list of the most important towns in the United Kingdom as centres for representation, bearing in mind to some extent the condition of pharmacy in the various districts. Those towns have been selected in the first instance where the Conference has met in past years, and in addition to those the principal pharmaceutical centres having local associations, etc.

On the motion of Dr. Attfield, seconded by Dr. Symes, the above report was adopted, and the Hon. Gen. Secretaries were requested to communicate with certain gentlemen to ascertain whether they would be willing to accept the positions of Local Corresponding Secretaries.

The President reported that he had been very hospitably entertained at the dinner of the Plymouth, Devonport, and Stonehouse Chemists' Association, and he regarded this as an indication of the hearty welcome the Conference might expect at their meeting at Plymouth in July.

Mr. Park announced that satisfactory progress was being made with the local arrangements, a detailed programme of which would be presented to the next meeting of the Executive for adoption. It is probable that the reception will be held on Monday, July 24, and that the Mayor of Plymouth will welcome the members of the Conference at the opening of the sessions on the following day. It is suggested that the morning of Thursday, the 27th, be spent in visiting the extensive and beautiful grounds of Mount Edgcumbe, and the afternoon devoted to a steamboat trip up the river Tamar. A letter was read from Mr. J. G. Prebble, resigning the position of hon. colonial secretary for Bengal, owing to his leaving India. The resignation was accepted with regret, and the honorary secretary was requested to write to Mr. Prebble, expressing the thanks of the Executive for his services during his tenure of office.

Four gentlemen, having been duly nominated, were elected to membership.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.

A meeting of the above Association was held on Wednesday evening, April 12, at the Hotel Métropole, Newcastle-on-Tyne, Mr. T. Maltby Clague presiding over an average attendance of members. The preliminary business having been settled, Mr. Clague opened a discussion on the

Lord Chancellor's Pharmacy Bill,

strongly urging all the members to do their best to bring influence to bear against the passing of such a measure.

Messrs. Burdekin, Whitehead, Duncan, Buckley, Ridley, Kerse, and Wright took part in the discussion, and ultimately it was agreed that a Parliamentary Committee be appointed—consisting of Messrs. Schofield, Clague, Ridley, Weddell, Ellis, Wright, and the Secretary—to wait upon the local members of both Houses of Parliament in the district to endeavour to induce them to oppose the Bill. The annual excursion was arranged to be held at Morpeth on Thursday, July 13, on the invitation of the President, Mr. F. E. Schofield.

ABERDEEN PHARMACEUTICAL ASSOCIATION.

A meeting of this Association was held in Robert Gordon's College on April 19, Mr. CHARLES SIMPSON, President, in the chair.

Mr. GILES brought forward a motion recommending that the Association join the Federation of Local Pharmaceutical Associations. He read over the rules of the Federation, and also some correspondence with the Secretary. He thought it was desirable that chemists throughout the country should fall into line, and be prepared to support pharmaceutical legislation, or to oppose such measures as the Pharmacy Bill introduced by the Lord Chancellor.

The motion was seconded by Mr. CRAIG, and after considerable discussion, adopted.

The PRESDENT then brought under consideration the Bill of the Lord Chancellor. He thought we might memorialise individual members of the House of Lords who had a local connection to oppose the Bill, and appoint a Watch Committee, whose duty would be to watch the progress of the Bill, so as to be able to inform the Association in case of danger. This was agreed to, and the whole matter left to the Executive.

On the suggestion of Mr. PATERSON, the following resolution was sent to the Pharmaceutical Society :—

> That the Aberdeen Pharmaceutical Association pledges itself to loyally support the Council of the Pharmaceutical Society in any steps it may think necessary to take in order to oppose the Lord Chancellor's Pharmacy Bill.

PROCEEDINGS UNDER THE PHARMACY ACTS.

PHARMACEUTICAL SOCIETY *v.* CARTER.

At the Brompton County Court on Tuesday last, before His Honour Judge Stonor, the action of the Pharmaceutical Society of Great Britain *v.* Carter came on for hearing. The action was brought to recover a penalty of £5 incurred under the provisions of the Pharmacy Act, 1868 (31 and 32 Vic., cap. 121), by the defendant for, being an unqualified person, having sold a poison, viz., morphine, contained in a bottle of Dr. Collis Browne's chlorodyne.

Mr. T. R. Grey (instructed by Messrs. Flux, Thompson and Flux) appeared for the Pharmaceutical Society. Mr. C. H. Kirby (solicitor) appeared for the defendant.

Mr. Grey having briefly cited to the Court the provisions of the Pharmacy Act under which the action was brought, said the defendant was an unqualified assistant or manager at 19, King's Road, Sloane Square, now carried on as the Sloane Pharmacy Stores, Limited.

Mr. John Partridge deposed to having purchased on December 12 last, a bottle of Dr. Collis Browne's chlorodyne, at 19, King's Road, Sloane Square, from a young man in the shop, whose name he was subsequently informed by the errand boy was Carter.

The defendant, Mr. F. C. Carter, was here directed to stand up, but the witness Partridge said that was not the man who served him.

Mr. F. C. Carter was then sworn, and in answer to Mr. Grey, said he was manager at the shop in question. He was not a qualified man ; but there was a qualified man on the premises on December 12. Being asked who else served in the shop on December 12, witness replied a Mr. Richards, a qualified dispenser, and Mr. Long.

Mr. Partridge then read the following description of the man who served him, which he said he made within an hour afterwards : "December 12, 1898. Bought at Sloane Pharmacy Stores, served by a dark-complexioned man, about thirty years, with dark, wavy, frizzy hair, clean-shaven, except moustache, whose name was said to be Carter."

In reply to Mr. Grey, Mr. Carter said that would answer the description of Mr. Long, who was not now in his employ. Mr. Long was now residing at 5, Montpelier Street, Brompton Road.

The Judge : You can have the summons adjourned to serve him.

Mr. Kirby : They have summoned Mr. Carter, for whom I appear, and I should ask that the case be dismissed against him.

The Judge : Certainly not, I shall adjourn the case to May 16.

PHARMACEUTICAL SOCIETY *v.* F. W. BARRET.

This case was down for hearing at the same Court, but upon being called it appeared that the defendant had confessed judgment for the amount claimed.

LETTERS TO THE EDITOR.

An Open Letter from a Candidate for the Council.

Sir,—In presenting myself for the first time before the members of the Pharmaceutical Society as a candidate for a seat on the Council, I may yet be permitted to point out that I am not an absolute novice in matters relating to the government of the Society, having been co-opted a member of the Council in December last. The special experience I have gained in the time which has since elapsed leads me to believe that there is much room for improvement to be effected, both in regard to control of the Society's affairs and to the regulation of pharmacy generally. At the same time, I cannot ignore the fact that the only satisfactory way of securing the desired reforms is by legislative action, initiated by the Council of the Society. The Pharmacy Bill now before the House of Lords is a deliberate attack upon the professional position of registered chemists, and involves a practical repeal of the Pharmacy Acts of 1852 and 1868. It must therefore be opposed at all costs when—if ever—it reaches the House of Commons. The least that registered chemists have a right to expect is that they should be included in the Companies (Medical Profession) Bill, which ought to be amended so as to prohibit the practice of pharmacy and the use of pharmaceutical titles by any association of unqualified persons. I also hold that the compounding of medical prescriptions and the sale, for medicinal purposes, of all poisons and potent substances should be restricted to registered chemists. With a view to improving the position of the craft, I would also approve the compulsory registration of pharmaceutical students not less than three years before entering for the qualifying examination, and I think the production of evidence of a regular apprenticeship with a registered chemist should be insisted upon in the case of everyone who seeks registration. In addition, it is my strong desire to see the Society, through its Council, take the lead in dealing with all matters affecting the interests of the craft, whether in Parliament or elsewhere, and I would therefore advocate the improvement of the Society's system of provincial organisation—on the lines recently laid down by the Vice-President, Mr. Newsholme—and a much closer working agreement with all associations promoted to remove the difficulties and improve the position of registered chemists.

London, April 17, 1899. JOHN F. HARRINGTON.

Do the Council's "Suggestions" Formulate the Opinion of the Trade?

Sir,—Having read with much satisfaction, in the report of the Council meeting, the President's admirable statement of the position in which chemists and druggists are now placed by the action of the Lord Chancellor, and the remarks made by several members of the Council in support of the principles underlying the suggestions for a draft Pharmacy Bill, I was not less surprised than disappointed to find that on that occasion a discordant note appeared to come from Mr. Storrar, showing that there may not be that perfect unanimity of view as to the requisite amendment of the Pharmacy Act which is so eminently desirable now that arduous task is about to be essayed. I refer to the uncertainty Mr. Storrar is reported to have expressed as to whether he would have been prepared altogether to approve of the suggestions forwarded to the Lord Chancellor for his guidance as to the desires of chemists and druggists qualified under the Pharmacy Act, had he been present at the meeting when they were adopted. Two considerations mentioned by Mr. Storrar in explanation of that remark appear to have chiefly influenced him, viz., the improbability of Parliament or the Government giving anything in the way of protection, and, secondly, that the safety of the public is the "only argument" to be used in favour of an amendment of the law. To the first of those propositions I give unreserved assent, but in our case I am, at the same time, decidedly of opinion that the qualified chemist has rights under the Act which are as much entitled to respect as the safety of the public. I think with Mr. Carteighe, that the Council, as representing registered chemists and druggists, did not go to the Lord Chancellor with a request for protection or favour, nor can I admit that there is any occasion to take that position, either towards the members of the Government or towards Parliament. Our claim, as well expressed by Mr. Rymer Young, is that the meaning originally attached to the Pharmacy Act shall be restored, and that individuals who have complied with the requirements of

the Act as to qualification, shall be relieved from that invasion of the rights thus acquired by them, which has been practised by companies of unqualified persons. The invaded rights of chemists and druggists are the necessary sequence of the limitation imposed upon the exercise of their business as "expedient for the safety of the public." The invasion of those rights by bogus companies I regard as piratical: the attempt to make such companies legal is spoliation. Believing that view to be practically shared by every qualified chemist on the Register, I cannot conceive what possible ground Mr. Storrar can have for declaring that he certainly should not support a Bill embodying the suggestions as they stand. His declaration of belief that such a Bill would not have a "ghost of a chance" of being carried, I cannot accept as such a reason, any more than I can comprehend the basis of that belief, for Mr. Storrar acknowledges the suggestions to be a "successful attempt on the part of the Council to formulate the opinion of the trade with regard to future legislation." But if the trade be a factor of any account in connection with legislation controlling it, what better basis could there be for application to Parliament than the opinion formulated in the Council's suggestions? To say that there is no possible chance of taking up the position occupied in 1868 is a manifold fallacy; first, because it assumes that the rights acquired by chemists and druggists under the Act are so delusive that they will be ignored by Parliament; secondly, because it assumes chemists' vested interests will be held of less account than the interests of unqualified interlopers; and, thirdly, because it ignores the circumstance that since 1868 the status and qualification of chemists and druggists have been so far improved under the operation of the Act that their position is incomparably stronger than it was at that time, when qualification was altogether voluntary. The procedure of controlling company trading, in connection with the practice of pharmacy or the business of the chemist and druggist, would be akin to that of the man who having cast out the evil spirit and having his house swept and garnished took in seven devils worse than the first to help him to perdition. Accepting Mr. Storrar's statement that he is pleased to find the Council so unanimous in deciding on resolute opposition of the Lord Chancellor's Bill let me ask what possible ground can there be for opposition, if company trading must of necessity be controlled instead of being suppressed? Does not such a premature assumption savour of undertaking, in advance, the work that Parliament should perform? Chemists and druggists, generally, are so convinced that they have been unfairly and unjustly exploited by companies, robbed of their well-earned rights and of the advantages that should naturally follow from their obedience to the law, that I am disposed to believe they will follow the lead of the Council in resolute opposition of the Lord Chancellor's Bill, and in demanding that future legislation to regulate the practice of pharmacy shall be carried out on the principles of the Council's suggestions, so as to restore the obvious common sense significance of the Pharmacy Acts and extend their application in a manner consistent with the promotion of their art, the interests of those engaged in it, and the safety of the public. To secure a satisfactory response to that reasonable demand requires nothing more than united and persistent insistance on the maintenance of chemists' statutory rights, by the continued violation of which the public would suffer no less than legally qualified chemists and druggists.

April 17, 1899. PHARMACEUTICAL CHEMIST (181/45).

Oleum Rusci.

Sir,—In a former communication referring to this article I mentioned the deodorising properties it possesses in removing the offensive smell of decomposed glue. I now beg to offer for your notice the result of some further experiments, proving that ol. rusci is a prophylatic. Selecting two substances that are remarkably prone to change, namely, albumin and fresh butter, they were thus treated:—

1. The white of an egg well shaken in a bottle with 5 drops of the oil was transferred to a 2-oz. stone jar, covered with paper perforated by pin pricks.

2. The white of an egg diluted with an equal bulk of distilled water with 5 drops of the oil, placed in a wide mouth bottle, and well shaken.

3. 2 oz. New Zealand fresh butter scalded, and a small proportion of curd removed by straining and then transferred to a shallow vessel covered with perforated paper.

These preparations were made on January 1—and the apparatus ranged upon a window sill having a northern aspect. At the expiration of twenty-eight days the contents were examined; there was no perceptible disagreeable odour. After another twenty-eight days the same result. During March we had exceptionally cold weather with sharp frost causing the fracture of the bottle—a fact not being noticed at the time a thaw occurred the fluid leaked away. The stone jar and the porcelain saucer resisting the cold, on April 1 the buttter was removed and heated to boiling point. Half an ounce of paraffinum durus and a quarter of an ounce paraffinum molle added, and the ointment stirred until cool. The albumin in jar evaporated spontaneously, assuming a dark colour with considerable tenacity. Herewith please receive samples of products. The ointment possesses agreeable emollient properties when rubbed upon the hands, applied to the lips and eyelids it is non-irritant. Ol. rusci may possess therapeutic virtues, which I think of having tested by some of my medical friends; it would probably be useful in ill-conditioned sores, etc. *Nous verrons!*

Kew, April 11, 1899. R. GOODWIN MUMBRAY.

An Attachment for Poison Bottles.

Sir,—Are you quite sure the tin label of Mr. Cooper (see *ante*, page 350) really complies with the regulation "in bottles rendered distinguishable by touch"? It is the bottle that must be distinguishable by touch. According to your explanation of the working of the tin label it is by sight not by touch that it arrests attention. It would be no protection, for instance, in the dark or to a blind person, and the design of the regulations is to meet and give protection even in such circumstances. The tin label may be a very useful additional precaution, but it is not a legal compliance with the regulations. The same objection applies to the various devices in regard to stoppers and corks and a small bell attached by a clamp to the neck of the bottle. In the case of the bell it is by hearing and not by touch that the warning is given.

April 18, 1899. MORE SCOTTICO (182/9).

*** Inasmuch as medicine bottles of ordinary size, bearing the tin labels referred to, could hardly be grasped without the labels making their presence felt, the addition certainly "appears sufficient, for the time being, to render bottles distinguishable by touch from ordinary medicine bottles." But, of course, no one should think of using anything of the sort except as an additional precaution or in a case of the troublesome kind specially referred to last week. Fluted bottles are distinctly preferable for lotions, etc.—[ED. *P.J.*]

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Removing Birth Spot (T. B. P.—26/27).—Ask the advice of a competent surgeon on the point. The matter is altogether outside our province.

Disguising the Aroma of Coffee (J. G.—26/26).—We are unable to help you in the matter, and fear you will find the problem a difficult one. Your best plan will be to experiment with different essential oils, etc.

Fuller's Earth (J. P.—26/25).—We have no information on the subject, and are therefore unable to advise you. Why not communicate with some large dealer in fuller's earth, such as Mr. G. S. Mumford, Farringdon Road, E.C.?

Methylated Spirit in Liniments (J. D.—26/31).—Yes, it may be employed in the manufacture of aconite, belladonna, compound camphor, and soap liniments, as those preparations are considered by the Revenue authorities to be incapable of being used as beverages.

Notice to Quit (J. R.—27/1).—The time of day is immaterial in either case, so far as we are aware.

French Medical Degree (J. D. T.—27/1).—(1) Yes. (2 and 3) We cannot say. (4) Write to the Secretary, Faculty of Medicine, Paris.

Mexican Hair Restorer (N. N.—26/29).—We cannot undertake to investigate the composition of proprietary preparations. Why not purchase a bottle and examine the contents?

Whitworth Red Bottle (J. M. C.—26/30).—The formula for this is apt to vary, but the following is a typical form:—Oil of origanum, 1; compound tincture of lavender, 4; rectified spirit, 8.

Analyst (B. G. R.—27/2).—You should take steps to pass the examinations of the Institute of Chemistry. Write for particulars to the Secretary, 30, Bloomsbury Square, London, W.C.

Urine Testing (M. K. B.—27/4).—The best small book on the subject is Legg's 'Guide to the Examination of Urine' (Lewis, 3*s.* 6*d.*). For more advanced work, consult Allen's 'Chemistry of Urine' (Churchill, 7*s.* 6*d.*).

Labelling Preparations of Chloroform (G. H. L.—26/28).—The question of necessity turns on the quantity of chloroform present. In the preparations you mention the use of a poison label does not appear to be called for.

Fastening Knife Blades (J. W.—26/11).—A mixture of plaster of Paris and crushed resin is largely used for the purpose. The cavity in the handle is nearly filled with the mixture, and the previously heated tang of the blade is then forced in, fusing the resin as it comes in contact with it. When cold the blade should be firmly fixed. Try equal parts of plaster and very pale resin.

Liquor Santal Co. (E. P. D.—27/6).—Resin of copaiba, 400 Gr.; caustic potash, 80 Gr.; fluid extract of cubebs, 2 fl. drachms; boiling distilled water, 2 fl. oz. Boil well together, until the resins are saponified, adding more potash if necessary; cool, and add oil of sandalwood, 80 minims; spirit of nitrous ether, 1 fl. oz.; rectified spirit, 2 fl. oz.; and concentrated infusion of buchu to produce 10 fl. oz.

Pharmaceutical Preliminary (J. H.—27/3, and others).—Yes, after August, 1900. The word "year" should have come at the end of the sentence, to make the matter clear. The same addition is required in Dr. Stevenson's report, printed at page 339. Judging from the number of communications which have been addressed to the Editor on this small point, there must be prevailing a feverish anxiety to secure registration as students with a minimum of qualification in the form of education.

Cows and Scarlet Fever (W. P.—26/16).—You ask, has it ever been proved beyond doubt that a cow can have scarlet fever or communicate that complaint to a consumer of its milk? The answer is, No! In the Hendon outbreak some years ago Drs. Klein and Power believed that the cows were suffering from scarlatina, but the existence of this disease in the cow is discredited by all veterinary authorities, both here and on the Continent. Although we are at present unacquainted with the infective agent of scarlatina, it is hardly credible that so well known an organism as *Staphylococcus pyogenes* could possibly produce that disease. Almost all samples of milk contain this organism, derived from the teats, or udder, or from the hand of the milker.

Sugar in Urine (J. E. M.—25/32).—The polarimetric determination of sugar in urine is not altogether satisfactory. The identity of the sugar in urine with dextrose has not been established in all cases, hence there is always a certain amount of doubt in applying the formula used for calculating the amount of dextrose from the observed rotation. Moreover, urine always contains variable amounts of bodies, such as creatinine, which have a lævorotatory effect sufficiently strong sometimes to neutralise entirely the dextro-rotatory effect of glucose, present to the extent of 2 or 3 per cent. For this reason small quantities of glucose cannot be determined with any accuracy. The most satisfactory method for the determination of sugar in urine is the reduction of Fehling's solution as modified by Gerrard. A description of this process will be found in the Journal for April 20, 1895.

DISPENSING QUERIES AND NOTES.

Liquor Arsenicalis in Pills.—C. W. R. (25/12) asks what is the best method of dispensing the following:—

℞ Quininæ Sulphat. ..... Gr. i.
Liq. Arsenicalis ..... ♏ ii.
Ext. Lupuli ..... Gr. i.
Ft. pil. i. Mitte xxx.
i. ter in die.

Note.—There are two courses open to you. In the first place you may mix the ingredients, as written, in a porcelain dish, and evaporate the mixture to a firm consistency over a water bath. The residue can then be formed into a satisfactory pill mass by the use of some simple excipient. The other way is to weigh out the equivalent quantities of arsenious anhydride and potassium carbonate, and after thorough trituration with the quinine sulphate add the corresponding quantity of tincture of lavender. This mixture should make a good pill mass on the addition of the extract, if the latter be fairly soft. If not, add sufficient syrup.

Proof Spirit.—J. A. F. (176/12) asks "what volume of proof spirit will 100 volumes of x over-proof spirit furnish? According to Squire's 'Companion' the volume will be $100+x$—the loss of volume due to contraction; while other authorities at my command give $100+x$ as the resulting volume. Attfield makes special reference to this point. In preparing proof spirit from 100 volumes of rectified spirit, B.P. 1885, which is 56 O.P., he says that 60 volumes of water are necessary to produce 156 volumes of proof spirit."

Note.—You appear to be somewhat confused between the volume of water which must be added to 100 volumes of the over-proof spirit, and the actual increase in volume caused by the addition. Thus 100 volumes of 56 over-proof spirit *will furnish* 156 volumes of spirit, but in order to do this 60 volumes of water *must be added* because a contraction occurs on mixing strong alcohol with water. The extent of this contraction varies with the strength of the alcohol which is diluted, and with the proportions of such strong alcohol and water which are mixed.

Extracts in Pills.—H. G. W. (25/26) asks what would be the best excipient to use in massing the following pills, viz.:—

℞ Pil. Rhei Co. ..... Gr. xxiv.
Ext. Aloes Aquosi ..... Gr. xxiv.
Ext Nucis Vom. (B.P. 1885) ..... Gr. vi.
M. ft. Pil. xlviii (in arg.)

He has used glycerin and syrup (equal parts) but finds they crumble very much in rolling.

Note.—Add some rectified spirit with the glycerin and syrup. Make the mass rather soft; it will soon harden after rolling and cutting, as the spirit evaporates quickly.

Essential Oil in Pills.—E. P. (22/24) asks what is the best excipient for the following pills:—

℞ Ext. Nuc. Vom. ..... Gr. $\frac{1}{2}$
Salol ..... Gr. iii.
Ol. Anethi ..... M. $\frac{1}{2}$
Ft. pil. i.

Note.—We should advise powdered soap and liquorice. The pills are sure to be rather large in size.

Sodium Salicylate with Alkalies.—G. J. (25/29) says that in dispensing the following mixture and on allowing it to stand for several days he finds it turns quite black. He says: "could you give me an explanation of what takes place, and would it be injurious for the patient to take after it has been standing some time?"

℞ Sodæ Salicylat. ..... Gr. 80.
Potass. Bicarb. ..... Gr. 160.
Aq. Chloroformi ..... ad ℥viii.
M. Ft. mist. ℥i. bis die sum.

Note.—There is no obvious reason why you should get the result you describe. We have had the mixture made according to your prescription, and it has not changed colour. Alkalies and salicylate are so commonly prescribed together that we think the darkening must be due to impurity in some of your materials. Examine each of these carefully by the B.P. tests and let us know the result. As to whether the blackened mixture would be injurious, it would be impossible to say unless one knew what was the cause of the darkening.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Peptic and Pancreatic Digestion. When fibrin is subjected to peptic or pancreatic digestion the action of the ferment is not complete when the albuminoids are no longer precipitated by nitric acid. According to V. Harlay, in both instances action progresses for a considerable period after this point is reached, and at ordinary temperatures, in protected solutions, the optical activity of these being gradually diminished. In the case of pancreatin a considerable amount of tyrosine is formed, but with pepsin this is not the case, but a chromogen, insoluble in absolute alcohol, but soluble in alcohol 85-75 per cent., is produced. Solutions containing this body give, with the juice of *Russula delicia*, a reddish colour, turning to an intense and persistent green, while tyrosine solutions, under like conditions, give a black colour. If the products of peptic digestion be submitted to the pancreatic ferment this characteristic chromogen disappears, and tyrosine seems to take its place.—*Journ. de Pharm.* [6], 9, 225.

Formaldehyde Combinations. By treating menthol or borneol with formaldehyde, A. Brochet has succeeded in obtaining dimenthol and di-borneol formal. The former $CH_2(OC_{10}H_{19})_2$ is a white solid body having a peculiar odour, quite distinct from that of menthol, and melts at 56° 5 C. It is insoluble in water, sparingly soluble in cold alcohol, but readily dissolved on warming in that menstruum; it crystallises from it in long, felting, silky needles. The borneol compound $CH_2(OC_{10}H_{17})_2$, after several recrystallisations, separates from alcohol in pearly scales, melting at 166° C., and distilling without decomposition between 344°-345° C. at ordinary pressure. —*Comptes rend.*, 128, 612.

Capsaicin. Micko has isolated capsaicin from the ethereal extracts of the fruits of *Capsicum annuum*, in the form of white crystals, melting at 63° – 63°·5 C. The author attributes to the body the formula $C_{18}H_{28}NO_3$, while Flueckiger, by overlooking the nitrogen, gave the formula as $C_9H_{14}O_2$. Capsaicin has a slightly acid, phenolic character, and contains a methoxyl group. From the derivatives, a benzoyl derivative has been obtained. If an alcoholic solution of capsaicin is mixed with platinum chloride in excess and evaporated, a distinct odour of vanillin is noticeable, and a small quantity of platinum double salt is obtained. The author believes capsaicin to be the active principle of the capsicum fruits. This body is probably identical with the capsacutin of Norbitz, who attributed to it the formula $C_{35}H_{54}N_2O_4$. See *P. J.* [4], 5, 298.—*Chemik. Ztg.*, 23, 26, after *Ztsch. Unters. Nahrungs* and *Genussmittel.*

Iodine in the Air. A. Gautier finds that iodine in the state of vapour does not occur in the air, either in that collected in Paris, or in woods, on mountains, or at sea; nor does it occur in the form of soluble salts, but that it is found in minute traces in an insoluble form in the air of Paris, and to a much greater extent in sea air, being probably combined in microscopic vegetations, such as algæ, lichens, and spores floating in the air. A specimen of fine dust collected under the colonnade of the Panthéon at Paris at a height of 40 metres was found to yield 0·066 per million of iodine, and the dust in the form of a greenish-black lichenoid incrustation adhering to the stones of the same building, at a height of 77 metres, gave no less than 0·551 parts per million of the metalloid. One thousand litres of Paris air contained 0·0013 milligramme of this combined iodine. The same quantity of sea air contained 0·0167 milligramme.—*Comptes rend.*, 128, 643.

Alkaloids of Datura Alba. The air-dried flowers of *Datura alba* from China have been found by O. Hesse to contain hyoscine 0·51 per cent.; hyoscyamine, 0·03 per cent.; and atropine, 0·01 per cent. The composition of the hyoscine is similar to that of hyoscine obtained from henbane, $C_{17}H_{21}NO_4$. The alkaloid is amorphous and dissolves readily in cold water. Treated with potassium carbonate it does not undergo any change, and the action of moist silver oxide and dilute soda solution does not convert it into atrosine. It is not, therefore, identical with the scopolamine of Schmidt.—*Pharm. Centralh*, 40, 89, after *Sudd. Apoth. Zeitung*, 1899, 2.

Odorous Principle of Jasmine. A. Verley has succeeded in isolating and subsequently in synthetising the chief odorous principle of jasmine, which is stated to be the methylene acetal of phenyl-glycol, to which the name jasmal has been given. To produce this body phenylglycol, 50, is heated on the water bath with water, 300, sulphuric acid, 125, and formaldehyde, 100. A light oily layer is quickly formed, which is removed with ether and rectified by distillation *in vacuo*. The pure jasmal thus obtained boils at 101° C., at a pressure of 12 Mm., and at 218° C. at ordinary pressure; its density is 1·1334 at 0° C. In the pure state it possesses the characteristic jasmine odour, and agrees in its properties with the jasmal isolated from the flowers. Like that body, it is destroyed by distilling with acidulated water, but is very stable in cold water and in alcoholic solution. By substituting other aldehydes of the fatty series for formaldehyde other new acetals of phenylglycol have been prepared.—*Bull. Soc. Chim.* [3], 21, 226.

Staining Malaria Parasites. The nucleus stain of Romanowsky, a mixture of eosine and methylene blue, is not always successful, since good results depend upon the presence of certain impurities in the methylene blue which are, according to Nocht, essential to the formation of the nuclear stain. These are mostly met with in polychromic methylene blue, the alkaline reaction of which must first be neutralised with acetic acid. The solution is then mixed with ordinary methylene blue until it is clear and blue. A 1 per cent. aqueous eosine solution is diluted with this fluid until it shows only a reddish tint near the edge. To obtain good results the preparations should macerate in the stain for some time, if need be even for twenty-four hours. Preparations which have become too dark may be decolorised carefully with dilute acetic acid.—*Chem. Zeit.*, 23, 9, after *Centralh. Bakteriol.*, 24, 839.

Laurotetanine. J. D. Fillipo has continued his research upon the alkaloid laurotetanine from the bark of *Tetranthera citrata*, which Holmes has shown to be identical with *Daphnidium cubeba* (*P.J.* [3], 23, 846). Attention was first drawn to the presence of alkaloids in the fruit of the plant by Braithwaite and Farr in 1886 (*P.J.* [3], 17, 231). The author considers the amorphous alkaloid isolated by them in small quantity to have been impure laurotetanine. In the bark this base occurs to the extent of 0·25 per cent. In the pure state it crystallises in needles, melting at 134° C., and having the composition $C_{19}H_{25}NO_5$. It forms crystalline halogen salts. Indications of the presence of three methoxyl groups and two of hydroxyl were obtained, the constitution of the base being probably $C_{16}H_{11}(OCH_3)_3(OH)_2{\cdot}NH$. In physiological action laurotetanine is similar to, but less toxic than, strychnine.—*Archiv*, 236, 601.

NOTE ON IPECACUANHA CULTIVATION IN INDIA.

BY DAVID HOOPER.

The most recent publication issued by the Reporter on Economic Products to the Government of India is an interesting pamphlet on the subject of the "Phosphatic Nodules of Trichinopoly, and the Use of Mineral Phosphates in Agriculture." The pamphlet is one of the *Agricultural Ledger* series, No. 20 of 1898. The discovery of an extensive bed of mineral manure in South India has aroused considerable interest among planters, and numerous inquiries have been made regarding the methods of using the deposit. The *Ledger* deals with the history of the discovery of the nodules in Trichinopoly, the chemical composition, the use of phosphates generally, and the results of experiments made with selected Indian crops.

A very important result is recorded, which has a special bearing on the cultivation of economic plants. In this Journal for 1896* Mr. Hooper described a series of experiments performed in Ootacamund on the action of calcium phosphate in developing the growth of the tubers of the jalap plant (*Ipomœa purga*). The phosphatic manure was most satisfactory in its influence, as it not only increased the weight of the tubers, but also the amount of the resinous active principle.

The effect of phosphates on the cultivation of ipecacuanha has since been tested, and it will be of interest to quote the paragraph on this subject from the *Agricultural Ledger*. Mr. Hooper writes:—"Another medicinal plant which has been tried in various places in India with indifferent success is the ipecacuanha (*Psychotria ipecacuanha*), a native of Brazil. This has been introduced in Burliar, Kulhutti, and Ootacamund on the Nilgiris, Nilambur in Malabar, and Mungpoo in the Darjeeling district, but adverse conditions of climate and soil have hitherto affected its growth in these localities. In August, 1896, the writer instituted a series of experiments with these plants in the Government Botanic Gardens, Nilgiris. Several young cuttings of the average height of six inches were planted out in four boxes of prepared soils. Box No. 1 contained an admixture of calcium superphosphate; box No. 2, powdered phosphate from Trichinopoly; box No. 3, dried cattle manure; and the soil in box No. 4 was left in its natural state.

"The plants were completely uprooted in September, 1898, or after they had been two years under treatment, and the results of the experiments were carefully recorded by Mr. R. L. Proudlock, the present Curator of the Gardens. One or two cuttings in each box had partly or wholly died during this period, so that the results are calculated on the three largest plants in each box. The average height of the plants in box No. 1 was 11¼ inches; No. 2, 12⅓ inches; No. 3, 11⅓ inches; and No. 4, 11⅓ inches. The height of the plants has thus uniformly increased irrespective of the manures employed.

"The roots were separated from the stems, washed in water to remove adherent soil, and then thoroughly air-dried and accurately weighed. By calculation of these results the following instructive conclusions were arrived at:—

Grown in superphosphate, the average root weighed 5·6 grammes.					
,,	powdered phosphate,	,,	,,	5·3	,,
,,	cattle manure,	,,	,,	5·3	,,
,,	ordinary soil,	,,	,,	2·6	,,

"These figures clearly demonstrate that the most valuable portion of the ipecacuanha plant gives double the yield when grown in the presence of phosphatic manure compared with that produced in natural soil."

* *Pharm. Journ.*, July 11, 1896: "The Effect of Phosphatic Manures on the Growth of Jalap Tubers."

THE JUST CLAIMS OF REGISTERED CHEMISTS.*

BY J. RYMER YOUNG.

The present is undoubtedly the most critical time that has been known by registered chemists since the Pharmacy Act of 1868 was passed, for the "useful and honourable profession" of pharmacy, as the *Lancet* is good enough to term it, is threatened with extinction; threatened, too, by that Lord Chancellor who, reversing the part of Balaam, has cursed where he was called to bless. I hope I may not be regarded as unduly irreverent in suggesting such an analogy, the more especially as, in order to make the analogy perfect, I feel I ought, as a matter of course, to say something about

THE ASS OF THE STORY.

It has been a matter of no little difficulty to identify that interesting animal in this connection and to determine exactly what part the modern representative of Balaam's guide, philosopher, and friend has played in the matter. There is, I believe, an impression in certain quarters that the Council of the Pharmaceutical Society has to some extent played the part of the patient quadruped referred to in relying upon the Lord Chancellor to do anything to benefit pharmacy; but one respectable trade journal has for some time past assiduously nursed the idea that it is the members of the Society who are playing the part of the ass, in paying their guineas to support that organisation, on the off-chance of the Council being able to effect some improvement in their condition. Does it not strike you, however, that an unmistakably palpable vein of inconsistency pervades those fulminations, for cannot you recall how, only a few short months ago, the self-same paper was expressing approbation of the Lord Chancellor's efforts to extinguish the profession of pharmacy, and doing everything in its power to encourage that exalted legal luminary to persevere in his dire purpose? A quotation from Bret Harte's "Ah Sin" seems to come in appropriately in this connection:—

> Which I wish to remark,
> And my language is plain,
> That for ways that are dark
> And for tricks that are vain
> The heathen Chinee is peculiar.

Balaam's "mount" appears to have wandered somewhat from the correct course—it must also be admitted that the driving was a trifle erratic. Anyhow, he never belonged to the pharmaceutical stable, and not there, surely, is his modern representative to be found.

Enough, however, on that point. Let us return to the Lord Chancellor and consider what our position now is, in view of his surprising change of attitude. It is necessary in the first place to remind you that we are not in any way committed by anything the Lord Chancellor has done in this matter. As will be within the recollection of all of you, it is a matter of fact that Lord Halsbury's action in the matter was purely voluntary at the outset, not having been instigated in the least degree by the Council of the Pharmaceutical Society. He had discovered that the Pharmacy Acts do not cover the case of drug stores owned by associations of unqualified persons, and proposed to add to the Pharmacy Bill then before the Standing Committee of the House of Lords, a clause imposing restrictions upon the practice of pharmacy by such associations. But when the Draft Clause made its appearance, its provisions were such as would obviously have proved quite ineffective to check the development of

UNQUALIFIED COMPANY PHARMACY,

and though—strange to say—statements were vehemently urged in favour of assisting the Lord Chancellor to damage pharmacy as a craft irretrievably, the Council wisely, as I think, decided not to

* Address delivered to the North-East Lancashire Chemists' Association, on Tuesday, April 25.

favour a policy of "improvement," which savoured strongly of business suicide.

The Draft Clause was therefore withdrawn, and subsequent events have proved that the stand taken by the Council was thoroughly justified. For what has happened since? Encouraged by Lord Halsbury's evident desire to remedy a defect in the law, the Council of the Pharmaceutical Society requested the President to enter into communication with him and ask for his powerful assistance to secure amendment of the defective statutes. Suggestions for a draft Pharmacy Bill were submitted to the Lord Chancellor, who still professed great interest in the matter, but, except for a mere formal acknowledgment, nothing more has been received from the Lord Chancellor by the Council from that day to this. At the same time, as you are well aware, his Lordship has not been idle with regard to our affairs, for like a bolt from the blue

THE PHARMACY BILL OF 1899

has fallen and caused some little consternation by the positive iniquity of its proposals. That Bill is practically identical in its terms with the Draft Clause—previously approved in certain quarters already referred to but rejected by my fellow-councillors and myself—with the exception that it proposes, in addition, to enable associations of unqualified persons to adopt pharmaceutical titles—titles which individuals only are entitled to use after producing satisfactory evidence of qualification. A more monstrous proposal it would be difficult to conceive, for as the *British Medical Journal* remarks, any meddling with the proper use of titles, implying qualification, is a dangerous precedent, and the prohibition of the use of titles by anyone other than a duly qualified person, whether a corporate body or not, should not be conditional in any way, but should be absolute. That, I need hardly say, is also my view of the matter, and I cannot insist too strongly that the registered chemists of Great Britain must protest with might and main against the Lord Chancellor's ill-conceived and unjust attempt to degrade the legally qualified pharmacist to the position of "a mere employé of trading capitalists."

It is useless to mince matters, then; we must fight, not only to protect our titles, but also to restrict the practice of our profession to individuals who are registered as being competent to practise it. The due qualification of the proprietor of the pharmacy is the key to the situation, and I hold that we are, in strict justice, entitled to be included within the scope of

THE COMPANIES (MEDICAL PROFESSION) BILL.

The pharmacist's duties are little, if at all, inferior in importance to those of medical practitioners, and far more important to the general public than those of dentists and midwives. Any reason that can be urged for prohibiting the practice of medicine by companies of unqualified persons holds good to an equal extent in the case of pharmacists, and to a greater degree than in that of dentists or midwives. If, therefore, the Pharmacy Bill of 1899 should be pressed by the Government, and the Companies (Medical Profession) Bill is not amended in accordance with what we claim to be our strict rights, it will at least be our duty to oppose the former at every stage, whatever we may ultimately decide upon with reference to the latter.

In the event of failure to receive justice in connection with those Bills, we shall have to shift for ourselves. As the *Pharmaceutical Journal* tersely put the matter a few weeks ago, if Lord Halsbury does not see his way clear to offer suggestions that are likely to prove acceptable to registered chemists as a body, the Council of the Pharmaceutical Society may proceed independently to promote a Pharmacy Bill. In my opinion there is now but little likelihood of the Lord Chancellor doing anything to help us, and the time seems almost ripe for a Bill to be drafted on strictly pharmaceutical lines. Such a Bill ought to be made as comprehensive as is consistent with safety from the dangers attending overloading, and its provisions should correspond closely with the briefly summarised suggestions for improvement embodied in an excellent letter in last week's *Pharmaceutical Journal*, a letter by Mr. J. F. Harrington—the least known, perhaps, but not the least worthy and capable member of the Council. I may be permitted, however, to amplify those suggestions somewhat, and perhaps the best way of dealing with the various points will be to put them in the form of what one might well call

A CHEMIST'S CHARTER.

1. It should be unlawful for any association of unqualified persons to carry on the profession or business of a pharmaceutical chemist, or chemist and druggist, or to use titles protected by the Pharmacy Acts.

2. The compounding of medical prescriptions, and the retailing, dispensing, or compounding of poisons and other potent remedies ought to be restricted to individuals registered under the Pharmacy Acts.

3. All candidates for the qualifying examination of the Pharmaceutical Society should have been registered as "pharmaceutical students" for a period of not less than three years; they should also be required to produce evidence of having been regularly apprenticed to a registered chemist for not less than three years, and of having subsequently gone through a six months' course of instruction at a recognised school of pharmacy.

4. For the purpose of keeping a correct Register, an annual registration fee of one shilling should be payable by all registered chemists who are not members of the Pharmaceutical Society.

5. No registered chemist should be liable to serve on any jury or inquest.

6. When a registered chemist has, after due inquiry, been judged by the Council of the Pharmaceutical Council to be guilty of infamous conduct in a professional respect, the Council should have power to order his name to be erased from the Register.

The whole of the foregoing suggestions are essential in the public interest, as well as for the benefit of pharmacy. If persons not duly qualified under the Pharmacy Acts are to continue to be permitted to avoid the necessity of such qualification by combining together and registering under the Companies Acts, a fatal blow will be struck at the principle of proprietary qualification, and that principle is the most important one involved, when the matter is regarded from tho point of view of the public safety, though that fact has not been sufficiently recognised by Her Majesty's judges or by the public generally. With regard to the proposed restriction to duly qualified persons of the

COMPOUNDING OF MEDICAL PRESCRIPTIONS,

that, again, is necessary for the public welfare. Moreover, the law already enforces such a restriction in Ireland, and I have yet to learn that health and life are more precious there than here, or that Irish pharmacists are more skilful and competent dispensers and compounders than their British fellow-craftsmen. Then, the registration of students at a much earlier period than is now general is one of the most needed reforms of British pharmacy. Such registration cannot be effected until the student has passed a recognised preliminary examination, and the practical effect of the suggested three years' interval would be to make all pharmaceutical students pass the preliminary examination before apprenticeship. A real apprenticeship is also needed, in place of the insufficient substitute which now so frequently passes current. The certified declaration now required of each candidate for the qualifying examination—"that for three years he has been registered and employed as an

apprentice or student, or has otherwise for three years been practically engaged in the translation and dispensing of prescriptions"—is quite insufficient for the desired purpose. We require an apprenticeship of not less than three years with a registered chemist. More than that, at the expiration of the period of pupilage, a proper course of instruction should be gone through. In point of fact that is already done by most students, and I fail to see that there would be any hardship in making compulsory the training which is now undergone voluntarily by all candidates worth their salt. Again,

The Keeping of a Correct Register

s one of the most important functions that devolve upon the Pharmaceutical Society, but to keep the Register accurate and complete it is desirable that every person entitled to registration should be compelled to communicate his latest address to the Registrar at least once a year. That is already done by members of the Society, and would involve but little trouble in the case of other chemists. Whilst his name appears on the Register a chemist should not be liable to serve on juries, for it is of the highest importance that he should not be compelled to neglect the public interest by leaving his post for an indefinite period. Finally, since pharmacy is an honourable calling, I contend that it should be within the power of the elected representatives of the craft to turn black sheep out of the fold. "Evil communications corrupt good manners"—as the copy-book heading of our schooldays so pitilessly repeated till an evil communication possessing some slight degree of novelty came as a welcome relief—and pharmacists can no more afford to have their average reduced than any other class of professional men. Let us, therefore, maintain a lofty standard and keep curselves, like Cæsar's wife, "above suspicion" by cutting off all offending members. The remedy may seem drastic, but under certain conditions it is cruel to be kind, and the knowledge of the penalty awaiting an exposure of conduct of an infamous character would be certain to act as a serious deterrent.

With this declaration of faith I may fitly conclude. It does not seem to me to be either desirable or necessary that I should weary you with a long address on this occasion. What I have said should commend itself to the majority of registered chemists, if not to "all sorts and conditions of men." My intention has been to point out to the members of the Pharmaceutical Society, and others who ought to be, but are not, members of that organisation, how necessary it is to distinguish enemies from friends; how advisable it is to turn a deaf ear to the guile which would fain persuade us that, when we combine for mutual protection and improvement, we are the veriest noodles to depend upon our own judgment rather than upon the specious wisdom of our hostile critics; and how all-important it is that we should be prepared to stand or fall together in the coming struggle. For

A Struggle is Inevitable,

and the issue must be uncertain so long as there is any division in our ranks. No class of professional men or traders is in a better position to make its influence felt in Parliament than the class to which we all belong; no other class has made its influence more felt during the past sixty years. But internal divisions must be avoided, and in order to secure unity of action we must agree upon a common programme. Such a programme has been briefly sketched for you, and I think we have a right to call upon the registered chemists of Great Britain to leave no stone unturned in the endeavour to carry it out. Pharmacy must be for the pharmacist, and I am firmly convinced that it rests mainly with ourselves to make it so.

FORMULÆ, METHODS, AND REACTIONS.
KNOWN BY THE NAMES OF THEIR AUTHORS.

(Supplementary List).*

Galippe (Albumin).—Picric acid solution is added drop by drop to the suspected urine. A white cloudiness indicates the presence of albumin. Compare Hager's alkaloid reagent.

Ganswindt (Rose Oil).—The presence of impurities in rose oil may be detected by noting the odour given off on atomising a mixture of one drop of the oil and 1½ fl. oz. of water in a moderately warm room.

Gantler (Cottonseed Oil in Lard).—Dissolve 1 Gm. of melted fat in 10 C.c. petroleum ether, add 1 drop of concentrated sulphuric acid, and shake the mixture. If cottonseed oil is present, a dark brown colour appears, whilst pure lard remains colourless or a light brown.

Gatehouse (Arsenic).—A black stain is produced on silver nitrate paper held over the mouth of a test-tube in which an arsenical solution is heated with caustic soda and a strip of aluminium.

Gawalowski (Alcohol in Peru Balsam).—The odour of aldehyde is given off on adding Peru balsam containing alcohol to a solution of potassium bichromate in sulphuric acid.

Gawalowski (Benzine : Benzol).—Picric acid is soluble in the benzol, giving an intense yellow colour, but not in benzine.

Gayard (Manganese in Zinc).—On treating with diluted sulphuric acid and electrolysing the clear solution, a violet colour appears around the platinum electrode.

Gayard (Tannin : Gallic Acid).—To distinguish tannin from gallic acid, add a concentrated solution of lead acetate. The tannate formed is insoluble, whereas the gallate is said to be soluble.

Gayon-Ganon-Molher (Aldehydes).—The test solution is prepared according to a later formula by mixing 100 C.c. sodium bisulphite solution, s. g. 1·3, with 150 C.c. 1 pro mille aqueous fuchsin solution, diluting with 1 litre of water, and finally adding 15 C.c. concentrated sulphuric acid.

Geissler (Albumin).—A white precipitate is given by urine containing albumin on adding a solution of potassium iodide, 3·32 Gm., and mercuric chloride, 1·35 Gm., in water, 40 C c., and acetic acid, 20 C.c.

Geissler (Fuchsine in Wine).—(1) Amylic alcoholic shaken with the wine, after adding excess of ammonia, takes up the fuchsine only. (2) Melted stearin is poured into wine heated to 60° C., and the mixture shaken briskly. On cooling slowly the stearin will be found to be coloured red if fuchsine be present.

Geith (Stearin in Wax).—Wax containing stearin causes lime-water to lose its alkalinity on boiling.

Genfer (Stain for Micro Sections).—This is a 1 per cent. ammonio-congo red solution, to which is added 1 per mille of crysoidin. The section is first bleached with eau de Javelle, then well washed and made alkaline with ammonia, before immersion in the stain. In vegetable preparations, the cuticle is stained golden-yellow, wood fibres orange-red to straw-yellow, and the phloem rose-coloured. Preparations should be mounted in glycerin gelatin; the colours are permanent.

Gentele (Determination of Sugar).—Pure potassium ferricyanide, 27·45 Gm., and solution of soda, sp. g. 1·34 25 C.c., are dissolved in water and made up to 250 C.c.

Gerber (Fixed Oils in Copaiba).—Pure copaiba remains clear on shaking with ammonia, but the presence of fixed oils causes cloudiness.

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* After Wilder, Schneider, Altschul, etc. Continued from page 237.

Gerhardt (Acetone in Urine).—Treat 10 to 15 C.c. of urine with ferric chloride solution until a precipitate is thrown down. After filtering, ferric chloride is again added to the filtrate. If acetone be present a Bordeaux red colour appears.

Gerhardt (Boiling Matter).—(1) A green colour is produced on extracting the urine with chloroform, decanting, and mixing with ozonised turpentine oil and a little dilute potash solution; (2) A yellow to brownish-yellow colour, with greenish fluorescence, is produced on adding iodine and sufficient dilute potash solution to the chloroform extract.

Gerhardt (Brucine).—A violet colour is produced on dissolving brucine in nitric acid, heating the solution till it becomes yellow, then adding water and a solution of stannous chloride.

Gerrard (Glucose).—This reagent consists of Fehling's solution to which 5 p. c. of potassium cyanide is added, until the blue colour begins to disappear. With glucose solutions the reagent gives no precipitate, but the fluid becomes decolorised.

Gibbs (Stain for Tubercle Bacilli).—Fuchsine, 2, and methylene blue, 1, are well rubbed together with a mixture of aniline, 3 fl. pts.; alcohol (95 per cent.), 15 fl. pts.; adding water, 15 fl. pts. Preparations stained with this solution show the tubercle bacilli red, on a blue ground.

Gilbert (Phosphoric Acid).—Magnesia mixture is used as a reagent, 3·55 Gm. of phosphoric acid being indicated by a solution of 10·15 Gm. of crystallised magnesium chloride, 20 Gm. of ammonium chloride, and 40 C.c. of ammonia 15 per cent. in water, *q.s.*, to make 100 C.c.

Girardin (Sulphurous Acid).—Hydrochloric acid containing sulphurous acid gives a yellowish-brown precipitate on adding to 16 Gm. of the acid 10 Gm. of crystallised stannous chloride and 2 to 3 C.c. of water.

Glénard (Quinine).—On adding a drop of ammonium sulphate, phosphate, or oxalate solution, quinine separates in needle-shaped crystals, visible under the microscope. Cinchonine is amorphous.

Gmelin (Biliary Matter).—In applying this test (see *P.J.* [4], 5, 55), pour cautiously down the side of a conical glass vessel containing 6 to 8 volumes of urine, 2 volumes of a mixture of equal parts of 25 p. c., and red fuming nitric acid, so that the acid may collect at the bottom of the vessel.

Godeffroy (Alkaloids).—In addition to antimony chloride and silico-tungstic acid, Godeffroy recommended, as reagents for alkaloids, solutions of ferric chloride or stannous chloride in hydrochloric acid. For cinchona alkaloids he applied the microsulphocyanide test. See 'Proceedings Am. Pharm. Assoc., 1877-78.

Golding-Bird (Aldehyde).—Spirit of nitrous ether containing aldehyde is coloured yellow on adding dilute potash solution.

Gorup-Besanez (Creosote).—An emerald-green colour is produced on adding an alcoholic solution of ferric chloride to creosote; carbolic acid is coloured blue.

Gorup-Besanez (Peptone).—This is the biuret reaction, a pale rose-red colour being produced on adding a little potash or soda solution, together with a few drops of a much-diluted solution (almost colourless) of copper sulphate. Albumin gives a blue colour; albuminates, violet.

Graham-Hoffmann (Alkaloids).—Take up the alkaloids with animal charcoal, then extract them by suitable solvents.

Gram-Gunther (Micro-Section Stain)—This is a modification of Gram's process, in which the section, after treatment with iodine, is put into absolute alcohol for half a minute, then in 3 p. c. hydrochloric acid-alcohol for ten seconds, and again for a few minutes in absolute alcohol, this treatment being continued till no more decoloration takes place. Finally the sections are placed in xylol, then in Canada balsam.

Grandeau (Digitalin).—Sulphuric acid dissolves digitalin with a green colour, which is changed to red by bromine vapour, and the red to green again on adding water.

Grangé (Iodine).—A violet or blue colour is produced on adding iodine to hyponitrous acid and chloroform or starch paste.

Gréhault or Gréhant (Cruciferous Oils).—The fixed oils of Cruciferæ give a black colour on boiling with aqueous potash solution and adding silver nitrate solution.

Grenacher (Borax Carmine).—No. 1 (aqueous): Borax, 1 to 2, and carmine, 0·5 to 0·75 is boiled in water, 100 fl. pts.; acetic acid is then added carefully to the purple solution, till the colour changes to deep red, and resembles the usual ammoniacal solution. It is filtered after 24 hours. No. 2 (alcoholic): carmine, 2 to 3, borax, 4, are dissolved in boiling water, 100 fl. pts.; then diluted with an equal volume of alcohol, 70 per cent., and filtered after standing a long time.

Grenacher (Hæmatoxylin Stain).—Mix 4 C.c. of a saturated solution of hæmatoxylin crystals in absolute alcohol and 150 C.c. of a saturated aqueous solution of ammonium alum. After the solution has stood in the light a week it is filtered, and glycerin, 22 C.c., and methyl alcohol, 25 C.c., added.

Grenacher (Hydrochloric Acid Carmine).—As much carmine as will lie on the point of a knife is dissolved in 50 C.c., alcohol 60 to 80 per cent., to which are added 3 to 4 drops hydrochloric acid. Then filter.

Grenacher (Staining Solution for Cell Nucleus).—Carmine, 0·5 to 1; potassium or ammonium alum, 1 to 5; dissolved in water, 100 fl. pts. After filtering, a trace of carbolic acid is added.

Griess (Nitrous Acid).—In addition to the reactions with phenylenediamine and sulphuric acid respectively, nitrous acid gives a yellow to brown colour with a solution of diamidobenzoic acid in sulphuric acid.

Griess-Hosvay (Nitrous Acid).—Sulfanilic acid, 0·5, is dissolved in acetic acid, 150 fl. pts., then naphthylamine, 0·1, boiled with water, 20 C.c. The colourless solution is poured off from the blue-violet residue, and acetic acid, 150 fl. pts., added to it. The solutions are then mixed and, if necessary, rendered colourless by shaking with zinc dust. The reagent should be kept in well-closed vessels.

Griessmayer (Free Alkalies).—The colourless mixture produced on adding 1 C.c. of centinormal iodine solution to one drop of tannin solution becomes a brilliant red on adding a faintly alkaline solution.

Griessmayer (Tannin).—(1) The author's test for free alkalies is reversed, the same red colour being produced. (2) Starch solution coloured blue with very dilute iodine solution (1 : 100,000) is decolorised on adding a tannin solution; potassium nitrite restores the colour.

Grigg (Albumin).—Metaphosphoric acid precipitates albumin. See Berzelius' albumin reagent.

Grodyki (Acetal).—Iodoform is formed on adding to a dilute solution a few drops of hydrochloric acid, followed by soda solution and iodine.

Grove (Morphine).—A dark brown colour is produced on adding a few drops of sulphuric acid, heating moderately, and adding a trace of potassium perchlorate entirely free from chlorate.

Gruber-Widal (Reaction).—See Widal reaction.

Guareschi (Carbolic Acid).—A purplish-red colour is produced on evaporating to dryness with potash and mixing the warm residue with chloroform.

Guibourt (Rose Oil).—(1) Impure oil is coloured brown when

exposed under a bell-jar with iodine; (2) An apple-green colour with nitrous acid vapours indicates rose-geranium oil; (3) Sulphuric acid does not destroy the odour of pure rose oil.

Guyard (Tannin: Gallic Acid).—See Gayard.

Guyard (Manganese in Zinc).—See Gayard.

Guyot (Ammonia).—Potassium bromide is added to an acid solution of mercuric nitrate until the precipitate at first formed is redissolved; then caustic potash solution is added until an orange-yellow precipitate forms, which is then filtered off. The solution gives a white precipitate with ammonia. Compare Nessler's reagent.

Guyot (Iodoform).—A blue colour is produced on heating iodoform in a flask and passing the vapour through a heated tube over starch.

THE LIVERPOOL CHEMISTS' ASSOCIATION.

A Short Outline of Its History.

The Liverpool Chemists' Association owes its being to that venerated father of British pharmacy, the late Jacob Bell, who convened a meeting at the Queen's Hotel, Liverpool, on June 4, 1849, during one of his periodical tours in the provinces, undertaken with the object of reviving the waning interest of chemists and druggists in educational matters. At that meeting it was decided to appoint a committee to organise an association, and at a later gathering on June 22 the Liverpool Chemists' Association commenced its existence, with the late Robert Clay as President, Mr. Edward Evans as Vice-President and Treasurer, and Mr. J. B. Edwards as Secretary, together with a Council representative of the first rank of local pharmacists.

The first meeting for the reading of papers was held in the Royal Institution, Colquitt Street, on July 22, 1849, at which a lecture was delivered by Mr. Waldie, F.C.S., and communications read by Mr. Trumper on "Water Gas," and by Mr. Rawle on "Persesquinitrate of Iron"; specimens of fictitious myrrh gum bdellium were shown by Mr. Edward Evans, and a flowering plant of *Cotyledon umbilicus* by Mr. R. D. Grindley, of Chester. Since that time to the present, meetings have been held regularly every month (except during the summer), at which many papers of a high scientific value and useful practical character have been presented, which have subsequently appeared in the columns of the *Pharmaceutical Journal*. It is interesting to read recorded in the minutes of the Council in 1850 that "they desire to express their sense of obligation they are under to Mr. Jacob Bell, who, as editor of the *Pharmaceutical Journal*, has rendered them essential service, by giving a place to their transactions in that valuable periodical, and to whom they are much indebted for advice and assistance at the formation of the Society."

Very early in the history of the Association the nucleus of a library and materia medica museum was got together and housed in the Royal Institution. At the present time the library has reached a considerable size, and of late has been brought up to date by the purchase of new works on pharmacy and the allied sciences. As a means of reference to the wealth of information contained in the periodicals relating to pharmacy it is invaluable to local chemists. The museum possesses many good and rare specimens of foreign origin, and as it is in process of overhauling it is to be hoped it will soon be in a better position to minister to the wants of local students of pharmacy than in the immediate past.

Courses of lectures and classes in chemistry, pharmacy, materia medica, and botany were begun in 1849 for students' benefit, under the auspices of the Association, and were continued until about 1883, when the late J. S. Ward, an old "Square" prizeman, established the Liverpool School of Pharmacy, to which the Council of the Association afterwards gave official recognition, appointing a visiting committee and having the syllabus of studies submitted to its notice and approval.

The Association being, during its early life, more of an educational and scientific character than one for the purpose of watching and studying trade interests, another society came into existence whose sole end and aim was summed up in its title, the Liverpool Registered Chemists' Trade Association. This was, of course, subsequent to the passing of the Pharmacy Act of 1868. However, in October, 1887, this became merged in the older Association, and since that time both scientific and trade discussions have occupied the attention of the members, with considerable advantage to the vitality of the Association and benefit to local pharmacy. The study of botany in Liverpool received a needed stimulus from the lectures provided by the Association, and it was owing to representations from it that a portion of the Botanical Gardens was laid out for the cultivation of medicinal herbs. One of the largest and most flourishing of the numerous scientific organisations in Liverpool—the Naturalists' Field Club—was the result of an Excursion Club instituted in 1859 by the Librarian of the Chemists' Association, Mr. T. D. Walker, for the study of systematic botany.

A glance through the records of the Association during the fifty years of its useful existence shows what a variety of subjects have been descanted upon at its meetings and what a surprising number of what are generally regarded as recent introductions in materia medica and pharmacy have been exhibited among the miscellaneous communications. One sees such things as "Water Gas," "Extraction in Vacuo," "Action of Ferments on Strychnine," in the early fifties, and "Electric Light," "Dialysis," micro-photography and spectrum analysis at a later date, whilst, as may be supposed from the importance of Liverpool as a trade centre and great port, the notices of foreign drugs are simply innumerable. In the space of fifty years there have been on the rolls of the Association names of many well-known men. Among the founders were the late John Abraham, whose sons still maintain the traditions of pharmaceutical integrity left by their father; Edward Evans, by a happy and fortuitous choice, elected President for this year of jubilee; Edward Davies, the veteran chemical lecturer; Dr. Nevins, a man of wonderfully versatile talents and deep reading; the late Robert Clay, H. Sugden Evans, and others.

The amount of assistance and the general support afforded at all times to the Association by the wholesale trade in the city have contributed in a large degree to the vigorous and healthy life of the Association, which has drawn some of its firmest supporters and most talented contributors from that apparently inexhaustible source. In conclusion, it may be safely said that for loyalty to the cause of true pharmacy and to its representative—the Pharmaceutical Society—the Liverpool Chemists' Association is second to none, and fully deserves the congratulations of the whole pharmaceutical community on reaching its fiftieth year of useful and healthy activity.

Carbon Disulphide Water in Typhoid.—According to Dujardin-Beaumetz, carbon disulphide water is of exceptional value in cases of typhoid. Distilled water, 500; carbon disulphide, 25; and oil of peppermint, 30 drops, are shaken together in a capacious bottle, and, after standing, the clear aqueous liquid is decanted. Eight to twelve dessertspoonfuls of this are taken daily in water or milk. The undissolved disulphide may be treated again with more water.—*Pharm. Post*, 31, 417.

ROYAL INSTITUTION.

In the fifth lecture by Lord Rayleigh, on

The Mechanical Properties of Bodies,

capillarity formed the subject of the lecture, which was, as is always the case, abundantly illustrated by experiments. There has been no lecturer, probably, since the time of Faraday, who could perform the most delicate and apt experiments with the simplest of apparatus, as can Lord Rayleigh. A few corks and a supply of water, a rod of sealing wax, some string, paper, glass rod and tubing, together with a few weights and some sticks or planks of wood, such simple articles form an ample provision of apparatus for this wonderfully expert experimentalist. As a case in point, in order to demonstrate one of the principles of capillarity, that the elevation of the column of liquid is inversely proportional to the diameter of the tube, two glass tubes of different bore were placed in a vessel of water. The capillary tube contained by far the higher column of water. The reverse effect takes place in the case of mercury; the rule, however, holds good here also, if it be stated that the depression is inversely as the diameter of the tube.

The ease with which cotton and woollen goods become damp and remain so is accounted for by the principle of capillarity, since these materials are fibrous, and each fibre acts as a capillary tube. In the case of a liquid between two sheets of glass it may readily be seen that the elevation is dependent on the thickness of the liquid layer.

In discussing the exact nature of capillarity Lord Rayleigh pointed out that a liquid behaves as if its surfaces tended continually to contract. This is well seen in drops of rain that assume a spherical form; it is due not merely to the mutual attraction of the molecules, but to the tendency to surface-contraction. A soap-bubble assumes a spherical form; it is exposed to an internal pressure and to capillary tension. The pressure is equal to twice the capillary tension divided by the radius of the bubble. A remarkable difference may be noted between the collapse of soap and saponin bubbles. The former contract and disappear like a flash, the latter wrinkle into a shapeless mass, like gold-beater's skin in appearance. The coloured bands, or Newton's rings, of soap films were then shown, and it was explained how the colour depends on the thickness of the film. It is not known to what water owes its power of foaming, say, on falling from a height. It is probably due to a soluble substance of vegetable origin, because distilled water does not produce a foam.

In considering the surface of water—*e g.*, in a tumbler—two forces must be borne in mind, viz., gravity and surface tension. That some force is present in opposition to gravity is proved by the fact that, instead of following the surface of the earth, the surface is higher towards the edge. On inverting a tumbler, the equilibrium is stable as to surface tension, but unstable as to gravity. Whether the liquid will fall or not is largely a question of the diameter of the containing vessel. If a tube be taken in which the water remains on inversion, owing to surface tension overcoming gravity, the stable equilibrium may be upset by allowing ether vapour to come in contact with the surface of the liquid. As a rule the weight of a drop of liquid is proportional to the diameter of the delivery tube; hence it depends rather on capillary tension than on the density of the liquid. It is interesting, in this connection, to note that a flow of liquid dropping from a pipette may be hastened and converted into a continuous stream by bringing near it the vapour of ether. The formation of drops is a complicated problem, and not entirely a statical question. It cannot be solved *a priori*.

In the sixth and last of the series of lectures Lord Rayleigh first mentioned certain facts connected with the flow of one liquid on another. If a drop of oil be floated on water it does not spread itself equally over the surface, but forms a button in one place. Close observation, however, shows that the surface is in reality covered with an extremely thin film of oil. On pouring carbon disulphide upon water the surface is not covered in this way, because, owing to its volatility, carbon disulphide cannot exist in very thin films, but passes at once into the surrounding air.

Surface tension is largely influenced by temperature; thus if water be warmed its surface tension is lowered. Considerable difficulty attends any attempts to obtain a perfectly clean water surface, absolutely free from grease. Plato was not aware of this, since it was the contamination of a water surface by a minute film of oily impurity that led him to formulate what he called the theory of superficial viscosity. It is not to be wondered at, however, that Plato made a mistake, because the experiments were conducted at a time when he had lost his sight, and so had to content himself with the reports of others, and the replies which they gave to his questions. The best way to thoroughly cleanse a contaminated surface is to pass a wind over it.

Everyone knows that bubbles appear on the sides of a glass containing soda-water. This was once thought to be due to a film of air on the glass which attracted the gaseous bubbles. Tomlinson has shown that this is not so, but that a greasy or otherwise unclean surface is the cause. Thus, a surface well cleansed with concentrated sulphuric acid, and afterwards thoroughly rinsed with clean tap water, will remain clean for days or years if hermetically sealed, and at the end of a long period of time will not become covered with gas when soda-water is poured in. Were air the cause, it would have ample opportunities of becoming attached to the glass, so that the air film theory is easily exploded.

Lord Rayleigh next spoke of a force that exists in the interior of all liquids, and is of great importance. It resists boiling and acts at minute distances. Probably the strength of solid bodies is of a similar nature. When a vessel of water suffers from arrested boiling, it becomes uneasy and jerks after a time, because minute bubbles cannot readily form in the centre, and are found only at the surface.

A few miscellaneous experiments formed the conclusion of the lecture. It was shown, for example, that if a piece of iron gauze, or glass, be immersed in mercury and pressed firmly against the bottom of the vessel, it will remain in that position, in opposition to the principle of Archimedes that a body displaces its own weight of a liquid. Why does it not come up to the surface? The answer is that at certain points, where the body is in closest communication with the bottom of the vessel, minute spaces exist; these are vacuous, because mercury refuses to enter these minute cavities, but rather allows a vacuum to remain.

CHEMICAL SOCIETY.

A meeting was held on Thursday, April 20, Professor Thorpe, President, in the chair. There was a fair muster of Fellows to welcome Professor Thorpe to his new office, the late President, Professor Dewar, looking singularly out of place on the front bench after his two years' occupation of the chair. Mr. Wyndham R. Dunstan was in his accustomed seat as Senior Secretary, but Dr. Wynne's place, on the President's left, was filled by Dr. Scott, the new Secretary.

The formal business was first gone through, including the reading of the minutes of the general meeting and the introduction of new Fellows.

The President then announced that only two or three of the twelve papers on the agenda would be read, owing to the absence of the majority of the authors. This announcement was most cordially received by the audience. The first paper was by W. J. Sell, M.A., and H. Jackson, B.A., B.Sc., on

Some Dipyridyl Derivatives from Citrazinic Acid,

This paper, which was read by Mr. Sell, occupied about three-quarters of an hour, and was illustrated experimentally by Mr. Jackson. The acid is prepared by the action of 70 per cent. sulphuric acid on citramide. The authors discussed the formula of this compound, and inclined to the view that Hofmann's is incorrect, since it requires the compound to be a tri-basic acid, whereas it acts as a di-basic acid. On chlorination the tri-chlor derivative is obtained, nitrous acid gives nitro-citrazinic acid, while the iso-nitroso-citrazinic acid is produced by the action of nitric acid on citrazinic acid. The iso-compound being less reactive than the normal has not been examined by the authors at present. The attempt to introduce sulphonic groups into the molecule was unsuccessful—The paper drew forth a few remarks from Professor Armstrong. While congratulating the authors on their work he could only say that he was profoundly dissatisfied with most of the formulæ put forward.

The next paper dealt with the

Action of Hydrogen Peroxide on Carbohydrates in the Presence of Iron.

by R. S. Morell, M.A., Ph.D., and J. M. Crofts, B.A., B.Sc.

Dr. Morell explained that the work was a continuation of Fenton's investigations. Among the compounds examined were lævulose, galactose, arabinose, and rhamnose. In a general way 2 grammes of the carbohydrate were dissolved in 25 cubic centimetres of water containing a small quantity of ferrous sulphate. Hydrogen peroxide was then added in the proportion of two-fifths of an atom of oxygen per gramme-molecule of carbohydrate. The experiments were most satisfactory, and amply corroborated the previous investigations of Fenton.

In the ensuing discussion, Mr. Fenton drew attention to the fact that now all the types of hydroxy compounds of the fatty series have been examined, and work is now being done on the hydroxy compounds of the aromatic series.

The last paper treated of the

Condensation of Oxalic Acid and Resorcinol,

by James Theodore Hewitt and Arthur Ernest Pitt.

The remaining papers were taken as read and included "The Interaction of Mercurous and Mercuric Nitrites with the Nitrites of Silver and Sodium," by F. C. Ray, B.Sc.; "The Synthesis and Preparation of Terebic and Terpenylic Acids," by W. Trevor Lawrence; "The Allotropic Modifications of Phosphorus," by D. L. Chapman; "β-isopropyl Glutaric Acid," by F. H. Howles and J. F. Thorpe; "Ethyl Ammonium Sulphite," by Edward Divers and Masataka Ogawa; "Ethyl Ammonium Selenite and the Non-Existence of Amido-Selenites (Selenosamates)," by Edward Divers and Seihachi Hada; "Isomerism and Optical Activity; the Comparative Rotatory Powers of Methylic and Ethylic Ditoluyl-Glycerates," by Percy Frankland, F.R.S., and Henry Aston; "The Action of Certain Acidic Oxides upon Salts of Hydroxy Acids,"—Part iv., by G. G. Henderson, D.Sc., M.A., T. W. Orr, and R. J. G. Whitehead; and "Fencholenic Acid," by G. B. Cockburn, B.A., B.Sc.

PHARMACEUTICAL SOCIETY.

NORTH BRITISH BRANCH.

A meeting of the Executive of the North British Branch of the Pharmaceutical Society of Great Britain was held in the Society's House, 36, York Place, Edinburgh, on Friday, the 21st inst., at half-past eleven o'clock. Mr. J. Laidlaw Ewing, Chairman, presided, and there were also present Messrs. Ayre, Boa, Bowman, Coull, Currie, Fisher, Henry, Johnston, Kerr, McAdam, McLaren, Mitchell, Moir, Russell, Storrar, and Strachan. An apology was intimated from Mr. J. M. Hardie.

The minutes of last meeting were read and approved of, and the report of the General Purposes Committee was also read and approved.

Nomination of Examiner.

The Chairman said they would have noticed that Mr. Maben had intimated his resignation as an Examiner. Mr. Maben had asked him to convey to the members of the Executive his best thanks for the invariable courtesy he had received at their hands, and for their kind support during many years. He had served on the Board of Examiners for fourteen years. He was the oldest member of the Board with the exception of Mr. Nesbit, and during that time he had performed his duties with great ability and attention, and speaking for his colleagues on the Board he said they were very sorry indeed to lose him. It was unlikely that he would return to the Board again, and he thought the Executive should take cognisance of his retiral, and express their regret that he was leaving the Board.

Mr. W. L. Currie (Glasgow), in seconding the Chairman's motion, said they all knew that Mr. Maben had conducted himself with the utmost satisfaction to everyone concerned, and now that he was retiring from the Board of Examiners and entering on a new capacity they hoped he would meet with the success which he deserved.

The Executive went into committee to nominate a successor to Mr. Maben.

On resuming, Mr. Peter Boa, who had left the room, was re-called.

The Chairman then nominated Mr. Peter Boa to fill the vacancy occurring through Mr. Maben's resignation for the present year.

Mr. McAdam, Glasgow, seconded, and this was agreed to.

Mr. Anderson Russell, Glasgow, asked that his dissent be recorded, on the ground that it appeared to him inadvisable that they should nominate one who was a member of the Executive.

The Chairman having intimated to Mr. Boa that he had been nominated,

Mr. Boa thanked the Executive, and said he took it that in his former service on the Board he had fulfilled their expectations.

Date of Election of Executive.

It was then agreed:—

That the next election of Executive take place on Friday, June 16, 1899, and that the Chairman and Vice-Chairman act as scrutineers of the voting papers, with power to add to their number.

The Report to the Council.

The annual report of the Executive, which had been considered in committee, was approved of and ordered to be transmitted to the Council.

The Lord Chancellor's Pharmacy Bill.

The next business was the motion given notice of at last meeting by Mr. C. F. Henry, which was as follows:—

That in the opinion of this Executive steps should he taken to prevent limited liability companies using and exhibiting the title "chemist" or "druggist" or "chemist and druggist," and that the attention of the Council be called to the increasing use made of such titles by such companies, with the view of taking action in the matter.

Mr. Henry said that with the sanction of the Executive he would withdraw that motion, and propose another:—

That this Executive cordially approves of the action of the Council in taking steps to oppose the Lord Chancellor's Pharmacy Bill, 1899, and resolves to use every endeavour to assist the Council in their action.

He said he did not regret having proposed the motion some months ago. Since doing so the subject had received far more attention than for many years previously. The Federation, no doubt owing to the energy of its Chairman, had taken up the question. It had been referred to by one or two members of the Council, the *Pharmaceutical Journal* had devoted two articles to it and, last of all, the Council woke up to its importance at its last meeting. It had always appeared to him to be a very important subject, demanding much more attention than it had received. By the Act of 1868 a body of men were to be trained and educated for a public purpose. The safety of the public was the reason for the passing of that Act. And there were no means by which the public could know who these men were unless certain titles were given to them—those of "chemist" or "druggist" or "chemist and druggist." Of course it had been argued that the decision in the case of the London and Provincial Supply Association governed the use by these companies of such a title. He had been inclined to doubt that, and the very fact that the Lord Chancellor had introduced a Bill to allow limited liability companies to use the title seemed to him to point to a doubt in his Lordship's mind whether or not such a use of the title was legal. He thought they should thank the Lord Chancellor for bringing in that Bill, and making it evident that companies used these titles, and that he desired to put these companies on a legal basis.

Mr. Storrar: Can you give any instance of a company having used the titles?

Mr. Henry said it was pretty well known. He could give two or three dozen if they gave him a little time. They were in almost every town in Great Britain. They had the Scottish Drug Depôt and Inman and Co. in Edinburgh, and in Glasgow there was a company not only using the title "chemist and druggist," but "pharmaceutical chemist and druggist," and the directors of that company were not qualified. The matter was a very serious one for chemists; they did not urge it so much on behalf of chemists, but for the safety of the public. The public did not know who were practical, competent men, unless from the title used by these men, and if Tom, Dick, and Harry were allowed to use the title, the safety of the public was not guaranteed. He thought that was one way in which they should look at the matter—not only on their own account but for the safety of the public, which was what the Pharmacy Act of 1868 was framed to guarantee. He did not know that he need say much more, for he felt that the matter appealed to the minds of the Executive as one of very great importance. He was very glad the Council was taking steps, at last, to see that the title was only used by those who were entitled to use it. The Council was not

opposing the Lord Chancellor's Bill on account of the attempt in that Bill to regulate the companies—they would be glad to see that done—but solely on account of the attempt to legalise the companies in the use of these titles.

Mr. W. L. Currie seconded the motion. He said he thought they could not speak too strongly on this particular point. This was a subject which should receive the careful attention of every pharmacist. The Bill introduced by the Lord Chancellor tended to do away with the qualification of individuals which the Acts of 1852 and 1868 were intended to establish: pharmacists all over the country should be up in arms at such a piece of legislation. It was evident that the Bill had not received very careful consideration by the Lord Chancellor, or he would not have attempted to foist such a Bill on the British public. But it was a very serious thing for men possessing the knowledge required for qualification to attempt to do away with legislation which had been in force for the last forty years, and to legalise other men by giving them a title and qualification which they could not possibly obtain. His reading of the Lord Chancellor's Bill was that limited companies, by engaging the services of a pharmaceutical chemist, would be entitled to assume the title of pharmaceutical chemist, or by obtaining the services of a qualified druggist, they could use the title of chemist and druggist. He did not think that was as it should be, and he was perfectly satisfied that if the case was represented in the proper quarter, the Bill would not be allowed to proceed. He had very great pleasure in supporting the motion. He hoped the matter would not stop there, but that individual members outside the Executive should approach members of Parliament to do what they could to oppose the Bill; not only so, but if by any possibility it passed the House of Lords, they should go on and fight it to the end. He would go further than Mr. Henry, and if they could not get themselves included in the Medical Bill at present before Parliament, they should use every possible endeavour to obstruct and block that Bill in its passage through the House.

Mr. Kerr, Dundee, said he supported both Mr. Henry and Mr. Currie in what they had said. He thought an effort should be made to block the Medical Bill unless they obtained recognition of pharmacists. The Forfarshire Association had drafted a letter to Lord Camperdown, in which the matter was put very plainly before him, and his Lordship was asked to look into the matter and see that the Lord Chancellor's Bill was not rushed through.

Mr. Fisher, Dunfermline, thought the Executive was greatly indebted to Mr. Henry for his motion, and he heartily agreed with all that he and Mr. Currie had said. The only criticism he had to offer was that if seven men formed themselves into a company and employed a qualified chemist, and called themselves chemists, why should not one grocer employing a chemist hang up the sign "pharmaceutical chemist" above his door?

Mr. D. Storrar, Kirkcaldy, said he was sure they all approved of Mr. Henry's action, and were pleased that he had seen his way to withdraw the motion he had originally given notice of, and to substitute the one he had proposed. He thought the North British Executive was perhaps the proper place to bring up a motion such as this. The Executive was in a unique position. It was not a local association however important a local association might be. It occupied a higher position seeing it had in a way a special standing, and yet it had no inconvenient responsibility of any kind. The Executive might be looked upon as a sort of Pharmaceutical Upper Chamber in which questions might be discussed in a purely academical spirit, and without having afterwards to act upon the opinions expressed. He knew, and Mr. Johnston knew, that the Council of the Society recognised that position of the Executive. The Council wanted to encourage as much as possible discussion of these subjects, for that could be done with a freer hand than in the Council, and the Council would appreciate very highly this—he hoped—unanimous resolution on the part of the Executive in its support. As Mr. Carteighe had pointed out, this Bill of the Lord Chancellor must be killed, and they must do their best to kill it. The Act of 1868 said that it was expedient for the safety of the public to do certain things, and the first of these was that a man who sold certain poisons should be a qualified man—a registered man—and that registration should be secured by passing certain examinations. That principle had been practically broken through; that was to say, the law had discovered a road by which unqualified persons could trade without having passed this examination, so that it put limited liability companies on a par with the Pharmaceutical Society so far as to legalise them. He thought they could have got and were beginning to get over that difficulty; but the Lord Chancellor, by his Bill, touched what was really the crux of the Pharmacy Act. That was a question of title. Mr. Henry said the Council had at last awoke to the importance of doing their duty in regard to securing this title. He (Mr. Storrar) had been eight years on the Council now, and the first year he was on the Council this question was brought up and discussed. The Council had tried to do its best and found that it could not defend the title, much as they would like to do so. Lawyers told them that limited companies and co-operative societies were entirely outside this Act in regard to qualification, and that if they tried to put down the use of the title by companies they would be open to the same argument that was used in the case of qualification. If limited liability companies were outside the Act so far as qualification was concerned, they were also outside the Act so far as title was concerned. It was possible that the Society might go into Court and spend thousands of pounds in regard to title, and find itself on the wrong side. That was really the position. The Lord Chancellor stepped in and made the case perfectly clear. He not only said, "You can get in by a side door," but he opened the front door to them. It was his (Mr. Storrar's) opinion, the opinion of every chemist and druggist in the country, the opinion of the Executive and of the Council that this was a shameful breach of faith to the chemist and druggist. Parliament had required them to qualify to do certain public duties, duties with regard to the safety of the public, and after thirty years' continuous and successful work in that direction the Lord Chancellor came forward now and proposed to put the Limited Liability Act on the same level as the Pharmacy Act. He thought that was a shameful and unauthorised assault upon their craft, that should be, and he hoped would be, fought to the bitter end.

Mr. Johnston, Aberdeen, hoped the Council would do its best to oppose this Bill to the bitter end. It was a Bill that would spoil the business of chemists and druggists and pharmaceutical chemists in this country more than anything else. It was a very great hardship that men should have to qualify for the purpose of being chemists and druggists and supplying medicines for the safety of the public, and to have seven men forming a company and getting a chemist for the purpose of being able to put up the sign above their door "chemist and druggist," "medicines dispensed here only of genuine quality." They were there for the protection of the public; but he must say this, that these companies, if they were looked into a little more, would be found to be dispensing and selling poisons by unqualified men. The difficulty was to detect those persons in dispensing medicines and selling poisons. He considered that if the safety of the public was to be looked to, those companies ought to be put down and every effort should be used by the chemists and druggists of this country to put a stop to such men being allowed to carry on the business even with a registered person in their employment. He quite agreed with the proposal that every effort should be made for the purpose of opposing this Bill, and if they all put their shoulder to the wheel it would be successfully done. He thought also that chemists and druggists should be put into the same position as physicians and midwives, and rather than that they should not be classed with those professions they should oppose the Medical Bill. They might depend upon it that the members of the Council were doing everything they could to oppose the Lord Chancellor's Bill when it got to the House of Commons. The President had done a great deal for the purpose of upholding the status of chemists and druggists; he was still ready to do so, and he had no doubt he would do it, and the members of the Council were all as far as he understood unanimous in opposing the Bill.

Mr. Anderson Russell, Glasgow, said he had not proposed taking any part in the discussion, but a remark by Mr. Storrar had brought him to his feet. Mr. Storrar referred to the position of the Executive, and he therefore thought it would be scarcely fair merely to give a silent assent to the resolution before them. In Glasgow he had spoken to a considerable number of chemists, and he found the opinion to be unanimous that there was nothing good in this Bill, and that they should do all in their power to prevent it passing into law. He was glad that Mr. Storrar had referred to the Council's want of action (*sic*) with regard to the subject matter of the original motion. He thought the Council's position in regard to that subject during all these years had partaken of an element of shrewdness which did not appear on the surface.

The meeting then terminated.

DONATIONS TO THE LIBRARY AND MUSEUM.

At a meeting of the Library, Museum, School and House Committee, on Wednesday, April 19, the Librarian and Curator presented the following reports of donations :—

To the Library (London).

War Office :—Army Medical Department Report for 1897.

F. Manson Bailey, Esq., Brisbane :—Three pamphlets.

College of Preceptors, London :—Calendar, 1899.

Dr. J. Attfield, Watford :—Chemistry, sixteenth edltion, 1899.

Editor of the *Chemist and Druggist* :—Dodds' Guide to Preliminary Examinations, second edition, 1899 ; Practical Methods of Urine Analysis, 1899.

Royal Dublin Society :—Scientific Proceedings, vol. 8, pt. 6 ; Scientific Transactions, vol. 6, pts. 14-16 ; vol. 7, pt. 1.

Dr. E. R. Squibb, Brooklyn :—Ephemeris, vol. 5, No. 2.

To the Library (Edinburgh).

Editor of the *Chemist and Druggist* :—Dodds' Guide to Preliminary Examinations, second edition, 1899 ; Practical Methods of Urine Analysis, 1899.

Dr. E. R. Squibb, Brooklyn :—Ephemeris, vol. 5, No. 2.

J. Barker Smith, Esq., London :—Urine Analysis ; two pamphlets.

To the Museum (London).

Commendatore Thos. Hanbury, Ventimiglia :—Fresh specimens of the following plants : *Aloe ciliaris, Aloe plicatilis, Aloe succotrina f. purpurascens, Acacia sophora, Acacia melanoxylon, Buddleia madagascariensis, Casimiroa edulis, Cassia tomentosa, Catha edulis, Cistus ladaniferus, Cluytia hirsuta, Ephedra altissima, Euphorbia characias, E. caput-medusæ, E. dendroides, Grevillea vestita, Juniperus drupacea, Kennedya nigricans, Lavandula dentata, Melianthus major, Oreopanax dactylifolium, Photinia serrulata, Raphiolepis indica,* and *Teucrium fruticans.*

The Curator :—Fresh specimens of *Xanthorrhiza apiifolia, Daphne mezereum* and *D. laureola, Scopola carniolica,* and *Anemone pulsatilla.*

Mr. Finnemore, London :—Fresh specimen of *Rosmarinus officinalis.*

Mr. and Mrs. Lort Phillips, London :—Specimens of the leafy twigs, bark, and gum resin of the myrrh tree collected in Somaliland from the self-same tree.

Mr. F. M. Fox, London :—Specimens of the fruit of the myrrh tree.

Dr. M. Greshoff, Haarlem :—Specimen of the bark of *Picrasma javanica* var. *sumatrana,* offered in commerce in 1898 as "Cinchona bark from Padang."

Messrs. Hodgkinson, Clarke, and Ward :—Three varieties of commercial gentian root.

Mr. J. Dunning, Ventnor :—Specimens of the fruit of the areca nut tree.

Mr. Frank Browne, Hong Kong :—Two Chinese hypodermic syringes.

Messrs. Christy and Co. :—Specimens of *Blepharis capensis* and *Cluytia hirsuta*

Dr. H. O. Forbes, Liverpool :—Specimens of the Socotrine aloe juice and of the Socotrine aloes in earthen vessels, and of Socotra dragon's-blood, and of the resin of *Wellstedia,* collected in Socotra.

Mr. W. Martindale, London: —Specimen of the fruit of the Annatto plant ; of the pods of the Tamarind ; the rhizome and seeds of the Tous les mois plant, and of Barbados aloes prepared in the island.

To the Herbarium.

Mr. R. Lloyd Praeger, Dublin :—Specimens of the following rare British plants : *Bartsia viscosa, Draba incana, Draba muralis, Erica mediterranea, E. mackaii, Eriocaulon septangulare, Festuca uniglumis, Habenaria intacta, Juncus acutus, Lathyrus palustris, Medicago sylvestris, Naias flexilis, Potentilla fruticosa, Spiranthes romanzoffiana, Statice occidentalis, Utricutaria intermedia,* and *Artemisia stelleriana.*

COUNCIL PRIZES EXAMINATION QUESTIONS.

BOTANY.

Friday, April 21, 1899.—Time : 10 a.m. till 11.30 a.m.

1. Explain as fully as you can what is meant by Respiration in Plants. State as far as possible the nature of the experimental evidence on which our knowledge of respiration rests.

2. What are the characters of the Natural Orders Umbelliferæ and Solanaceæ respectively ? Enumerate the chief officinal plants belonging to these two Orders.

4. What is Iceland Moss ? Give a general account of the group of plants to which it belongs.

4. What is meant by Cleistogamy ? Enumerate as many British Plants as you can in which it has been observed, and indicate the nature of its utility to the species.

MATERIA MEDICA.

Time : 11.30 a.m. till 1 p.m.

1. Give the botanical source, mode of preparation, and general characters of the following substances :—Aloin, Elaterin, Salicin, and Strophanthin.

2. By what characters would you recognise a sample of powdered Ipecacuanha root ? How would you distinguish (*a*) the stem of Ipecacuanha from the root, and (*b*) Rio root from Carthagena root ? Name the two chief alkaloids of Ipecacuanha, and state how they differ in properties.

3. Give the botanical and geographical sources of the principal varieties of Coca leaves found in commerce. What is the proportion of Cocaine in the best leaves ? Mention any other alkaloidal constituents of Coca known to you. How is Benzoyl-Ecgonine synthetised into Cocaine ?

4 How would you detect :—

(*a*) Stearic Acid in Spermaceti ;
(*b*) Peach Kernel Oil in Almond Oil ;
(*c*) Sulphur compounds in Liquid Paraffin ;
(*d*) Starch Glucose in Honey ?

N.B.—Questions are to be answered as briefly as possible.

CHEMISTRY.

Time : 2 p.m. till 5 p.m.

1. Describe accurately how pure vitreous phosphorus may be obtained. What changes may be observed on heating this substance (*a*) in air, (*b*) in vacuo ? What are the products of the changes, if such take place ?

2. Compare the points of similarity and difference (chemical and physical) between chlorine and iodine, and their compounds with hydrogen, oxygen, and metals.

3. What is the usual source of potassium dichromate, and how is it obtained from this source ? What is the action of (*a*) hydrochloric acid, (*b*) sulphuric acid, upon it.

4. How is ethyl ether usually prepared in a pure and dry condition ? Describe its properties. Give two general reactions by which an ether may be obtained from the corresponding alcohol.

EXAMINATIONS IN LONDON.

April, 1899.

MINOR EXAMINATION.

Candidates	examined	367
,,	failed	267
,,	passed	100

Acton, Victor Guernsey
Akhurst, Arthur Alfred John
Andrews, Ralph Cecil
Aram, Charles Baxter
Bailey, John Harling
Barnes, George Harry
Bavnes, Herbert Varley
Belsher, Henry Ernest
Benson, John
Bentley, Lumley Scurr
Birtwisle, Albert
Bisset, William
Blockley, Frederick George
Boothroyd, Frederick
Boxall, Thomas William
Bristow, Herbert
Britton, Alfred Brook
Brooke, Frank
Burnell-Jones, Harold Stanley
Chambers, Fred Aldis
Coles, Charles Avery
Collins, Joseph
Coombe, Frank Ernest
Crisswell, Frederick Charles
Cushing, Thomas Edward
Davies, Charles Sidney
Davies, Llewellyn Rhys
Dawson, Robert Hilliard
Dunford, Walter Henry
Evans, William Llewelyn
Excll, Edmund Charles
Flick, William Stanley
Flitcroft, Thomas Edward
Gardner, Hermann Charles Thomas
Goodenough, Joshua Mann
Guy, William Thomas
Haigh, William
Hall, Alfred William
Hall, William Edward
Heely, Walter Frederick
Hogwood, Haley Percival
Horton, Albert John
Hoskins, Joseph Stanley
Hough, Ralph
Houghton, George Smith
Houghton, Herbert
Hoyle. Herbert John
Huddart, Joseph William
Hughes, Henry
Johnson, Frank Horace
Jones, William Britain
Knowles, Frederick Edwin
Lenton, John Herbert
Lloyd, Percy Ernest
McRae, Robert
Maddox, David Crisp
Mann, Ernest William
Marshall, John William
Matcham, Alfred Robert
Morgan, Edwin Abraham
Moses, Henry Chadwick
Murray, William Low Burgess
Noble, Charles Alfred
Osborne, William Harrison
Owen, William
Parker, John Thomas
Paynter, Alfred John
Pettinger, William Elmer
Preston, Ben Mountain
Prichard, Richard John
Prosser, Thomas William
Richards, Thomas Teverson
Roberts, Henry Trewren Thomas
Robinson, John Eathorne
Rowse, William James
Shelley, George
Shelton, William
Sill, John Westgarth
Simpson. Willie Weightman
Slight, Franklin
Smart, William David
Smith, Arthur Richard
Snowden, Arthur Sidney
Spencer, Rosa Kathleen
Stinson, Harold
Stokes, Charles Albert
Swann, William B.
Taylor, Samuel
Thomas, Frank
Thomas, Herbert Charles
Warren, Richard Bleathman
Watt, William
Westlake, Walter Vincent
Wheeler, John Phillips
White, Percy Frederic
White, Walter
Williams, Thomas
Withers, Edgar
Wood, Edward Vivian
Young, Francis Joseph

FIRST EXAMINATION.

Certificates by approved examining bodies were received from the undermentioned in lieu of the Society's examination.

Abraham, Percy George A. ; Bath
Andrews, Ernest Percy ; Hanley Castle
Archer, John ; Guiseley
Baker, John Austin ; Ventnor
Beaumont, Percy ; Wakefield
Birkbeck, Alexander Stanton ; Lincoln
Bourne, Charles W. K. ; W. Bromwich
Burke, John M ; Tipperary
Chamley, Charles ; Wilmslow
Coates, Walter ; Wisbech
Daunt, Mary ; Nottingham
Deane, Harold ; Clapham
Fox, Thomas S. ; Malvern
Galbraith, Walter Sloan ; Glasgow
Gray, Archibald John ; Loughton
Griffiths, Evan Henry ; Portmadoc
Gwatkin, Hugh R. ; Brighton
Harvey, Harry H. ; Retford
Hill, Stanley Wilfred ; Stroud
Hirst, Thornton ; Crediton
Hodgson, Harold Frederick ; Streatham
Matthews, Vernon Lickfold ; Ross
Michelson, Eleazer ; Stockton
Osborne, Francis Charles ; Kennington
Peverell, Arthur ; Bishop Auckland
Potter, Thomas ; Scarborough
Saul, William J. S. ; Spalding
Saville, Henry Ward ; Wakefield
Self, Percy Arthur William ; Yeovil
Silvester, Joseph Bertram ; Lincoln
Sparrow, Arthur Barrington ; Finchley
Stephenson, Joseph E ; Kennington
Stooke, Frederick A. ; New Brompton
Sturton, David Allan ; Cambridge
Tunnicliff, George William ; Tamworth
Yates, William R. ; Boscombe

PHARMACEUTICAL JOURNAL.

A Weekly Record of Pharmacy and Allied Sciences

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LONDON: SATURDAY, APRIL 29, 1899.

MEDICAL MEN AND PHARMACISTS.

The conductors of the official organ of the British Medical Association are to be congratulated upon having at last discovered that the Lord Chancellor's Pharmacy Bill is not altogether so unobjectionable a measure as might have been imagined by readers of the comments on that Bill which appeared in the *British Medical Journal* of April 8 last. For, in a leading article on the subject, published in last week's issue of our contemporary, attention is specially directed to the startling fact that the Bill proposes to enable companies to trade under titles which can only be assumed by individuals when duly qualified. This, it is stated, appears to be wrong in principle, for it concedes that under certain conditions—conditions perhaps difficult to enforce in practice—a company may make use of titles which, if they mean anything at all, imply that the user of such titles has received a certain education and has passed certain examinations, which a company obviously cannot have done. "It would seem fitting that the prohibition of the use of titles by anyone other than a qualified person, whether corporate or not, should not be conditional in any way, but should be absolute. Any meddling with the proper use of titles implying qualification is a dangerous precedent." As an expression of opinion this is very satisfactory, but it does not go far enough. The position of pharmaceutical chemists, and also of chemists and druggists, is that the use of their titles and qualifications by combinations of trading capitalists ought to be impossible, and they hold that, on those points, the case of pharmacy is quite as strong as that of medical practitioners or of dentists. The practice of pharmacy proper, as apart from the merely trading side of the business of registered chemists, is as purely professional as the practice of medicine or dentistry. All three professions suffer alike in being governed by laws acknowledged to be insufficient for preventing unqualified practice and obtaining conviction of offenders. Medical practitioners and dentists, therefore, require the sympathy and support of pharmacists, as much as pharmacists require the sympathy of the sister professions. But, whereas pharmacists are prepared to join in supporting to the utmost claims for corresponding amendment of the law, and have already proved their willingness to do so, we were confronted with a picture of medicine and dentistry rejoicing that their path had seemingly been smoothed by a dissolution of the triple partnership. The imputations of unfairness published in these pages a fortnight ago may seem out of place to persons not properly conversant with the facts; but when it is considered that it is the pharmaceutical case which has provided the basis of action for the medical and dental authorities, that virtually all the evidence adduced in support of the claims for amendment of Company law has been furnished by the Pharmaceutical Societies, and that the Societies have also rendered important assistance in various other ways, the charge we have formulated against "a certain important section" of the medical and dental professions appears to be thoroughly justified.

The fact of the matter is that, in the main, the relations subsisting now between the general medical practitioner and the registered chemist are little, if any, more cordial than the relations between medical apothecaries and chemists in the early part of the eighteenth century. Physicians and surgeons were then, as now, persons confining themselves to the exercise of functions for which they were duly qualified, but the apothecaries were attempting to restrict to themselves the practice of pharmacy on the one hand, whilst encroaching upon the province of those who practised medicine on the other. In the end the apothecaries secured recognition as medical practitioners without altogether relinquishing the supply of medicines, and probably the uncomfortable feeling induced by that inconsistent position has fostered the general medical practitioner's otherwise unreasonable jealousy of chemists and druggists during the past century and a half. Long years ago all the outstanding difficulties between medical men and pharmacists might have been amicably and equitably settled but for the unreasoning jealousy which has made a large section of general medical practitioners the veriest dogs-in-the-manger that ever existed. Joint action, at any time since the formation of the Pharmaceutical Society, might have had the effect of solving many problems now vexing the minds of medical practitioners and pharmacists alike; but the efforts of the more reputable portion of the medical profession in that direction have continually been frustrated by the metamorphosed apothecaries. The most notable recent instance of the kind is that of the joint committee referred to a fortnight ago, and there can be no better evidence of the difficulty of attempting to deal fairly with problems involving both medical men and pharmacists than was afforded by the satisfaction expressed by the *British Medical Journal* at the assumed better prospect of securing amendment of the law with regard to companies, since the practice of pharmacy had been left out of the question. It is not, of course, the business of the General Medical Council to procure amendments to the Pharmacy Acts; but neither is it the business of the Pharmaceutical Society to accumulate evidence and arrange cases for Parliament, for the benefit of medical practitioners and dentists, though the close similarity of the conditions affecting both is a reason for joint action. Having accepted all the assistance offered by the Society and having agreed, for a time at least, on a joint plan of action, it would seem as if it should have been felt morally incumbent upon the representatives of the other two professions to protest to the end on behalf of pharmacy.

By implication, the thanks of pharmacists are claimed for a Committee of the General Medical Council—consisting of Sir William Turner (President), Mr. Victor Horsley, and Mr. Tomes—because "the very first fruit" of the action of that Committee was that the Lord Chancellor took up the question of the pharmacists' grievance, "in a very practical way," by proposing the now historic amendment to the Pharmacy Bill of last session, and that amendment, we are told, was "a concession of a general principle." But our contempor-

ary does not explain what that principle was. So far as we can judge, the principle of the amendment was to provide a short cut to registration under the Pharmacy Acts through the medium of the Companies Acts. But that is hardly sufficient justification for claiming the gratitude of pharmacists and, considering their present frame of mind, the less that is said about it the better. With regard to the *British Medical Journal's* denial that the two members of the General Medical Council's Committee—associated for a time with the Pharmaceutical Society in the consideration of the company difficulty—had anything to do with the Lord Chancellor's Medical Bill, we can only state that the minutes of the General Medical Council record that the Committee arranged for clauses—dealing with the practice of medicine, surgery, and dentistry by companies—to be drafted and sent to the Lord Chancellor. It is doubtless quite true that the members of the Committee never saw the Bill until it was in print; but they cannot repudiate responsibility for having inspired its provisions, and the *British Medical Journal* itself states that "the present Bill is the direct outcome of the efforts of that Committee." It is urged that the Committee, in presenting its case to the Lord Chancellor, did make allusion to the Pharmaceutical Society. But if, as is suggested, the two Bills embody, so far as medicine, dentistry, and pharmacy are concerned, the results of "the consideration by minds of the highest legal acumen," of matters represented to them by the General Medical Council's Committee, all we can say is that those matters must have been represented very imperfectly and, so far as pharmacy is concerned, in a decidedly half-hearted fashion. Apart from that, however, the question now is whether the medical and dental professions consider pharmaceutical support worth having or not? If it is, no objection should be taken by medical practitioners and dentists to the inclusion of registered chemists in the Companies (Medical Profession) Bill; if it is not, pharmacists must, in that case, fight for their own hand, and those who ought to have been associated with them in opposing the extension of company trading to professional occupations will have no cause for complaint if, now or at any future time, their schemes for self-aggrandisement are interfered with.

THE PROFESSIONAL AND TRADE ELEMENTS IN PHARMACY.

The opinions expressed at meetings of local associations and by correspondents in regard to the subject of amended pharmaceutical legislation are so far in accordance with the view held by the President and Council of the Society and formulated in the "suggestions" sent to the Lord Chancellor, as to justify the anticipation that the Council will be generally supported in offering determined opposition to the Pharmacy Bill now before the House of Lords. On all sides the necessity of that opposition being undertaken by the Pharmaceutical Society is recognised, but the reports of meetings where this subject has been discussed do not, in any instance, show that attention has been directed to the important circumstance that the Society comprises no more than one-third of the registered persons whose interests are affected by the provisions of the Bill introduced by the Lord Chancellor for the enfranchisement of limited liability companies, and for bestowing upon them the unlimited use of the titles and other privileges hitherto obtainable only by individuals who lawfully conform to the statutory requirements by which the exercise of their business is now regulated. Within the range of membership of the Society there is little reason for anticipating anything but the most hearty concurrence with the view that was put forward by the President at the last Council meeting, and supported by everyone of his colleagues. To that extent the action of the Council in opposing the Lord Chancellor's Bill may be expected to have active support. But in view of that undertaking, attention requires to be directed to the relatively small extent of the Society, and to the fact that on many previous occasions its official representatives have been met by the disparaging remark, "You represent but a small minority." Therefore, the question naturally presents itself. What position will be taken by the remaining two-thirds of the trade in connection with the endeavour to maintain the professional status of the chemist and druggist and to extend the scope of pharmaceutical qualification in the manner indicated by the Council's suggestions? Consideration of that question appears also to be necessary on account of various expressions of opinion relating to the trade aspect of the business carried on by the chemist and druggist, and the influence that it should exercise on his recognition from a professional point of view.

Though the art of pharmacy—the art of the apothecary—consisting in the compounding and dispensing of medicine, is strictly a professional occupation, requiring as in the case of the practice of medicine, corresponding qualification, the circumstance that the pharmacist carries on his practice in a shop and there sells the medicines he compounds and dispenses, furnishes some apparent ground for a distinction between him and the medical practitioner. That distinction has become more marked in this country than elsewhere, since the metamorphosis of the old apothecary into a practitioner of medicine threw the practice of pharmacy into the hands of persons without a recognised qualification, and is a consequence of the frequent association with the chemist's business, of various forms of trade. Even when the necessity of establishing pharmaceutical qualification in the apothecary's successor was eventually recognised and, to some extent, carried out by statute, it was so partial and consequently so imperfect that, in many instances, the business carried on under the statutory title and qualification of chemist and druggist has had little relation to the practice of pharmacy, but has been for the most part trade pure and simple.

That trading tendency of the chemist and druggist's business has been cultivated by parasitic journalism, which has grown fat and saucy by its promotion, and has thus helped to bring down the art and practice of pharmacy—in public appreciation—to a level with the transactions of the grocer or sundryman, while appropriating the title of pharmacist as a label for all persons who succeed in obtaining the legal qualification, regardless whether they appreciate the meaning of pharmacy, or have any intention of carrying on a business entitled to that designation. In that way the titles representing pharmaceutical qualification have been rendered so apparently insignificant that the Lord Chancellor proposes to hand them over with articles of trade to any unqualified person who, with six others, forms a bogus company and engages a qualified assistant, with the express object of evading the law passed for the safety of the public. In justification of the suggested acquiescence in

that confiscation of the acquired rights of persons qualified under the Pharmacy Act, it is alleged that the business of the chemist and druggist is more than nine-tenths trade, and that, because companies have carried on the business, the conditions now existing are different from those of 1868. But any argument to be drawn from those differences tells more in the opposite direction, for in 1868 there were no qualified persons, though there are now more than ten thousand who, having satisfied the statutory requirements, are exclusively entitled to the corresponding privileges which have meanwhile been usurped by companies. What distinction is to be drawn between some legally qualified persons and others, in regard to the practice of pharmacy and professional status, remains to be seen; but it may be found that amended legislation will require the qualification of the professional pharmacist to be separated from that which would be sufficient for the ordinary trade of a chemist and druggist, or for the sale of pennyworths of poison and the simple drugs which are equally the trade material of the grocer and the pharmacist, according to the requirements, the taste and the discretion of customers. From that point of view, therefore, the question as to the position that will be taken by the major portion of the trade is now one of great interest.

THE SALE AND DISPENSING OF POISONS.

A LAUDANUM poisoning case is referred to by a correspondent who thinks it is not consistent that it should be possible to sell as much as twelve fluid ounces of laudanum in a plain bottle, appropriately labelled, whereas if he dispenses a six ounce lotion containing two fluid drachms of laudanum and the rest water, he must use a distinctive bottle. It is not the first time this inconsistency has been pointed out, and it would be useless to attempt to deny that some degree of absurdity is involved when such extreme cases are compared. The chief object of the new poison regulations, however, was to provide for the adoption of precautions against accidental poisoning in cases where resort to precaution was not already indicated by the Pharmacy Act of 1868. The Legislature in its wisdom had decided that it was sufficient, when selling such potent remedies as laudanum, to label them with their names, the word "Poison," and the name and address of the seller. But, profiting by the experience of many years, the members of the Pharmaceutical Society have decided that it is desirable, in addition, to distinguish bottles containing poisonous liniments, embrocations, and lotions from ordinary medicine bottles. This is a step in advance of what the Legislature had stipulated and, though it may seem absurd to surround the sale of an extremely dilute poisonous preparation with greater restrictions than a much stronger one, members of the Pharmaceutical Society should feel that they are able to congratulate themselves on being even more anxious than the Legislature to adopt precautions for the public safety. With regard to the sale of large quantities of scheduled poisons, we can only remark that the quantity of a poison to be sold is a matter entirely within the registered chemist's discretion. When an unusually large quantity is sold the chemist has usually sufficient reason for assuming that no special risk is incurred by the purchaser, and there is no occasion to believe that the trust reposed by the Legislature in the ability of chemists and druggists to exercise a proper discretion is other than thoroughly justified.

ANNOTATIONS.

MEMBERSHIP OF THE PHARMACEUTICAL SOCIETY was originally essential as the indication of qualification to practise pharmacy, but though voluntary at the time referred to, there is much reason for believing in the desirability of a reversion to some such system of marking the difference between those who desire to carry on the compounding and dispensing of medicine, as the main feature of their business, and others in whose business various accessory branches of trade are, according to locality, so much more prominent and important to themselves, that occupation in the professional work of dispensing is of little value to them and would not, in their case, be worth qualifying for. If it were possible to adopt that plan in the manner recently suggested by Mr. Barnard Proctor (see p. 277), and establish two grades of qualification, one for the practice of pharmacy and the other for those portions of the chemist and druggist business which do not call for the same amount of scientific knowledge or training, there is reason for believing that the results would be beneficial in every respect.

IF THE PERSONAL NATURE of the qualification requisite for the practice of pharmacy as a professional occupation is alone considered, the necessary conclusion seems to be that contended for by the President of the Pharmaceutical Society of Ireland, that no incorportion of persons should, as such, be permitted to carry on the business or use the titles indicative of qualification, the simple reason being that such an incorporation is incapable of qualification. The opinion expressed by the President of the English Society is similar in tendency, though less comprehensive in its application, and the two may be regarded as agreeing that the practice of pharmacy should not be undertaken by a company unless each member of the company has the requisite personal qualification entitling him to practise on his own account, ordinary company operations being applicable only to trade, and not to professional occupations. The propositions put forward by Mr. Harrison as reasons that qualification of "all the directors" of a company ought to be accepted as sufficient to entitle the company to practise pharmacy, appear to involve too much assumption that the practice of pharmacy is a large concern, and to confound the case of a company with that of its individual directors competent to act on their own behalf. That duly qualified persons should be debarred from the advantages of application of capital and limited liability to the trade portions of a pharmaceutical business, is a proposition that has not been put forward by any one; but it is only the trade portion of a pharmacist's business that can properly be the subject of company operations or, in fact, require assistance from capitalists or the public on condition of participating in the profits, with limited liability, under the Companies Acts. As to the legality of pharmaceutical companies *bonâ fide* constituted of and managed by qualified directors who are the chief proprietors, or as to the position of unqualified shareholders in such companies, much would appear to depend on the actual *bonâ fides* of the companies whether any special provisions would be requisite for their recognition.

THE JUST CLAIMS OF REGISTERED CHEMISTS are admirably set forth in the all too brief address (see p. 384) delivered by Mr. J. Rymer Young, at Blackburn, on Tuesday, and members of the Pharmaceutical Society will note with satisfaction how Mr. Young referred to "the palpable vein of inconsistency" pervading the fulminations of a trade journal, the interests of which have for so many years been promoted by the persistent endeavours of its conductors to sow dissensions in the ranks of registered chemists. It is curious,

by the way, that Mr. Young should so narrowly have missed identifying the ass of the story he quoted at the beginning of his address, for the clue he sought was virtually within his hand, and he might easily have discovered that the missing animal has been masquerading in the guise of the "respectable trade journal" he referred to. For the resemblance of that would-be oracle to its illustrious prototype—the ass of Balaam—is practically complete though the portrait is to some extent reversed, and the problem that has appeared to Mr. Young to be insoluble need trouble him no longer. It is far from certain, by the way, that he had not solved it in the manner suggested, and possibly he was only restrained by his natural modesty from propounding the solution which has enabled him to detect the voice of the long-eared carrier of burdens in pretended roars like those of Bottom. In any case, the address should prove of service to registered chemists in assisting them to detect the serpent-like guile in lucubrations designed to persuade them—as Mr. Young so happily expresses it—that when they combine for mutual protection and the improvement of their position, they are the veriest fools to depend upon their own judgment rather than upon the pretended wisdom of the masked ass.

JOHANNESBURG PHARMACISTS appear likely at last to have their grievances considered by the Transvaal Government, a deputation from the local Pharmaceutical Society having had a most favourable interview with the State Secretary, and been instructed to petition for the incorporation of the Society and to draft an improved pharmacy law. The existing law (Medical Act) relating to poisons has proved to be most unsatisfactory in its operation. It provides that all vendors of medicines shall label all bottles or packets containing "arsenic, opium, or other strong medicines commonly called poisons," with the name of the contents and the word "poison." All poisons are to be kept under lock and key, and must not be sold in dangerous quantities, without a written permit from the landrost or local magistrate, or the prescription of "an acknowledged doctor." The penalty for breach of the law is a fine not exceeding twenty-five pounds, and in default, imprisonment—with or without hard labour—for a period of "not less" than six months. The unfairness of the law consists in not properly defining what are poisons, and it has always been a cause of worry that any strong medicine might be regarded as poison by the Government officials. The system of granting permits has also worked badly, permits having at times been granted for the sale of the most outrageous things and in absurdly large quantities, whilst it has not been an unknown thing for a qualified chemist to take out licences for unqualified men, for a consideration. Many shops where poisons are now sold under licence are said to owe their existence to covering of this kind. However, progress is now being reported, and it is hoped that the local Pharmaceutical Society will soon be incorporated, and that a satisfactory Pharmacy Act will regulate the practice of pharmacy and sale of poisons in the Transvaal in a proper manner.

IN THE NOTES ON TRADE TOPICS contributed to the *Grocer* by Mr. A. J. Giles, Secretary of the Grocers' Federation, the hope is expressed that the trade will not fail to bring to the notice of the Government the Barnsley ginger case reported in last week's Journal. It will be remembered that this was a case in which the solicitor for the defence made a charge against public analysts that they acted together in defending each other's certificates. That, of course, was denied by the public analysts, and they responded to the charge by making a bold attack on the Somerset House chemists, who, one analyst had the hardihood to say, "had had insufficient experience to form an opinion." Some persons observes Mr. Giles, think that the differences between Somerse House chemists and public analysts arise because the former take care to keep up a wide acquaintance with the articles of commerce, whilst the analysts too often proceed on out-of-date lines, and therefore with unsatisfactory methods. "The present position of the public analyst seems to prove that this must be the case. These public officers are appointed by the local authorities, which are by no means liberal in their pay for scientific work. Consequently the public analyst too often has to work on the samples he gets at entirely unremunerative prices; he has no encouragement whatever to do original work for the purpose of revising his old methods, and not infrequently falls into error." On the other hand, it is pointed out, the Somerset House chemists are a permanent body, entirely independent of any local authority or any local influence. As Inland Revenue chemists they are brought into close touch with the commercial world, and thus become better informed on commercial chemistry than the ordinary public analyst possibly can be. "Small wonder, therefore, that the traders believe they get fairer treatment from the Somerset House chemists than they do from their own public analysts. If these latter would set themselves to get their local authorities to give better pay for better work than is given at present, they would be far better employed than in running about the country abusing Somerset House chemists."

A FLORA OF KENT, by Mr. F. J. Hanbury, F.L.S., and the Rev. E. S. Marshall, M.A., F.L.S., is to be published shortly. It will contain an account of the flowering plants, ferns, etc., growing spontaneously in Kent, with notes on the topography, geology, and meteorology, and a history of the botanical investigation of the county. The work will be an octavo volume of between 500 and 600 pages, with two maps. It was commenced over twenty years ago, when, for the purposes of the flora, the county was divided into ten districts. Each of those districts has been explored botanically both by the authors and by the many kind friends and contributors who have helped to bring this work to its present standard of completeness. In addition to those more recent observations, the book will include all that have been previously published, together with copious records from the public and other herbaria which have been consulted. The larger map, reduced from the ordnance survey, will show the divisions of the several botanical districts; the smaller will be coloured geologically. In the introduction the topography of the county is to be described, separate sections being devoted to its botany, geology, and meteorology. The history of botanical investigation in the county will be traced from the sixteenth century onwards. A table, showing the distribution of each plant as regards its occurrence in Essex, Middlesex, Surrey, and Sussex, with complete lists of contributors and of the books and herbaria quoted, are also given.

THE JAPANESE REGULATIONS dealing with druggists and drugs have recently been amended by a law which provides that all persons who are not less than twenty years old and who have graduated in the pharmacy section of a foreign university or in a foreign pharmaceutical college, or obtained an apothecary's licence in a foreign country, may apply for apothecaries' licences in Japan on production of their diplomas or certificates. The Minister of the Interior is authorised to issue licences in such cases without requiring the applicants to undergo further examination, and the new law will become applicable to British subjects from the date when the revised treaty between this country and Japan comes into operation.

LIVERPOOL CHEMISTS' ASSOCIATION.

The annual dinner of this Association was held at the Exchange Station Hotel, on Thursday evening, the 20th instant. In consequence of this being the fiftieth year of the existence of this organisation more than usual interest was centred in the proceedings, the jubilee dinner attracting a large and representative assemblage of pharmacists and those interested in pharmacy from all parts of the North of England. The President, Mr. Edward Evans, J.P., D.L., being unable to undertake the onerous duties of Chairman because of his advanced age, and the Vice-President, Mr. John Bain, being laid up with a severe attack of influenza, Mr. Edward Evans, jun., was asked to officiate, which he did in a manner calculated to assist in no small degree in making the function the success it ultimately proved to be. Additional importance was imparted to the affair by the presence of the Lord Mayor of Liverpool, Mr. William Oulton, and of the following gentlemen: Professors Carter and Boyce (of University College), Dr. J. B. Nevins and Mr. Edward Davies, F.C.S., F.I.C. (founders of the Association); Dr. Paul, Editor of the *Pharmaceutical Journal*; Dr. Symes and Mr. J. Rymer Young (Warrington), Councillors of the Pharmaceutical Society; Messrs. J. H. Evans, W. P. Evans, E. N. Evans, R. Lord Gifford (Blackburn), Shepheard (Chester), T. H. Hudson, J. W. Walton (Manchester), A. C. Wootton (London), J. Brown (Burnley), Councillors A. H. Samuel (Liverpool) and Shorrocks (Darwen).

The officers of the Association present were: Messrs. Harold Wyatt, jun. (Vice-President), W. Wellings (Treasurer), H. O. Dutton and T. H. Wardleworth, F.L.S. (Secretaries), A. C. Abraham, F.I.C., F.C.S., T. F. Abraham, A. S. Buck, R. C. Cowley, J. Hocken, Prosper H. Marsden, F.C.S., J. Smith, J. J. Smith, R. Stockdale, T. H. Swinton, and Dr. Symes.

After the usual loyal toasts had been disposed of, the Chairman gave that of

The City and Trade of Liverpool,

saying that it was with legitimate pride that the citizens could review the progress made since the inauguration of the Association in June, 1849, when his uncle presided, and his father formed one of the then numerous body of founders, of whom unhappily so few now remained. Their Association, whose object had been from the commencement the better education, the mutual improvement, and the general advancement of the interests of chemists in co-operation with the Pharmaceutical Society had, he ventured to maintain, justified its continued and vigorous existence. It had done its share towards the advancement of their city, and its members might individually derive satisfaction from the thought that in their efforts at self-improvement they had assisted to the best of their power in forwarding the gradual erection of the present colossal fabric of mutually dependent interests constituting the trade of Liverpool. He had considerable pleasure in calling upon the Lord Mayor to respond, because he was actually occupied in business in the city, and therefore was in a much better position to discourse upon the subject than the gentlemen who usually held the exalted post of Chief Magistrate.

The Lord Mayor, who, on rising, was greeted with loud and sustained applause, said that Liverpool at the present time was enjoying a large increase in its trade, so much so that he might say without fear of contradiction that the past year had been the most successful during the decade, and there was every sign of increasing trade in this large centre and emporium of commerce. The city of Liverpool, like Jerusalem of old, was beautifully situated, and Nature had done a great deal for it. He was sorry to say that, regarded from an æsthetic point of view, man had done a great deal to mar the beauties which Nature had lavished on this site by the Mersey. But although mistakes had been made in the past, it should be admitted that man had recently done a great deal to redeem those mistakes. Liverpool was beautiful from the æsthetic and art point of view. Very few cities in England could show a more magnificent group of architecture than that of which St. George's Hall was the centre, and strangers had expressed surprise and delight with it. But Liverpool men had done more than that in the intellectual sphere. It was, in fact, the home of intellectual and philanthropic effort. He thought that the chemists had been a strong element in the city's prosperity and progress. A combination of gentlemen interested in a trade such as that of the chemists' was absolutely essential for the good conduct of the trade in the interests of the public. His Lordship concluded by proposing the toast of "The Liverpool Chemists' Association and its Jubilee," to which Mr. Abraham responded.

Dr. Nevins subsequently proposed the toast of the

Pharmaceutical Society of Great Britain

in a humorous speech, in which he re-traversed the seventy-five years of his connection with medicine and pharmacy, contrasting the conditions under which the old-time pharmacists worked with those existing to-day.

Mr. J. Rymer Young, in reply, said that the policy of the Pharmaceutical Society was that of its members, and that any action taken by the Council was only the reflection of the desires of the majority of the Society's supporters. On behalf of the Council, he unhesitatingly assured his hearers that the conclusions which had been of late arrived at were the expression of the united voice of the Council in its desire to forward the interests of the trade generally. A vigorous policy meant vigorous measures, and he would ask his hearers to decide what they required, and, when they had decided that, to work with a will to obtain their wishes and not to allow their activity to wax and wane with every side wind. The Lord Chancellor's Bill must be fought to the death, as it aimed at the very essence and object of their existence. Whilst he was talking politics he would direct the attention of chemists to the Medical Bill. If the medical men were prepared to recognise the rights of such a class as midwives and did not extend the same recognition to the more highly educated pharmacist it was the bounden duty of the Pharmaceutical Society to block and obstruct the Bill to the utmost. In view of the approaching election of the Society he would ask his hearers not to be led away, by specious promises, into giving their votes for new and untried men; but to weigh impartially the past action of the Council and vote with the object of obtaining the most stable and reliable representatives to take charge of their interests.

The toast of "The Medical Profession" having been given by Dr. Symes and responded to by Professor Carter, the proceedings came to a close about 11 o'clock.

The musical portion of the programme was provided by the Lyric Glee Singers and Messrs. Fairfield, Edwards, Jones, and R. Brown, who gave many varied and artistic items in first-rate style.

The general arrangements reflected great credit on Messrs. Dutton and Wardleworth, everything going smoothly in the rather short time succeeding the dinner.

CHEMISTS' ASSISTANTS' ASSOCIATION.

A meeting of this Association was held at 73, Newman Street, W., on Thursday, April 20, the President, Mr. F. W. Gamble, in the chair. There was a fair attendance and one new member was proposed.

The President then called upon Mr. T. A. Ellwood, D.P.H., to read a paper on

The Hygiene of the London Streets.

Mr. Ellwood, referring to a remark made by the President, said it was quite true that he was not a stranger to the C.A.A., seeing that he was one amongst its oldest supporters, and had passed through every office except that of Treasurer. Coming to his subject he said it was not his purpose to deal with the engineering aspect of the streets, but to take the streets from the larger sanitary standpoint and show their relation to the health of the community. The Carthaginians were the first people to construct roads upon anything like a scientific principle, and taught the Romans to pave their streets in the same manner. Hygienically speaking, the desiderata of a good street paving was (1) that it must be sanitary and as noiseless as possible; (2) it must be free from dust and mud, especially in itself; (3) it must be non-absorbent, and therefore unable to emit any effluvia when hot and dry; (4) it must be easily cleansed and efficiently disinfected; (5) the capability of repair must be such that it will not require sanitary precautions taken, and must be reparable in any weather. Mr. Ellwood then gave an account of a series of observations he had made as to the sanitary conditions of the streets and roadways within a radius of half a mile from Bloomsbury Square, including pavements of wood, asphalte, macadam, and granite setts, with footways of York stone and asphalte. The conclusions he arrived at were that from an hygienic standpoint asphalte paving for roadways stands *par excellence*. It is sanitary to a high degree, and though the noise exceeds that of wood paving, it is far less so than that of either of

the other varieties. It gives off no dust whatsoever, except that occasioned by wear, which is of a disinfecting nature rather than an injurious one. It is quite non-absorbent, and is, therefore, never offensive when the summer weather gives off its heat after a shower. Moreover, it is easily cleansed, disinfected, and repaired. For footways York stone paving is the best, while for tramways granite setts are most suitable. The composition of native asphalte was given as calcium carbonate 90 per cent., and bitumen about 10 per cent. Mr. Ellwood considered that the ordinary method of watering streets merely to lay the dust is altogether wrong, and advocated the free use of water for flushing and washing the streets, as he believed it is false economy to be niggardly over water. He strongly condemned the system of sweeping refuse into a heap and allowing it to remain by the side of the street until a cart comes to take it away. In connection with the daily collection of house refuse he considered that either the vestry or the householder should be compelled to provide a sanitary dustbin, and that it should all be collected before 8.30 a.m. The delivery of goods at any time of the day was to be deprecated, also the exposure to view of goods upon the pavement, especially in the case of greengrocers, fishmongers, and butchers, who were apt to throw rotten fruit, fishwater, and scraps of meat into the roadway. An analysis of sweepings of the streets showed that the material was of a very hygroscopic nature, and just the kind of substance to form a suitable nidus for the growth of almost all kinds of organisms, pathogenic and non-pathogenic. The habit of spitting in the streets next received attention, and Mr. Ellwood related a number of observations he had made in that connection, showing the need for some kind of laws and regulations affecting the habit. The conveniences at public houses, sewer ventilators, and manholes also received attention, and the influence of various kinds of traffic on the sanitary and hygienic condition of the streets, horse traffic being considered to be the chief cause of their unsanitary state. Mr. Ellwood concluded his paper by expressing the opinion that there is a better day looming for the streets, and that, as hygiene is more and more studied, it will not be simply confined to the person and home, but will include such questions as he had dealt with in his paper. There will be better conveyances, cleaner streets, more careful foot passengers, fewer boot-blacks, less street nausea, a dearth of orange peel in the gutter, and above all, a healthier race.

The President, in commenting on the paper, said possibly the majority of those present had previously a very limited idea of the great scope of the paper offered by Mr. Ellwood. It had illustrated the many difficulties that the hygienist has to overcome. The members of that Association, as chemists, frequently became acquainted with cases which arise from the unsanitary condition of the streets, such as cases of sore throat in hot weather. Still, it was really extraordinary that the health of the City is looked after as well as it is. He had seen it stated that if the sea-side so-called health resorts go on as they are at present, and London continues to progress as it is doing in matters affecting the health of the inhabitants, it will soon be advertised as the sanatorium of the kingdom. Mr. Ellwood's optimism as regards a better sanitary condition of the streets was certainly justified, for the increase of motor-car traffic must bring about an improvement in that direction.

Mr. Hymans thought that with regard to spitting in public places, it would be almost as much use to put up warning notices for horses as for human people. The great objection to electric motors, referred to by Mr. Ellwood as the motor of the future, was their weight. He believed that the coming motor will be the air-motor, as now used in America, and which he understood will soon be introduced in London, it being much lighter in weight.

Mr. Currie was of opinion that the subject was a most important one. There was a great want of uniformity on the part of the different authorities in the matter of paving, cleansing, and disinfecting the streets. The question of public urinals, he thought, was also one calling for immediate attention and regulation.

Mr. Latreille wished to know if there was any probability of glass being used for paving. He believed it was being tried in France.

Mr. Ellwood, replying to the last speaker, said that glass paving possessed no advantages over asphalte, and was open to the same objection, *i.e.*, its slipperiness for horses. With regard to the protest against the laying of asphalte in Victoria Street, S.W., he thought that the health of men should be considered before the safety of horses, and that street was certainly very unsanitary.

A vote of thanks having been accorded to Mr. Ellwood, on the motion of Mr. Hymans, the meeting adjourned.

BRITISH PHARMACEUTICAL CONFERENCE.

On Thursday, April 20, the joint Committee representing the Ulster Pharmaceutical Society and the North of Ireland Chemists' and Druggists' Society met in the rooms of the latter, Garfield Chambers, Belfast, to wind up the reception fund of the recent Conference held in that city. Mr. J. C. C. Payne, J.P., presided, and there was a full attendance of the Committee.

Mr. R. W. McKnight, one of the Hon. Secretaries, submitted his report and balance sheet, from which it appeared that, after defraying all expenses, there remained a sum of some £49 in the hands of the Treasurer.

After some discussion, it was ultimately agreed unanimously to return the overplus *pro rata* to the subscribers who had sent in their contributions in full. It was also decided to print a copy of the balance sheet for free distribution amongst those who contributed to the fund.

The Chairman moved a cordial vote of thanks to the several ladies and gentlemen who had assisted in making the Conference such a complete success. He specially referred to the indefatigable exertions of the two Hon. Secretaries, Messrs. McKnight and Rankin, to whom much of the success of the Conference was undoubtedly due, also to the Ladies' Committee, and valuable assistance rendered by their Secretary, Miss Watson. In acknowledging a similar compliment proposed by Mr. Watson, the Chairman said his thanks were due to the several Committees for making his duties so light and agreeable as they had been. He had done his utmost to steer an even keel, and though he was aware that he had different elements to deal with—elements which sometimes would not mix well together, and frequently resulted in explosions—yet on this occasion they had all worked most harmoniously together. It did not seem to matter to what section of the trade they belonged, they worked as a body of men who had the best interests of pharmacy in view, and the Conference in particular. They had worked together with one object, and they were entitled to be proud of the result.

The Treasurer (Mr. Gibson) and the Hon. Secretaries also acknowledged the thanks accorded them, after which the Chairman declared the Committee dissolved.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

A well-attended meeting of this Association was held on Tuesday night at the White Bull Hotel, Blackburn, under the presidency of Mr. T. Critchley, to hear an address by Mr. J. Rymer Young, of Warrington.

The Chairman said that he was extremely pleased to meet that gathering. Their session so far, which had included a dinner and a visit to the sewage farm, had been most successful, and they were there that night to hear what Mr. Young had to say on the crisis at which the profession had arrived.

The Hon. Secretary (Mr. R. Lord Gifford) read a number of letters of apology from absent members. Mr. John Harrison, of Sunderland, wrote as follows :—

> I wish all the members of your craft could be induced to look at the question of company trading from the standpoint you adopt, for then I think we should have no difficulty in satisfying Parliament that our concern is for the public safety rather than for our advantage. We have suffered much because too frequently the former has been ignored and the latter too persistently pushed forward. At present our united energies must be directed to the decisive defeat of the iniquitous measure now before Parliament, and that accomplished, as I trust it speedily will be, we should proceed to prepare, and early next session present to Parliament, a measure which shall make the provisions of the Pharmacy Act agree with the principle itself.

Mr. J. Rymer Young then delivered an address on

The Just Claims of Registered Chemists,

which is printed in full at p. 384.

Mr. Councillor Shorrock (Darwen) proposed a hearty vote of thanks to Mr. Young for his excellent address. They were very grateful to him, and he thought that if only other members of the Council did the same thing in other parts of the country they

would get a unanimity which would bring about tangible and satisfactory results.

Mr. Heaton (Burnley) seconded the proposition. On the matter of titles, he thought their position had never been properly defined what their title was if they had one. He thought they really ought to know if they were entitled to the name of chemist or not. They wanted such men as Mr. Young on the Council, and they must do their utmost in Blackburn and Burnley to return him to the Council again. He also thought the present time was opportune to consider the question of an organising secretary, who would gather into a focus the opinion of various districts and present it to the Council.

Mr. Brown (Burnley), who also supported, referred to the subject of trade journals. If the journal to which Mr. Young had referred would confine itself to trade topics there was room for it, but chemists had no need for two journals with two opposite policies. They had a recognised journal, dating back to the time when pharmaceutical chemists and chemists and druggists were opposed to each other. The opposition journal had ever since gone ding-dong—because it missed the spoils of war—against the policy of the Pharmaceutical Society and the Council. He had looked up the files of that journal for the last twenty years, and had compiled a paper which he would bring forward some day. If any gentleman connected with that journal would show him any article in it, where an attempt was made to build up anything, he would give a guinea to the Benevolent Fund.

Mr. Lord Gifford also supported the resolution. He said the only question at issue was "Has the qualification to continue the anomaly and the mockery it is or shall it become a reality?" This was the essence of the Council's suggestions. Interests opposed to those of qualified chemists were confusing and involved the points at issue, but the Lord Chancellor's Companies (Medical Profession) Bill gave chemists a capital opportunity of claiming inclusion with the professions mentioned in that Bill; in claiming that, chemists would command the unanimous support of the medical profession and the sympathy of the public. There never was a juster cause, and there should be no hesitation or grumbling and wasting of strength. The leaders of pharmacy had seen their opportunity and risen to the occasion, and it lay with pharmacists to support them to the utmost of their power.

The resolution having been carried with acclamation,

Mr. Young briefly replied. He said the question at issue threatened not only their prospects but their existence. He urged them to sink minor differences, not to worry the Council with small points, but to keep their energies for the three or four vital matters which affected them.—Several other members also spoke.

GLASGOW PHARMACEUTICAL ASSOCIATION.

The annual meeting of this Association was held on Thursday, April 20, Mr. W. L. Currie, President, in the chair. The Secretary, Mr. David Watson, submitted the annual report, which stated that the membership is now 201, an increase of four over the previous year, but Mr. J. W. Sutherland, the Treasurer, reported that only seventy-two members had as yet paid their subscriptions, and that, so far, the income had only covered the expenses. On the motion of Mr. Macmillan, seconded by Mr. Moir, the reports were adopted.

The President, in proposing a vote of thanks to the Secretary and Treasurer, said he was very sorry that the enthusiasm which had characterised the beginning of the Association seven years ago appeared to be falling off, and that there appeared to be a want of interest. It seemed to him that the younger members of the profession thought they knew quite enough already and had no desire to learn more. While he, personally, was extremely pleased with the cordial support they had given him, he did not think it was fair of the members generally to appoint a President to preside at their meetings and not give him better support. The Bill increasing the scope of the membership of the Pharmaceutical Society had resulted in an addition to the roll of 1714 members, and he was glad to be able to state that Glasgow had responded nobly to this appeal. Of those he had called upon personally to become associated with the Society, only one had refused. But they now had before them a Bill, introduced into the House of Lords by the Lord Chancellor, which proposed to take away the titles chemists had fought for in 1852 and 1868. Anyone who cared could start a limited company and call himself pharmaceutical chemist or chemist and druggist, according to the qualification of the individual engaged as manager. He did not think chemists throughout the country were so very much asleep as to allow that Bill to become law. All over the country there was opposition to the Bill, and he did not think that Association should be behind in expressing an opinion. He would therefore move—

> That in the opinion of this meeting the Pharmacy Bill introduced into the House of Lords by the Lord Chancellor is entirely subversive of the principles embodied in the Pharmacy Acts, 1852 and 1868, which aim at the professional education and qualification of the individual pharmacist as being the best safeguard for the safety of the public in the dispensing and selling of medicines; that we impress upon the Council of the Pharmaceutical Society the necessity of using every effort in oppo-ing the Bill, and would ask that means be taken to have pharmacists included in the other Bill introduced by the Lord Chancellor in favour of medical men, dentists, and midwives, and that, failing such inclusion, they should use every possible means to block or oppose the Medical Bill; and that we will do all in our power to assist the Council of the Pharmaceutical Society in carrying out the above suggestions, and that the President, Secretary, and Treasurer be appointed to look after the interests of pharmacy in connection with the Lord Chancellor's Pharmacy Bill.

Mr. Moir seconded the proposition, and it was carried unanimously.

Election of Officers.

The election of office-bearers was then proceeded with. Mr. Daniel Fraser was elected Hon. President, and Messrs. John Macmillan and A. Laing, Hon. Vice-Presidents.

On the election of the President, Mr. W. L. Currie said he had now held the office for seven years, and he thought it would be a good thing in the interests of pharmacy in the West of Scotland that a change should be made.

Ultimately, however, Mr. Currie was induced to accept the office for another year.

Mr. David Watson was re-elected Secretary. Mr. David Moir was re-elected Librarian. Messrs. John Foster, James Robb, R. McAdam, J. A. Russell, and T. Dunlop were appointed Vice-Presidents, and the following were elected on the Committee: J. W. Reddell, J. Walker, Alex. Boyd, Robt. Brodie, Alex. Fraser, J. Moir, Jas. McMurray, P. Mitchell, John Neil, D. S. Robertson, Robert Tocher, J. W. Sutherland, M. Mackay, Alex. Bruce, and J. Taylor (Motherwell).

DUBLIN CHEMISTS' FEDERATION.

At Dublin, on April 19, the quarterly general meeting of this Association was held in the Pharmaceutical Society's house, 67, Lower Mount Street, the President, Dr. J. A. Walsh, in the chair.

The Honorary Secretary, Mr. J. Smith, read the minutes of the last meeting, which were adopted. Correspondence was read from the Local Government Board and from certain hospitals in Dublin, to which copies of a resolution concerning the free distribution of drugs and medicines had been sent. Dr. Johnston wrote promising to ventilate the resolution referred to at the next meeting of the governors of the hospital with which he is connected. A communication was received from Messrs. Burroughs, Wellcome and Co. to the effect that they had been informed that it was the intention of one of the members of the Federation to bring forward at the present meeting a resolution respecting their firm, and that from the tenor of the resolution it was evident that there was some misapprehension on the part of the proposer, and went on to point out their position in the matter.

The President said, as would be seen from the correspondence, the Federation was not by any means composed of cutters. It was doing admirable work, and though not a branch of the P.A.T.A., it was with the latter body to a certain extent, but if the P.A.T.A. ceased to exist there was no reason why the Dublin Federation should suffer. With regard to the motion brought forward at the last meeting by Mr. Bernard on the subject of labels, the small label proposed to be affixed to the wrappers of patent medicines when sending out, the object was to disclaim any responsibility in respect to the efficacy or otherwise of the article.

The President's remarks were discussed at some length, and it was the general opinion that the tendency to advertise proprietary preparations at the expense of home-made articles was short-sighted. The laying-in of large stocks of proprietary and patent medicines was also deprecated, as was also the giving of an article different to that called for by the customer.

At this stage Dr. McWalter entered and proceeded to move his resolution, which was that referred to by Messrs. Burroughs,

Wellcome and Co. Some exception was taken to the motion on the ground that it savoured too much of "boycott."

The discussion included reference to Beecham's Pills and Kepler's Extract of Malt, the price obtained for which ranged from 1*s.* 2*d.* to 2*s.* Eventually the following resolution was adopted on the motion of Mr. Wills seconded by Mr. Sullivan :—

> That Messrs. Burroughs, Wellcome, and Co. be written to, in the first instance, that chemists have a grievance in that they should have a protected profit of not less than 25 per cent. on their goods, believing that they have it in their power to regulate prices.

The President referred to the prescribing of medicines in hospitals and to the outgiving of prescriptions. The hour being advanced it was decided to postpone any further discussion.

PROCEEDINGS UNDER THE PHARMACY ACTS.

Pharmaceutical Society *v.* Russell.

At Brentwood County Court on Friday, April 21, before His Honour Deputy-Judge Robertson, the Council of the Pharmaceutical Society of Great Britain, by Richard Bremridge, Registrar of the said Society, sued John Russell, nurseryman and florist, of High Street, Brentwood, to recover one penalty of £5, for having sold poison, to wit, arsenic, contrary to the provisions of the Pharmacy Act, 1868 (31 and 32 Vic., cap. 121, sec. 15).

Mr. R. E. Vaughan Williams, barrister-at-law, instructed by Messrs. Flux, Thompson, and Flux, solicitors, 3, East India Avenue, E.C., appeared for the Society. Defendant was not legally represented.

Mr. Williams, in opening the case, read the section under which the claim was made, and said the penalty was sought for the offence of having kept open a shop for the sale of arsenic, which was contained in a mixture sold in tins under the name of Smith's Patent Weed Killer. On February 2, 1899, an agent of the Pharmaceutical Society visited the defendant's shop in High Street, Brentwood, and purchased a tin of Smith's patent weed killer, for which he paid 1*s.* 9*d.* The contents of the tin were analysed, and were found to consist of arsenic mixed with caustic soda. There was enough arsenic in the tin to kill seven or eight thousand persons. The Act required that arsenic should be coloured, so that it could not be mistaken for salt or sugar, or any other similar substance in common use, but, although there was some slight colouring matter in the arsenic contained in the tin, it was not sufficient. It having been established that the tin contained arsenic, a letter was sent to the defendant, asking him to pay the penalty. He replied, declining to recognise any liability to pay the penalty, and a further letter to the defendant had not elicited any reply. It was quite unnecessary for him (Mr. Williams) to say how very necessary it was that the public should be protected from this very dangerous substance.

His Honour (to defendant) : What have you to say ?

The Defendant : I did not sell the stuff, your Honour, and I do not sell it.

John Partridge, commission agent, examined by Mr. Williams, said that on February 2 last he went, on the instructions of the Pharmaceutical Society, to the premises of Mr. Russell in High Street, Brentwood. Mr. Russell was a nurseryman, with a great many places of business. Witness made a purchase of a tin of Smith's patent weed killer, and he identified the tin produced as the one he bought. He saw seventeen or nineteen tins of weed killer in the window. The tin he bought was taken from the window. Witness afterwards handed the tin to Mr. Moon, clerk to the Registrar of the Pharmaceutical Society. He produced the receipt which was given him when he purchased the tin.

His Honour (to defendant) : Have you any questions to ask him ?

The Defendant : I did not sell the stuff. I do not sell it. I use it in my profession as a nurseryman for killing weeds. He has a billhead there which I know nothing about.

His Honour : You had better look at it.

The Defendant (examining the receipt) : This is my billhead, but it is not my writing. The tin was sold by one of my men in ignorance. I was badgered, badgered, badgered by Mr. Smith, the maker of that stuff, who is a member of the Pharmaceutical Society.

Mr. Harry Moon, clerk to the Registrar of the Pharmaceutical Society, said he gave the instructions for the purchase to be made, and he received the tin from the last witness. He handed it to the analyst.

Mr. Ernest John Eastes, analyst, said he received the tin of weed killer produced from the last witness. It was then closed. He found it to contain 2¾ lbs. of a greyish-white powder. He analysed the contents, and found them to consist of a mixture of arsenic and caustic soda, with a trace of blue colouring.

Mr. Williams : Would that powder, if dissolved, make a practically colourless liquid ?—Yes, if mixed according to the instructions.

Mr. Williams : And it dissolves very readily ?—Yes, it does.

Mr. Williams : Is there sufficient poison there to kill many people ?—Yes, there is enough to kill seven or eight thousand people.

His Honour : In that tin ?—Yes.

Mr. Williams pointed out that there were a great many very careful provisions in the Pharmacy Act regarding the sale of poisons.

The Defendant said the weed killer was just as he received it from Mr. Smith. He did not sell it.

His Honour : How much of this stuff have you had in your shop at a time. You say you have not more than is necessary for your own use ?

The Defendant : Not enough, your Honour. I am now using salt and other things.

His Honour (to Mr. Williams) : You do not object to his using it himself ?

Mr. Williams : No, your Honour. They were in the window of the shop.

The Defendant : There are a lot of things in my window which I do not sell.

Mr. Williams : How did your assistant know the price ?—I suppose he worked it out from the bill.

Mr. Williams : Come, Mr. Russell, is it not a fact that you have frequently sold these things before ?—I say, positively, No.

Mr. Williams : I put it to you that your assistant has sold these tins before ?—I say he has not. I will send for him.

His Honour : If this sale was an act of inadvertence, you would not expect me to find for the Society ?

Mr. Williams : Yes, your Honour, if the assistant had general authority.

His Honour : The object of the Society is to see that such things are not sold by unauthorised persons ?

Mr. Williams : Yes, your Honour.

His Honour : The object is not to catch people ?

Mr. Williams : Certainly not, your Honour.

Edmund Crow, the assistant, then went into the box.

The Defendant : Have I ever authorised you to sell that stuff in my shop ?—You have never authorised me, but I have done so.

The Defendant : Have you ever sold lots of it ?—Only to a gentleman for whom I ordered it, and to one customer.

Mr. Williams : The first witness has told us there were seventeen or nineteen tins in the window ?—There might probably have been three or four.

Mr. Williams : You ordered this lot yourself ?—Yes.

Mr. Williams : Why ?—I bought them for a customer. I was asked to get them.

His Honour : Have you ever sold any to any other customer ?—Not that I am aware of.

His Honour : How did the tins come to be in the shop ?—We got more than the customer ordered and kept them for ourselves.

His Honour : Who was the customer ?—A gentleman from Hutton.

His Honour : What is his name ?—Mr. Baxter, I believe.

His Honour : Did you only send for them because the customer ordered it ?—Yes.

Mr. Williams pointed out that the explanations of the assistant differed from that of the defendant.

The Defendant : I think if anyone had given me an order for the weed killer I should have sold it myself in ignorance, not knowing that it was wrong. My nurseries are not in the High Street, and I am not always there.

His Honour (to Crow) : Why did you put the tins in the window ?—Simply to show ; to fill up the window. If any customer had come in I should have sold them in ignorance.

Mr. Williams, in reply to his Honour, said there was no mitigation of the penalty.

His Honour (after considering the section) : I am afraid that with some reluctance I come to the conclusion that I must allow the penalty in this case. I find the case has been proved.

Judgment for the Society for £5 and costs, with costs of counsel.

LETTERS TO THE EDITOR.

The Forthcoming Council Election.

Sir,—I notice that only one candidate (Mr. Glyn-Jones) for pharmaceutical honours takes up the question of dispensing in doctors' surgeries by unqualified persons, and he declares it as his principal object in seeking election. I am satisfied that if this evil was remedied, the public, the doctors, and the chemists would all be better off. 1. The public, because a qualified dispenser is the surest safeguard that the patient will get his medicine prepared in strict accordance with the doctors' orders, while it is alarming to contemplate the amount of mischief which an unqualified dispenser can effect—the possibility of the patient not deriving any benefit from "faked-up" mixtures, or even of the patient being poisoned by his ignorance of doses or incompatibles. 2. The doctors, because the doctors who employ unqualified dispensers are the ones who have big low-grade practices (1*s.* to 2*s.* medicine and advice)—they have not time to make up the medicines themselves, therefore employ cheap labour. My contention is that if it was made "infamous and disgraceful conduct in a professional respect" for a medical man to employ such men—qualified men being too great an expense—such medicos would again make up their own medicines, and the time thus taken up would result in some of their practice falling into the hands of the many young medicos who are waiting for it. It must also tend towards better fees. 3. The chemists, because the value of their qualifications would be greatly enhanced, and in many other ways a number of which will occur at once to all of us. We should also be in a better position to fight the common enemy,

Barnsley, April 19, 1899. ARTHUR OGLESBY.

Sir,—Is not Mr. R. E. Wright, one of the aspirants to a seat on the Council, the same gentleman who some time ago managed the Prospect Street (Hull) branch for the Hull Drug Co., Ltd.?

Hull, April 25, 1899. ENQUIRER (183/38).

Company Trading in Pharmacy.

Sir,—You have of late frequently devoted your editorial articles to dealing with various aspects of the present "burning question," viz., what is possible and what is desirable in new legislation for pharmacy. May I suggest that it would be of great value if you would give the trade your opinion and invite discussion in your columns on the following question: "Ought we to be satisfied (as regards the company question) with an enactment requiring that no company shall use the title or carry on the business of a chemist unless all the directors are qualified?" So far as I recollect the only remarks that have been officially made on this point are those of the President at the last Council meeting, and he appears to have only referred very briefly to it, putting forward very little in the way of reasons for the negative with which he answers the question. It appears to me—and I am by no means alone in the opinion—that it is a very practical and a very important question. I think further that it must be answered affirmatively, and with your permission I will briefly give my reasons. (1) We have no right to demand more. Pharmacy is in the curious position of being both a profession and a trade. The professional status of the pharmacist is sufficiently safeguarded if no one other than a qualified person is allowed to use the title or to personally take part in the practice of pharmacy; on the other hand, the trade of pharmacy must be subject, like all other trades, to the competition of large trading concerns with heavy amounts of capital behind them, such as is most frequently the case when limited companies enter the arena. Whatever we may think of the Lord Chancellor's inclusion of midwives with doctors and dentists and exclusion of pharmacists, it is the fact that the latter are sharply differentiated from the other professional persons by being also traders, and as such they require different treatment. (2) It is all there is any chance of getting. Parliament constantly shows that in all matters of trade it considers the public most likely to be efficiently served by large concerns, and it will probably be unable to see any reason for making an exception of the drug trade; while the admitted evil, now existing, of the evasion of the law by "one-man" companies, would be effectually put an end to by such a requirement as that suggested. (3) It would be a great hardship to ourselves to require all the members, *i.e.*, shareholders, of a company engaged in pharmacy to be qualified. It would mean that chemists alone of all traders were to be debarred from obtaining capital for their business by allowing the public to participate in the profits, under the Companies Acts. It is well known that many *bonâ-fide* pharmaceutical businesses conducted by qualified men have been turned into limited companies, and in many, if not all, of these cases some shareholders are unqualified persons, and all these businesses would be placed in an illegal position. In conclusion, I wish to say that in contending that the suggested enactment would be sufficient, I refer to the company question alone, and do not touch the question of restricting the compounding of medicines, as well as poisons, to chemists.

Newcastle-on Tyne, April 22, 1899. E. F. HARRISON.

A New Test for Cocaine.

Sir,—The note recently published in the Journal on a new test for cocaine reminds us of our experience with the following prescription, written by a local medical man two months ago, and intended as a throat spray:—

℞ Acidi Chromici ..... grana 4.
Cocainæ Muriatis ..... grana 2·5.
Aquæ Destillatæ ..... ad ℥i.
Misce fiat nebula nocte maneque utenda. Mitte ℥ii.

Many attempts were made to obtain a satisfactory preparation, but all failed. The use of diluted hydrochloric acid caused the formation of a greater precipitate than was produced by the admixture of the ingredients as ordered. The best result was obtained by keeping the two ingredients as far apart as possible, which, however, only delayed the precipitation, for on receiving the bottle a few days after, for a "repeat," it was found that fine crystals were firmly attached to the bottom and sides of the vessel, and these responded to a combination of cocaine with chromic acid. The cocaine was a good commercial sample, responded to the official tests, and was supplied by Messrs. Wright, Layman, and Umney, the mention of whose name in such matters is an additional guarantee of good quality.

Birmingham, April 18, 1899. F. H. ALCOCK.
R. A. COOPER.

An Attachment for Poison Bottles.

Sir,—Taking the "pros and cons." of the poison bottle into consideration, "what are we to do with the public that bring their own?" Must we refuse to put a poisonous liniment in a twopenny "Worcester sauce bottle"? Must we say "it is illegal; you must have a fluted bottle, and that will be another penny?" How do you think they will "take 'em on" in a poor neighbourhood? The "almighty penny" is the "boon and blessing" of the poor people, and it is the "poor people" that use most embrocations, and at the same time pay for them. Now there are many of the scheduled embrocations or poisons that chemists "in the goodness of their heart" would put into a poor man's bottle, even at a loss to himself if only to obtain a desired result, especially when the same man's wife is the poor victim; but what can he do if we allow ourselves nothing, and, out of charity change a "ginger beer" or "sauce" bottle for a genuine, orthodox, "up to '99 date" poison bottle? Now anyone who can find a cheap way out of the above difficulty should deserve (of course, after death) to be a "pharmaceutical saint," and a stained window in "Galen Place" would be visited by many a pill-box pilgrim in years to come. Now, I consider that anything which can be put cheaply on a bottle and make it meet the new requirements would be a great relief to the majority, and I would like to suggest the use of corrugated paper. This paper comes into the druggists' shop wholesale, and when overdone is destroyed, that is, turned into the dustpit. Now, for stock bottles, how would it do to take a piece of this paper, dip it into a solution of glue, quite hot (coloured red with red lead or any other suggestive colour), and apply immediately around the shop round, corrugations outwards? This would give a stiff corrugated surface, and not look at all bad on a stock bottle from a customer's point of view. To make permanent, it may be varnished with carriage varnish after being well set and dry. The stiffness would give all the sense of feel required. With regard to customers' bottles any fresh suggestion will be gladly received by

Kidderminster, April 21, 1899. J. HUNTLEY.

A Pharmaceutical Test for Acetanilide.

Sir,—With reference to the note by Mr. Cockburn in last week's *Pharmaceutical Journal* on "A Pharmacopœial Test for Acetanilide," it is, I believe, well known that phenacetin yields an odour on prolonged boiling with solution of potash and a few drops of chloroform, but this odour is not so pronounced as that yielded by acetanilide, nor is it produced so quickly. A modification of the test, which gives very good results, will be found on page 6 of the new edition of Squire's 'Companion.' It was described by Moerk (*American Journal of Pharmacy*, 1896, p. 393), who recommended the iso-nitrile test for the detection of 1 p. c. of acetanilide in other allied substances, with the addition of potassium permanganate to destroy the odours which are formed by other substances during that test:—0·1 gramme of methacetin, phenacetin, lactophenin, salophen, or phenocoll hydrochloride is boiled with 10 C.c. water (salophen is the only one not soluble in 10 C.c. of boiling water); then cool quickly by immersion in cold water, and filter through cotton-wool. To 2 C.c. of the filtrate add an equal volume of 5 per cent. solution of potassa (or soda), boil and add small fragments of potassium permanganate until the green colour first produced gives way to a violet or purple; then add two or three drops of a mixture made of chloroform 10 C.c., alcohol, 10 C.c., and water of ammonia, 0·5 C.c.; boil, and again add some of this mixture if the permanganate has not been reduced completely to brown manganic hydrate; after the chloroform has vaporised by standing a few moments, note the odour and compare it, if doubtful, with that yielded by a dilute acetanilide solution. In testing exalgin, omit the potassium permanganate, otherwise the test is made as above.

London, April 24, 1899. P. W. Squire.

Income Tax Overcharges.

Sir,—We are continually receiving complaints from all parts of the kingdom of the treatment of appellants by local Commissioners of Income Tax, who are very rarely fitted to perform judicial functions, and knowing very little about Income Tax are but tools in the hands of the surveyor. Even when quite desirous of acting fairly, the surveyor is, nevertheless, attorney for the Crown, and we have it on good authority that no man can serve two masters. We therefore most strongly recommend all persons who are now required to fill up the form of return No. 11, to add "Special Commissioners" to the General Declaration on page 3 after the words "and I desire to be assessed by the." These gentlemen are Government officials, end not being rival tradesmen nor influenced by personal, political, or other local feeling, may be relied upon to act with the greatest fairness. It is, of course, necessary to produce a proper statement of profits, which is rendered a very simple matter by using 'The Taxpayers' Cash Book.' Now is the time to appeal against last year's assessment on the ground of diminution of profit and other grounds. We shall be pleased to advise your readers gratuitously whether they are entitled to any repayment in respect of tax deducted from rents, interest, dividends, annuities, etc., whether paid "free of Income Tax" or not, on their sending us full particulars of their incomes from all sources and a stamped directed envelope for reply.

12 and 13, Poultry, E.C.
April 26, 1899.

The Income Tax Adjustment Agency.

Pharmacists and Quack Nostrums.

"A Square Man" writes to deplore the too frequent association of the names of prominent pharmaceutical chemists with advertised nostrums which disgrace the publications in which they are puffed, and he gives, as an illustration, an instance in which that is the case in connection with "one of the latest and worst incubations of quackery." We propose to bring the matter privately under the notice of the individuals referred to.

A Correction.

Mr. Evan Thomas Owen, writes from 60, High Street, Stoke Newington, to complain of a statement in the report of a case against May's Drug Stores, Limited, under the Sale of Food and Drugs Act, published in the Journal for March 18 last (see p. 262*b*). The statement reads as follows:—"Mr. Ernest Owen, described as a chemist, but not registered as such, said that he served the sample to the inspector." As a matter of fact there is no such name as "Ernest Owen" on the Register of Chemists and Druggists, but Mr. Evan Thomas Owen claims to be the individual referred to in the report, and his name does appear on the Register. We regret the inaccuracy in our report, and have great pleasure in making the correction as Mr. Owen requests.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Books (G. F.—27/24).—Refer to the article on "The Student's Library," published in the *Pharmaceutical Journal* for September 10 last.

Proof Spirit (J. A. F.—176/12).—We regret the answer is apparently not what you desired, but fail to see wherein it is deficient.

"Everbright" (A. W. T.—27/20).—We are not acquainted with the preparation you mention. Why not send a sample of it for examination?

Extractum Ergotæ (F. H. R.—27/18).—The explanation was given in the "Explanatory Notes on the B.P.," published in the Journal for December 10 last.

Address Wanted (G. and E.—27/14).—The firm you inquire about is apparently the Geddes' Manufacturing Co., cycle agents, 16 to 20, Farringdon Avenue, E.C.

Schools of Pharmacy (E. B.—27/15).—The "Students' Number" of the Journal, published on September 10 last, contains particulars of several suitable schools.

Phosphorated Suet (S. H. C.—27/8).—This should be kept in the dark. If you look, you will probably notice that the red coloration is more intense in those parts which have been nearest to the light. We have not found the preparation keep very well at any time. Possibly a few drops of chloroform would help to keep it.

Medical Qualification (J. H. H.—27/23).—There is nothing to prevent a duly qualified person from combining the practice of medicine with the ownership of a pharmacy, but, looking at the matter from a professional point of view, we question the desirability of so doing. At the same time such a combination, representing the undesirable custom of the old apothecaries, is not uncommon at the present time.

Vasogen and Valsol (T. G. W.—27/5).—They are said to be prepared by treating petroleum with oxygen in excess, followed by alkalis. If you will refer to the *Pharmaceutical Journal* for May 4, 1895 (p. 962), you will find a note on the subject. According to Kottmeyer, a mixture of heavy petroleum oil with 25 per cent. of crude oleic acid and 5 per cent. of absolute alcohol, yielded the counterpart of vasogen, when saturated with ammonia gas. Vasogen *spiss.* appeared to be a similar mixture of petroleum jelly and oleic acid, saturated with ammonia.

Oil for Hardening Boiled Sugars (Pharmaceutist—27/11).—We are not aware that any oil is used for the purpose of hardening boiled sugar, and should expect it to have the opposite effect. Sugar to set hard should be boiled to "crack," that is, until brittle when dipped in cold water. It assumes this state at between 310–315° F. The addition of a little glucose or, better still, cream of tartar, in the proportion of half an ounce to every 14 lbs. of sugar should be employed. This prevents the "graining" of the sugar when cold. You should recommend your client to get Skuse's 'Complete Confectioner,' published by W. J. Bush and Co., Artillery Lane, E.C.

ROYAL COLLEGE OF SURGEONS MAY 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Boric Acid in Soaps.

F. J. R. Carulla has read a short paper before the Nottingham Section of the Society of Chemical Industry, in which he states that boric acid in soap is of great use to destroy alkalinity, but it cannot remain in the free state in the wash water when the soap is put into use, as seems to be imagined possible. It can have no antiseptic effect, but for the introduction of antiseptics that require freedom from alkali into the soap boric acid is invaluable. A toilet soap is now made under a fancy name in which this principle has proved to be most effective. An addition of 5 per cent. of boric acid makes it difficult for soap to lather. It makes it, however, a very lasting and economical soap; still, that quality can be secured with a much smaller percentage of boric acid, whilst benefiting the soap in other ways by the reduced quantity used. Idiosyncrasy enters into the question of the use of soap as in other things, and some people can use a soap that would be very irritating to others. In regard to a point raised as to the time of contact of the soap solution with the skin, it was urged that this was an argument against antiseptic soaps which possessed no force. The object of using a soap of that kind is to get rid of disease germs and to prevent their transmission from one person to another. With the increasing use of superfatted soaps for toilet purposes, and the fact that disease germs can live and multiply in oils and fats, it is quite likely that much disease is transmitted from one person to another by using the same tablet of soap. That cannot happen with a genuine antiseptic soap. Then, again, disease germs are washed off the skin and carried into the water. There they will remain long in contact with the soap solution, which, if powerful enough, will limit their further power for harm.

A New Filtering Medium.

G. W. Sargent and J. K. Faust recommend a novel arrangement for difficult filtering operations, such as the removal of manganese dioxide from nitric acid after precipitation from the acid solution by potassium chlorate, or the removal of ammonium phosphomolybdate after precipitation from a solution. A carbon filtering-tube with a stem 5 inches long, and a body $3\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches in diameter, is filled $\frac{1}{4}$ inch with pewter sand, a small piece of glass-wool being used to retain the sand; over this a thin layer of asbestos is formed by pouring in the asbestos shaken up with water and sucking the bed dry. A little hot dilute nitric acid is poured back and forward through the tube several times, and it is then ready for use. When a heavy precipitate is encountered, the bulb from a syringe is used to force air into the tube and drive the liquid through, care being taken to keep the bulb compressed until removed from the tube.—*Journ. Am. Chem. Soc.*, 21, 287.

Delicate Reaction for Hydrogen Peroxide.

E. S. Barralet refers to the fact that solutions of hydrogen peroxide quickly oxidise the pale blue precipitate obtained by adding a solution of potassium ferrocyanide to a solution of a ferrous salt to "Prussian blue," and points out that, owing to the high colorific value of this pigment, the reaction may be used as a delicate test for the presence of hydrogen peroxide—in fact, for the detection of that compound in extremely minute quantities, since the oxidising agents, such as potassium bichromate, potassium permanganate, and calcium hypochlorite, cease to react at a far smaller degree of dilution. He dilutes 10 C.c. of hydrogen peroxide (10 vols.) to 100 C.c. with water; and further dilutes 10 C.c. of the mixture to 100 C.c. A solution prepared by diluting 20 C.c. of the latter with water to 1 litre contains 0·2 C.c. of hydrogen peroxide of 3 per cent. strength, or approximately 1 part of H_2O_2 to 165,000 parts of water. Such a solution instantly intensifies the pale blue colour of ferrous ferrocyanide, 1 C.c. in 20 C.c. of the freshly precipitated compound being quite sufficient to make the reaction apparent. A similar addition of 1 C.c. of unboiled water has no effect. The ferrous ferrocyanide should either be freshly precipitated for each application of the test or be kept in a bottle under a layer of petroleum.—*Chem. News*, 79, 136.

Analysis of the Ash of Cardamoms.

W. Watson Will points out that it is one of the characteristic features of Zingiberaceous plants that most of them take manganese from the soil, and he publishes the results of some analyses done by him on undoubted specimens of *Elettaria cardamomum*:—

Seeds (whole)	3·26	per cent. of ash.
Seeds (crushed)	3·52	,, ,,
Pericarp of fruit	6·17	,, ,,
Pericarp of fruit	5·96	,, ,,
Entire fruit and seeds (six taken in each case)	3·8	,, ,,
	4·219	,, ,,

The ash in all cases contained an appreciable quantity of manganese. There are several reports on the ash of cardamoms, some giving as much as 15 per cent.; but such an amount is thought to be far too high. There are so many varieties of cardamoms that it is just possible that there may be a wide variation in some species.—*Chem. News*, 79, 167.

New Film for Spectroscopic Photography.

Sir Norman Lockyer has lately been experimenting with flexible film, with the idea of adapting it to spectroscopic photography. The large concave Rowland grating which Sir Norman Lockyer is now using for his solar spectroscopic photographs has 20,000 lines to the inch ruled on its surface and is of $21\frac{1}{2}$ feet radius, giving a spectrum of 30 inches long. The focal plane of this grating is of necessity considerably curved; in fact, the plane of accurate definition at the edges of the field is about 0·5 inches in front of the similar plane at the centre. It is therefore impossible to get a sharp photograph of the whole spectrum on a glass plate; in fact, not more than 18 to 20 inches of the spectrum can be brought into focus on the same plane. This difficulty is, of course, got over by the use of a flexible film, which can be bent to the curvature of the field. A print of one o the photographs taken with this Rowland concave grating must be the longest solar spectrum photographed at a single operation. It is 30 inches long, and shows the arc spectrum of iron with a comparison spectrum of the sun from wave length 3600 to 5200.

Adaptation of Leaves to the Intensity of Light.

The term "photometric" is proposed by Professor J. Wiesner for those leaves which assume a definite position in light, either in order to obtain as much illumination as possible or to screen themselves from too much light; those which do not possess this property being "aphotometric." Photometric leaves, again, may be "euphotometric" or "panphotometric," according as they adapt themselves only to the maximum of diffused light or to both direct and diffused sunlight. The former are characterised by assuming a fixed position, at right angles to the direction of the strongest diffused light, while the latter have no such fixed position. The vegetation of forests and those plants which grow in deep shade present the most frequent and clearest examples of "euphotometric" leaves.—*Biologisches Centralblatt*, 1899, p. 1.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, MAY 3, 1899.

Present:

MR. WALTER HILLS, PRESIDENT.

Messrs. Allen, Atkins, Bateson, Carteighe, Corder, Cross, Grose, Harrington, Harrison, Johnston, Martindale, Park, Savory, Southall, Symes, Warren, and Young.

The minutes of the previous meeting were read and confirmed.

Diplomas.

The undermentioned, being duly registered as pharmaceutical chemists, were respectively granted a diploma stamped with the seal of the Society:—

Cowley, Harry James
Durbin, Herbert Samuel
Garsed, William
Glaister, Robert
Harrison, Thomas Arthur
Kelf, Henry David
Kluge, Herman James
Laverack, Clyde Carduke
Magan, Frances
Noble, Harry William
Nundy, Wm. Lockwood
Payne, Herbert
Spurway, Wm. James
Todd, John William
Wallis, Thomas Edward
Wamsley, Wm. Bunting
White, Daniel Hanbury
Whiting, William

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Adams, William Stuart; Glasgow
Akhurst, Arthur Alfred J.; Brixton
Allen, John H. S.; Haverstock Hill
Allison, Joseph W. W.; Ipswich
Ames, William R.; St. John's Wood
Anderson, David S. B.; Dunfermline
Arber, Alfred Preston; Cheltenham
Bailey, John Harling; Sheffield
Baker, Frank; Devizes
Ballard, Frank English; Smyrna
Bannerman, James M.; Edinburgh
Barker, Charles; Derby
Barrett, Henry William; Poplar
Bastide, Ernest; Elland
Bathe, Robert Samuel; Brighton
Bawcutt, Frank Frederick; London
Beales, Walter William; Norwood
Becby, Robert Berry; Guisborough
Belsher, Henry Ernest; Hanham
Bennett, William Chaplin; London
Bingham, Frank; Rotherham
Birnie, Alexander Stephen; Edinburgh
Birtwisle, Albert; Hartford
Blackburn, Alfred Edward; Leeds
Blyth, Isabella; London
Boothroyd, Frederick; Huddersfield
Bosher, Alexander; Blaydon-on-Tyne
Bourne, Henry Fred.; Torquay
Bowman Edmund; Grantham
Bowman, Edward; Bunker's Hill
Boxall, Frederick; Cricklewood
Boxall, Thomas William; Southwark
Breese, R George; Stoke Newington
Brewer, Walter Joseph; London
Brierley, Herbert Charles; Halifax
Brigham, John George; Ketteringe
Broadbent, Harry Ralph; Manchester
Brown, Harold Edwin; Hessle
Brown, Herbert; Nottingham
Brown, John Arthur; Nottingham
Browne, William; Stroud Green
Bruce, William; Larkhall
Burgess, F. W.; Tunbridge Wells
Callaway, James Thomas; Ashford
Cannon, Frederick William; Wallington
Cardno, Robert Catto; Aberdeen
Casely, Thomas; Hove
Chambers, Frank Dawson; Eastwood
Chandler, Richard Walter; Bristol
Churchill, Lionel Arthur; Birmingham
Clarke, Benjamin Gillam Kift; Bath
Clarke, Frederick S.; Altrincham
Clarke, John; Rotherham
Clugstone, William; Port Erin
Coles, Charles Avery; Reading
Coley, Robert; High Wycombe
Couldery, George Etches; Lewisham
Cox, William Francis; Birmingham
Craig, Andrew; Aberdeen
Crisp, Wallace William; London
Crosby, John; London
Crowden, Samuel Graham; London
Cruickshank, George Philip; Aberdeen
Cruse, Thomas Edward C.; Southsea
Cullwick, John Henry; Birmingham
Cumberbirch, William; Alderley Edge
Davies, Llewellyn Rhys; Brockley
Davies, Thomas; Llanybyther
Davis, Arthur Edwin; Matlock Bridge
Davison, John Lyle; Bolton
Dawson, Robert Hilliard; Wigan
Dewey, Thomas Henry; London
Duck, Frederick Edwin; Cardiff
Duff, William; Banstead
Duncan, Arthur; Glasgow
Duncan, James; Bournemouth
Dunford, Walter Henry; Clevedon
Dunsford, Thomas William; Torquay
Ellis, William Frederick; Harringay
England, Herbert; Bradford
Essery, William George; Plymouth
Evans, David; Woolwich
Evans, John Charles; Birmingham
Evans, John Thomas; London
Evans, John Watkin M.; Llanelly
Evans, Josiah; Monmouth
Fairley, Charles Ernest; Sunderland
Falkingbridge, Frederick; Whitby
Fielder, Arthur Buckley; Titchfield
Finlayson, William; Stockton-on-Tees
Firth, Fred; London
Fisher, Isaac; Southwark
Flemons, Edward Basset; Birkdale
Flick, William Stanley; Leicester
Flitcroft, Thomas Edward; Leigh
Flood, Fanny; Brockley
Forsyth, Douglas Millar; Edinburgh
Fowler, Frank; Torquay
Fresson, Frederick Henry; Stevenage
Fullerton, David Noble; London
Funnell, Richard; Brighton
Gair, Emmeline Annie; Ealing
Gardner, H. C. T.; Hampton-on Thames
Gedge, Augustus W.; Malvern Link
Gerrish, Emerson; Gt. Wigston
Gibson, Frederic; Birkenhead
Gibson, Hubert; Manchester
Glendinning, Robert; York
Glover, Arthur Sandon; Hull.
Glover, Charles Crafts; Chelsea
Goatcher, William John; Southampton
Godsland, William H. B.; Aldershot
Goodall, Horatio Charles; Lincoln
Gordon, David; Liverpool
Grammer, Frank; London
Grant, James; Glasgow
Gray, Matthew; Glasgow
Gray, William Edwin; Barnes
Gray, William Robert; Newcastle-on-T.
Green, Samuel Marston; Nunhead
Ground, Thomas; Birmingham
Haddock. Benjamin; West Bromwich
Hall, Herbert; Manchester
Hall, Robert; Aberdeen
Hamer, Enoch T.; Blundellsands
Hare, Charles; Southport
Hawley, John William; Liverpool
Heading, Herbert Henry; London
Hellens, George; Weston-super-Mare
Hellett, Frederick Charles; Brighton
Henderson, Henry John; Hitchin
Herbert, William; Dalston
Hobbes, Alfred Edward; Rochester
Hogg, George T.; Gateshead-on-Tyne
Hollow, Daniel; Torquay
Hora, Tudor Travers; Wandsworth
Hornblower, Joshua T.; Liverpool
Horton, Albert John; Maidstone
Insull, Edward Samuel; Hanley
Irvine, James; Hipperholme
Jack, William; Leicester
James, Alfred Watkin; Sketty
Jarvis, John, jun.; Pau, France
Jeffery, George Golder; Tring
Jeffs, Richard Thomas; Stourport
Jenkin, Charles; Bath
Jewell, Joseph Robert; London
Job, Andrew T.; Dulwich
Johns, John; Laugharne
Johnson, Robert Clitherow; Grimsby
Jones, Alfred William; Bristol
Jones, Richard Edward; Bow
Jones, Thomas Henry O.; Bayswater
Jones, William Luther; Anglesey
Jordan, Ernest Samuel; Worthing
Kellam, Edward Henry; Gt. Yarmouth
Kempton, Ernest Arthur; Greenwich
Kenway, Ivor; Neath
Kieft, Edward James; Ilfracombe
King, Ebenezer Thomas; Amersham
Kinsman, William Ernest; London
Kirkby, John George; Kilburn
Kissell, John Victor; London
Kitley, Sydney; Birmingham
Knight, George Thomas; Caerphilly
Knowles, Frederick W.; Warrington
Lacey, Richard Samuel; Brighton
Lacey, William James; Bedford
Latham, William Henry; Colne
Latreille, Albert; London
Lee, Charles Henry; Beckenham
Lenfestey, Leopold d'E.; London
Lewis, Thomas; Maindee
Lloyd, John; Croydon
Loeffler, George Berthold; Beckenham
Longley Charles; Denmark Park
Lounds, William Beaver; Kegworth
Lovegrove, G. E.; Shepherd's Bush
Ludlam, William Henry; Sheffield
McCormick, Frank Henry; Wrexham
Macdonald, David Baird; Leith
McEwan, Donald; Edinburgh
MacEwan, Walter; London
McLanachan, John; Birmingham
MacRae, David; Tunbridge Wells
Mair, William; Edinburgh
Mann, Ernest William; Birmingham
Marr, William; Aberdeen
Marchant, David; Eastbourne
Marshall, Henry; Aberdeen
Mason, Herbert; Wigan
Massingham. Hugh M.; Manchester
Matcham, Alfred Robert; Ipswich
Mathieson, Robert; Innerleithen
Merrick, Charles James; London
Metcalfe, Benjamin; Newbury
Metzler, Henry Job C L; Minories
Meynell, Henry; London
Miller, William Philip F.; London
Mills, Charles Thomas; Brightou
Minter, Albert Edward; Chatham
Moore, Francis Ayrton; Gravesend
Moore, Richard Herbert; Bath
Morgan, Edwin Abraham; Hitchin
Morgan, John Daniel; Bideford
Morris, Harry Barker; Kidsgrove
Morris, William Evans; Port Madoc
Mould, Charles; Wellingboro
Murdoch, James; Gourock
Noble, Charles Alfred; Wisbech
Norman, Charles Henry; London
O'Brien, Albert Christopher; Fulham
Oliver, Joseph; Hull
Ordish, Francis Prior; Mayfair
Parish, Alfred James; Eastbourne
Park, H. Marshall; Newcastle-on-Tyne
Parker, Herbert Charles; Stamford
Parker, John Thomas; Haworth
Parkinson, Charles; Wandsworth
Parkyn, Horace; London
Pasco, George Sidney; Dalston
Payne, Ernest Edward M.; Aylesbury
Pearson, George E.; Paddington
Peck, Thomas Whitmore; Birmingham
Phillips, Francis Daniel; Southsea
Pinchbeck, Gerald; London
Porteus, James Paul; Carnforth
Pottage, Edwin; Liverpool
Powell, Harold; Hyères
Prichard, Richard John; Bethesda
Pryer, Henry; Abergavenny
Ramsey, William; Norwood
Richards, Thomas Teverson; Thetford
Richardson, James Alfred; Scarborough
Richardson, W. E. H.; Freshwater Bay
Ridgley, George Stevens; Gillingham
Roadknight, C. H. W.; Atherstone
Roadnight, Joseph Rees; Sidcup
Roberts, George; Buffalo
Robertson, A.; King William's Town
Robinson, J. Scott; Grimsby
Rodgers, Ivo Frederick J.; Fulham
Ross, Alexander Hovels; Dundee
Rouse, William Henry B.; Southgate
Rowse, William James; Crawley
Rundle, Charles Walter; Bath
Sales, Charles Henry; Blackheath
Salthouse, Edward; Blackpool
Saunders, James Warnes; London
Scanlon, Frederick W.; Macclesfield
Schmidt, Charles; Minories
Schollar, Newman Howard; London
Simmons, Edward Harry; Pendleton
Sinnett, William; New Cross
Slator, Henry; Clapham
Smart, William David; Alton
Smith, Arthur Richard; Bermondsey
Smith, Charles; Llandudno
Smith, Joseph; Southsea
Smith, Percy Dolph; Brighton
Smith, Philip; St. Albans
Snowdon, John; Yarm-on-Tees
Sonley, Walter; Ilkeston
Stead, William Wilkinson; Bradford
Steven, Edward; Beauly
Sursham, Frederick Thomas; Ilford
Sweetapple, Thomas Pyke; Wimborne
Tanner, William E.; Westgate-on-Sea
Templeton, John Gow; Pollokshields
Thomas, Frank; Burry Port
Thomas, Owen Edward; Bangor
Thompson, Abraham Lewis; Dover
Thompson, John Robert; Edinburgh
Thomson, John Thorburn; Doune
Thorpe, Arthur Muxlow; Sleaford
Tims, Edgar Orlando; Bournemouth
Turner, Walter Frederick; Cambridge
Underwood, Albert Henry; Ipswich
Walker, Richard Thomas; Wigan
Ward, Ernest Baker; Rugby
Ward, Tom Goodrich; Hampstead
Watson, John Robert; Brixton
Watt, William; Walworth
White, Percy Frederic; Dulwich
White, Thomas Lee; Newcastle-on-T.
White, Thomas William; Liverpool
Wickens, Thomas Isaac J.; London
Widdowson, Richard; Nottingham
Williamson, William; Liverpool
Wilson, Luther; Bath
Windmill, William H.; Wandsworth
Wingfield, Thomas Arthur; Southport
Wilson, Henry Augustus; London
Wood, Edward Vivian; Brixton
Wood, James; Liverpool
Woodhouse, George Ernest; Bury
Woods, Benjamin A.; Melton Mowbray
Woods, Joseph J. Birkett; Tunstall
Woolley, Evan Edward G.; Taunton
Wride, Francis Blake; Southampton
Wright, Herbert; Bowes Park
Young, Francis Joseph; Leicester

Election of Student-Associates.

The following persons having tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Andrew, Thomas Andrew; Loftus
Baker, John Austin; Ventnor
Bambridge, Hubert; Wisbech
Beaumont, Percy; Wakefield
Deane, Harold; Clapham
Essam, James Francis; Sheffield
Galbraith, Walter Sloan; Glasgow
Gwatkin, Hugh Ross; Brighton
Hadfield, Roland Hurst; Preston
Harrison, Joseph; Redcar
Hirst, Thornton; Crediton
Howell, Albert; Warminster

Jones, John Robert; Mold
Kemp, William G. F. H.; Gainsboro'
Kirkland, Arthur; Nottingham
Matthews, William; Cirencester
Pugh, John Charles; Aberystwith
Purse, A. H. M.; Bishopwearmouth
Samuel, Henry; Leighton Buzzard
Sawdon, George Wellburn; Whitby
Scrimshaw, Sidney A.; Worthing
Self, Percy Arthur W.; Yeovil
Shearman, C. W.; Gt. Yarmouth
Sparrow, Arthur Barrington; Finchley
Stooke, Frederick A.; New Brompton
Thomson, Mabel; Brixton
Tilley, Ernest A.; Reading
Williams, Edward; South Petherton

Restorations to the Register.

The names of the following persons were restored to the Register of Chemists and Druggists:—

George Berthold Loeffler, Harrington, Croydon Road, Beckenham.
Trevan Bersey Mate, 176, King Street, Great Yarmouth.

Election of Honorary Members.

The President then moved the election of the following gentlemen as honorary members of the Society:—

Dr. E. Schmidt, Marburg.
Herr Apotheker Max Frölich, Berlin.
Professor Moissan, Paris.
Dr. Geo. Watt, C.I.E., Calcutta.
Professor William Whitla, M.D., Belfast.
Dr. Maxime Cornu, Paris.

He said it was hardly necessary for him to speak as to the respective position and work of those gentlemen, as they were known to all who took an interest in the advancement of pharmacy and the allied sciences. There was every reason to believe that the Society would feel honoured by having those gentlemen added to the list of honorary members. Dr. Maxime Cornu was the director of the Jardin des Plantes at Paris, which corresponded to the position of the director of Kew Gardens. Herr Apotheker Max Frölich was the Pharmaceutical Assessor in the Prussian Kultusministerium; he held a Government appointment in connection with the Sanitary Board—in fact, he was the Chairman of the body which, as far as pharmacy was concerned, had the care of the public health—and he was also President of the Apotheker Vereins, which corresponded to the Pharmaceutical Society in this country. Professor Moissan was Professor of Chemistry in Paris, and well known for his brilliant work. Dr. E. Schmidt was Professor of Chemistry in the University of Marburg, and had done a considerable amount of original work in reference to the study of alkaloidal products. Dr. Geo. Watt was one of the greatest authorities on the indigenous products of India, and Dr. Whitla was well known to them as Professor of Therapeutics in Belfast.

Mr. Martindale said he had much pleasure in seconding the motion, as he felt sure those names would add lustre to the list of honorary members. Two of them he was personally acquainted with. Professor Whitla, who would be remembered by all who attended the Conference at Belfast, took an active interest in everything concerning pharmacy, and would do all he could to bring about that union between medicine and pharmacy which they all desired to see. Dr. Ernest Schmidt was a Privy Councillor of the German Empire, and his work on the alkaloids was the standard book for students throughout the whole of Germany. His investigations into the alkaloids especially had been very useful. The other gentlemen also would certainly do credit to the Society.

Dr. Symes, in supporting the motion, said all who attended the Conference at Belfast and met Dr. Whitla must be impressed with the fact that he was an enthusiastic pharmacist. He was also the author of an excellent work on materia medica.

The motion was carried unanimously.

Election of Corresponding Members.

The President next moved that the following gentlemen be elected as corresponding members of the Society:—Dr. Greshoff, Haarlem; Dr. Keir Cross, Zemba, British East Africa; Mr. R. T. Baker, Sydney. He thought they would all welcome these gentlemen as corresponding members. Dr. Greshoff was Assistant Director of the Colonial Museum at Haarlem, and was a great authority on all medicinal products. Dr. Keir Cross was a medical missionary in Zemba, in British East Africa, and was greatly interested in the indigenous products of that country. Mr. Baker was Curator of the Technological Museum, Sydney. They had all done and were doing good work, especially in the line of materia medica, and would be useful to the Society in the future.

Mr. Martindale, in seconding the motion, said it was very desirable to keep in touch with foreign countries and colonies from which medical products were received. He had no doubt the gentlemen now proposed would be of great service to the Society in forwarding useful information.

The motion was carried unanimously.

Report of the Executive, North British Branch.

The President, in moving that this report be received and entered on the minutes, said he thought the report was very satisfactory in every way, and their thanks were due to the Executive for the care and attention which they had exercised in the details of the work in the north. The report largely dealt with matters of details very important in themselves. He wished to express publicly his indebtedness to the Chairman of the North British Executive, Mr. Ewing, for the very valuable work which he had rendered to the Society. He was always at the call of the office there, and they were all very much indebted to him for the work he had done during the past years. He also wished to express his appreciation of the work of the Assistant-Secretary.

Mr. Carteighe, in seconding the motion, also wished to express his thanks to the Executive for the work it had done, and to the indefatigable Assistant-Secretary, who went into such detail in the report.

The motion was carried.

Report of Joint Committee of the Boards of Examiners on the Certificates to be Accepted in Lieu of the First Examination.

The following report by the Joint Committee of the Boards of Examiners on the Examinations to be recognised in lieu of the "First" Examination was presented to the Council:—

Report of the Joint Committee of the Boards of Examiners.

The Society's Bye-laws provide that after August, 1900, persons desiring to be registered as "Apprentices or Students" shall, in lieu of the "First" or Preliminary Examination in general knowledge, be required to produce a certificate of having passed an Examination in the following six subjects: viz., English, Latin, a Modern Foreign Language, Arithmetic, Algebra, and Euclid, conducted by an Examining Body recognised by the Council of the Society.

The subjects at present required to be passed at the "First" Examination are three in number: viz., English, Arithmetic, and Latin. The papers set are of a simple character, but the standard for passing is high compared with that of other Preliminary Examinations—viz., 40 per cent. in each subject, with a minimum aggregate of 50 per cent.

The Bye-law, when it comes into operation, will add to these three subjects three entirely new subjects: viz., Algebra, Euclid, and a Modern Foreign Language. As at present only half the candidates succeed in passing the "First" Examination, it is more than probable that the addition of the three new subjects will have the effect of restricting to a considerable extent the admission of pharmaceutical students until the standard of education among the class of candidates who present themselves is materially raised.* The Committee, therefore, in coming to a decision as to

* The Committee has ascertained that the proportion of candidates who at present qualify for registration as medical students in the Second Class Examination of the College of Preceptors is only 33 per cent., and the proportion of veterinary students who qualify in the same Examination is only about 25 per cent.

the Examinations to be accepted in lieu of the present Preliminary, does not consider it advisable to demand, at the outset, too high a standard of attainment, either in the pass mark in individual subjects, or in the percentage of the total of marks required to be obtained in the aggregate.

The Examinations for Certificates conducted by the various public bodies concerned with secondary education, either in its general aspect or as preliminary to entering on professional study, may be roughly divided into two main classes, which are technically described as "Senior" and "Junior." The former are intended for pupils who leave school over sixteen years of age on the average; the latter for pupils who, as a rule, leave school under that age. At only two of these Examinations* is there any positive restriction as to the age of entry, though at the University Local Examinations over-age candidates cannot be placed in the Honours Lists.

The Incorporated Association of Head Masters of Public Secondary Schools, in a report published in 1896, classified these "Senior" and "Junior" Examinations as follows:—

SENIOR DIVISION.

Higher Certificate (Oxford and Cambridge Joint Board).
Senior Local (Oxford and Cambridge).
Matriculation (London, Durham, and Victoria).
College of Preceptors (First Class).

JUNIOR DIVISION.

Lower Certificate (Oxford and Cambridge Joint Board).
Junior Local (Oxford and Cambridge).
College of Preceptors (Second Class).
Preliminary Professional Examinations.

The General Medical Council has hitherto accepted "Junior" Examinations (*i.e.*, those intended for students under sixteen years of age) as satisfying their requirements; but it is now proposing to advance to the "Senior" grade, and has suggested that the College of Preceptors should establish a special Examination for intending medical students, the standard of which shall be midway between that of the present Second Class and that of the First Class Examination held by that body. As previously stated, the present requirements of the Medical Council involve the rejection of two-thirds of the candidates who present themselves at the College of Preceptors' Second Class Examination; the Committee is therefore of opinion that it would not be advisable to recommend the adoption of a higher standard than that of the "Junior" Examinations named in the above list, in lieu of the present "First" Examination.

In drawing up a list of Examinations to be recognised, two main factors have to be taken into account—

(1) The character and scope of the papers set in the various subjects:

(2) The proportion of marks required for passing
  (*a*) in individual subjects
  (*b*) in the examination as a whole.

With regard to the former, an inspection of a number of sets of published examination papers appears to indicate some diversity of standard, but it must on the whole be conceded that the character of the papers set for the Society's "First" Examination is hardly equal to that of the papers set for the great majority of the "Junior" Examinations. The requirements in Latin, for instance, at the College of Preceptors' Second Class Examination (as well as at the Oxford and Cambridge Junior Locals) are so far more exacting than at the Pharmaceutical Preliminary, that the translation of "unseen" passages is required, in addition to the translation of passages from set books.

With regard to the proportion of marks required for passing in individual subjects, and in the whole examination, as compared with the standard of the Pharmaceutical Preliminary, there is less opportunity for comparison, as the necessary information is rarely found in published regulations or reports. The lowest pass-minimum in individual subjects at any of the public examinations at present recognised by the Society appears to be that published by the Irish Intermediate Education Board, which is 25 per cent., and there is no mininum aggregate required. The College of Preceptors' pass-minimum in individual subjects is 30 per cent., with a minimum aggregate (assuming that the six obligatory subjects only were taken) of 44 per cent. The published minimum of the Matriculation Examination of the Royal University of Ireland is one-third of the maximum, or 33⅓ per cent. (with no minimum aggregate), and it may be lower, for "the case of a candidate who fails to reach this standard will be considered by the Board of Examiners." The minimum of the Durham University "Junior" Local Examination is 35 per cent., with no minimum aggregate. The highest published minimum in individual subjects is found in the case of one of the Scotch Examinations—that of the Local Examination conducted by the University of Aberdeen—where a minimum of 40 per cent. is required for the "Junior" grade, with no minimum aggregate, but a Certificate for this Examination can be obtained on passing in only two subjects.

It will thus be seen that the minimum for passing at these various Examinations in the United Kingdom, which may be taken as fairly representative of the whole, ranges from the 25 per cent. of the Irish Intermediate Board (with no minimum aggregate) to the 40 per cent. (with no minimum aggregate) of the University of Aberdeen, where passing in two subjects will earn a certificate. A comparison of the results of these various Examinations shows that the higher minimum required in the case of some of them does not invariably imply a lower percentage of passes, and on the whole it may be inferred that a minimum of 30 per cent., with a considerably higher total of marks, would represent not too low a standard for a Preliminary Examination.

Taking all the various conditions into account, so far as they can be ascertained from the published regulations and reports, the inspection of the papers set for the various Examinations, and the proportion of passes and failures as shown by the results, the Committee has come to the conclusion that it would not be advisable to attempt to discriminate too narrowly between the various Examinations conducted by public bodies specially concerned with general secondary education which have hitherto been recognised by the Boards, but to recommend the inclusion of all Examinations in the new list, and the omission of those that have been discontinued, or which necessarily imply the previous passing of one or other of the Preliminary Examinations included in the list—such as a University degree.

In Scotland the University Local Examinations have in some cases been superseded by the Leaving Examinations of the Scotch Education Department. On the results of these examinations three classes of certificates are awarded: Honours, Higher Grade, and Lower Grade. The certificates are granted for passing in separate subjects or groups of subjects, and the standard is presumably higher than it would be if candidates were required to pass in a certain number of obligatories at one Examination in order to obtain a certificate. The papers set for the Lower Grade are of quite as high a standard as the University Junior Locals and the College of Preceptors' Second Class, and the Committee accordingly recommends that it be included in the list.

Having regard to the increased scope of the Examination proposed to be substituted for the "First" Examination, the Committee is of opinion that it would be undesirable at present to insist upon the six subjects of the Examination being passed at one and the same examination.

The Committee, therefore, recommends that the certificates enumerated on the following page be accepted, subject to the condition that the required subjects shall have been passed at not more than two examinations.

With regard to Colonial and Foreign Examinations, the standard of which it would hardly be possible to appraise with any approach to accuracy, the Committee considers it inadvisable to include any of those Examinations in the published list, but rather that it should be left to the Council to deal with each exceptional case on its merits, as has hitherto been the practice.

The Committee accordingly recommends the subjoined list for adoption, subject to the following condition:—

> That Latin, English, a Modern Foreign Language, Arithmetic, Algebra, and Euclid be included in the subjects for which the certificates are granted, and that these subjects shall have been passed at not more than two Examinations of the same Examining Body; provided always that certificates which are accepted by the Scotch Universities for registration as medical students be accepted.

* At the Examinations of the Irish Intermediate Board, candidates over sixteen are not allowed to enter for the Junior Certificate; and at the London Matriculation Examination, none under sixteen years of age are admitted.

University of Oxford.
Junior or Senior Local Examinations.
Responsions.

University of Cambridge.
Junior or Senior Local Examinations.
Higher Local Examinations.
Previous Examination.

University of Durham.
Junior or Senior Local Examinations.
Preliminary Examination in Arts.

University of London.
Matriculation Examination.

Victoria University.
Entrance Examination in Arts, Faculty of Medicine Preliminary Examination.

University of Edinburgh.
Junior or Senior Local Examinations.
Preliminary Examination for Graduation in Medicine and Surgery.
Preliminary Examination for Graduation in Arts or Science.

University of Aberdeen.
Junior or Senior Local Examinations.
Preliminary Examination for Graduation in Medicine and Surgery.
Preliminary Examination for Graduation in Arts or Science.

University of Glasgow.
Preliminary Examination for Graduation in Medicine and Surgery.
Preliminary Examination for Graduation in Arts or Science.

University of St. Andrews.
Preliminary Examination for Graduation in Arts or Science, or Medicine and Surgery.

University of Dublin.
Public Entrance Examination.

Royal University of Ireland.
Matriculation Examination.

University of Wales.
Matriculation Examination.

Oxford and Cambridge Schools' Examination Board.
Examination for Higher or Lower Certificates.

Educational Institute of Scotland.
Preliminary Medical Examination.

Intermediate Education Board for Ireland.
Examinations for Senior, Middle, and Junior Certificates.

College of Preceptors.
Examination for a First or Second Class Certificate.

Scotch Education Department.
Honours, First Grade and Lower Grade Leaving Certificates.

Certificates of having passed an Examination of a legally constituted Examining Body not specified in the above list may be submitted for the consideration of the Boards of Examiners and the approval of the Council, and each individual case will be considered on its merits.

The work of the Committee has been much facilitated by the valuable assistance it has received from the Secretary of the College of Preceptors, to whom it is indebted for the statistical information in this Report.

The PRESIDENT said the report before the Council was most valuable and interesting, and he hoped that its printing and publishing would be unanimously agreed to. This matter had been under the consideration of the Board of Examiners for months past. The time had now arrived when some public notice should be given of the lines proposed to be adopted, and the certificates proposed to be accepted in lieu of the preliminary examination, arising from the alteration of the Bye-laws which would come into operation in the course of next year. The report was so full in itself that it was hardly necessary to add anything to it, because it covered so well the ground and formed a fitting introduction to the resolution he should have the honour to propose. He should like to express his thanks to those gentlemen who had acted on the Joint Committee of the Boards of Examiners—to the Vice-President, Mr. Saul, Mr. Taylor, and Professor Millar Thompson, and also to Mr. Ewing and Mr. Maben, who acted in Scotland—for the care and attention which they had devoted to the consideration of this important subject. The work of the Committee had been much facilitated by the valuable assistance received from the Secretary of the College of Preceptors, to whom they were indebted for the statistical information in the report. Some of the members of the Committee started the consideration of this subject with the idea and hope that the examination would be one which would be not only the examination of one examining body, but also taken at one examination, but the matter had been very carefully threshed out, and it had been considered advisable for the present to suggest that the certificates should be accepted, provided that they were passed at not more than two examinations of the same examining body. The principal reason which guided the Committee in coming to that conclusion was, in the first instance, that they might have a unanimous report; and also, in coming to a decision as to the examinations to be accepted in lieu of the preliminary, it was thought advisable not to demand too high a standard of attainment, and one which would perhaps create difficulties in the way of future students and aspirants to pharmacy. He thought it was wise, in making this change, to go slowly and surely. It was always possible after due notice to tighten up somewhat the conditions under which the certificates would be accepted, but he thought the Boards of Examiners had done wisely on the whole in making this concession, because they wanted things to go without difficulty; and under the conditions which would obtain in the future, he thought they might fairly expect that they would receive from those who were about to enter pharmacy evidence of a higher general education. He trusted that the result would prove that they would find in the course of a few years that those who came up for their qualifying examination would pass in larger numbers than they did at the present time. It had been pointed out by the Government Visitors and by examiners that a large proportion of the failures at the technical examination were due to the imperfect and poor character of the preliminary and general education of those who came up for examination. He hoped that the new condition of things, which was coming into operation after August next year, would have a beneficial effect on the practice of pharmacy generally. It would be seen from the report that there was a proviso that the certificates should be granted by one examining body at not more than two examinations, provided that the certificates which were accepted by the Scotch Universities for the registration of medical students should be accepted. Young men were registered as students by the General Medical Council if they had passed examinations under more than one examining body; that was to say, in the case of certain Scotch Universities, the University took the responsibility of saying whether a young man was efficiently educated for the purpose of being registered as a medical student. It had been thought wise to accept that position with regard to the Pharmaceutical Society. They threw the onus on the Scotch Universities to say whether they had satisfied themselves that the students who asked for their registration had satisfied one of the examining bodies already recognised by the Universities themselves. He would move the adoption, as a part of the regulations of the Boards of Examiners, of the list printed in the report. He should add that it was not a final list—it was quite possible it might be added to—but it was a kind of working plan for the present. In fact, on the very day on which the report was finally accepted a representative from the Central Welsh Board called upon him with reference to the acceptance of their certificates. As far as he could judge, it seemed a very important body, and one which in the near future would become still more important, and its certificate would appear to correspond very much with the leaving certificate of the Scotch Education Department. At present the Welsh Board examined between six and seven thousand students annually, and there were ninety-four secondary schools under county schemes. Probably, when the matter had been more fully considered, the Board of Examiners would recommend the inclusion of that body in the list.

Mr. MARTINDALE, in seconding the motion, said he understood this report had been under consideration for a considerable time, and much labour had been bestowed upon it. He was very glad they had come to an agreement, and that it was in favour of raising the character of the first examination, which he and others had

felt for many years was not adequate to the requirements of the case. A knowledge of mathematics was absolutely essential to anyone who proposed to enter on the study of chemistry, and a knowledge of one or more modern languages would also be a great advantage. He was glad that, for the present, a compromise had been effected by allowing the examination to be passed at not more than two sittings, but, after a time, it might be thought desirable to require a certificate to be obtained at one examination, as he believed was required by the medical examination boards.

Mr. Corder asked if a candidate coming up twice for examination would have to pay a fee each time.

The President said that would be a matter between the candidate and the examining body. The Board of Examiners had simply to deal with the certificates when they were obtained.

Dr. Symes said the question of increasing the stringency of the examination had already been fully discussed, and it was unnecessary to go over the same ground again. He hoped, when this new scheme came into operation, there would be a better educated class of men coming forward, and that the percentage of failures in the qualifying examination would be much less. He would like to emphasise the statement that the list now presented was not to be regarded as final, and that other educational bodies would have an opportunity of submitting their claims. He would also remark that although it appeared from the report that in some cases a minimum of 25 per cent. of marks was sufficient to pass a candidate, and in others a minimum of 40 per cent., it did not follow that one examination was more lax than another. He had no doubt the percentage required for a pass was taken into consideration in allotting the marks.

Mr. Atkins desired to thank the Committee for this report upon a subject in which he had long taken a deep interest. He felt strongly that the large percentage of failures at the qualifying examinations arose from the imperfect preliminary education of the candidates, and he thought it was really an act of mercy to impose such conditions at the outset as would prevent young men insufficiently prepared from coming forward. It was only moving along the lines of the modern spirit in matters of education. Preliminary education was so far improved that many of their errand boys could run their apprentices very close in their attainments; the great public schools were well looked after, but the great intermediate sphere of education had been in a very slipshod condition. There were signs of improvement, however, one of which was the proposition for a teaching university in London, with which, he hoped, the Society might some day be associated.

Mr. Carteighe said he would like to make an appeal to parents, especially members of the Society who were bringing their sons up to pharmacy, to do all in their power to infuse sufficient enthusiasm into their boys to make them go in for the senior certificates rather than the junior. It cost no more money, and his experience was that boys of fifteen or sixteen, before leaving school, could as easily pass the senior examination as the junior. They knew that a first-class certificate from any one of those bodies practically carried a man anywhere and opened every door to him in future. If his health failed in pharmacy, he could go in for medicine or law, and he would be sure to do well anywhere.

The President, in putting the motion, said he would emphasise Mr. Carteighe's appeal to all those entering the calling, to take the highest qualification possible.

The motion was carried unanimously.

Report of Finance Committee.

The President, in moving the adoption of this report, said the receipts and expenses were of the usual character, and, although the figures were somewhat large, it was not necessary to call attention to any point, except that there was a payment suggested for the insurance of their leases, which was a somewhat new but he thought a very wise arrangement.

The motion was carried.

Benevolent Fund Committee.

The report of this Committee included recommendations of grants amounting to £56 in the following cases :—

Widow (70) of a former member and prizeman in the School of Pharmacy. Applicant is in feeble health, and a daughter, who was her chief support, has broken down. (Holywell.)

A registered Chemist and Druggist (74), who is, with his invalid wife, entirely dependent on charitable aid. (N. Lincs.)

Widow of an Associate (50). She has been unfortunate in her hotel venture, and asked for assistance to help educate her younger children. (London.)

A former Associate (81), who has had eight previous grants, and is practically dependent thereon. (Croydon.)

Widow of an Associate (56). Had a grant last year. She has a son to partially support. (Liverpool.)

One case was rejected and two cases were further deferred.

Mr. Atkins moved the adoption of this report. He called attention to the fact that one of the recipients had been an Associate of the Society as far back as 1842, and another was the widow of a former prizeman of the Society. He also wished to say that they received very valuable help from their local and divisional secretaries, as well as other correspondents, with regard to the cases presented to them. There were sometimes cases about which they were a little perplexed notwithstanding all the care and assistance rendered by the Secretary.

The motion was carried.

Law and Parliamentary Committee.

The report of this Committee stated that the President had reported the position of the Pharmacy Bill in the House of Lords, and the Committee recommended that the matter be left in the care of the Watch Committee.

The President, in moving the adoption of the report, said it was rather of a negative character, but it was satisfactory because it showed the confidence which the Committee had in the Watch Committee. He believed the Council would also show that confidence, and that their friends throughout the country would show the same confidence in the Council, unless it should happen that they were brought under the misleading influence of irresponsible and self-constituted advisers, to their ultimate disadvantage. He did not propose to make a speech on the present occasion, but he might say that he was not at all depressed by the present position of affairs. It was just as well to have a little stirring up in the matter, and he believed that ultimately some good would result from the present condition of affairs. In what direction or to what extent that would be realised he was not prepared to say, but they had been going on for some years, getting worse and worse, and the sooner they came to some definite understanding in matters referring to company trading the better. He did hope, therefore, that some good to all qualified and registered persons would come out of the present inquiry and the present condition of things in the House of Lords. He could assure the members that the Watch Committee would do all that lay in its power to protect the interests of all qualified persons.

The motion was seconded by Mr. Harrington, and carried unanimously.

Library, Museum, School and House Committee.

The President moved the adoption of the report of this Committee, which stated that the Librarian had presented his

usual report, including the following particulars regarding attendance at the library :—

Attendance.	Total.	Highest.	Lowest.	Average.
March	503	33	9	19

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
March	218	150	68	14*s.* 2*d.*

The Committee recommended that the undermentioned books be purchased for the Library in London :—

Squire's 'Companion,' second copy.
Lyons' 'Practical Assaying,' new edition.
Pearmain and Moor's 'Analysis of Food and Drugs.'

The Curator's report had been received, and included the following particulars :—

Attendance.	Total.	Highest	Lowest.	Average.
March	896	65	19	34

Several donations to the Library and Museum had been received (see *P. J.*, April 29, p. 392), and the Committee had directed that the usual letters of thanks be sent to the respective donors.

Mr. Carteighe had presented a portrait of the late Chas. Dinneford, a founder of the Society, for which he was thanked by the President.

The Committee approved the temporary appointment of Mr. Garle as Junior Assistant-Demonstrator in the School.

The Society's Surveyor reported the steps he had taken to ensure the carrying out of the covenants of the leases of certain property owned by the Society.

The annual report was considered, revised, and referred to the Council for adoption.

The Committee recommended that Mr. Garsed, of Elland, be appointed the Burroughs Scholar for the session 1899-1900.

The President, in moving the adoption of the report, said most of the business was of a routine character, and needed no special comment. He would only say that the reports on the various properties by the Surveyor were made in pursuance of an arrangement by the Committee which he thought was a very proper one in the interests of the Society. Mr. Wm. Garsed, who was recommended for the Burroughs' Scholarship, had been working for two sessions in the School, and had recently passed the Major examination, and he had no doubt he would benefit by this Scholarship.

The report and recommendations were unanimously adopted, and Mr. Garsed was appointed to the Burroughs Scholarship by a specific resolution.

Appointment of an Examiner.

The President said he had received a letter from the Assistant-Secretary in Edinburgh, saying that at a meeting of the Executive of the North British Branch, on April 21, Mr. Peter Boa had been nominated as a member of the Scotch Board of Examiners for the remainder of the present year, in the place of Mr Thomas Maben. He therefore moved Mr. Boa's appointment. He had been a member of the Board before, and was in every way suitable.

The motion was at once agreed to.

The Jacob Bell and Manchester Scholarships.

The President moved the appointment of Messrs. Lucas and Pinches to conduct the examinations for the Jacob Bell Memorial Scholarship and the Manchester Pharmaceutical Scholarship for the current year.

The motion was carried unanimously.

The British Pharmacopœia.

The President referred to a letter which had been received from the President of the General Medical Council (see *ante*, p. 105) with reference to the arrangements to be made with regard to the production of the next Pharmacopœia. It stated that in the report of the Pharmacopœia Committee it was suggested that steps should be taken to examine into certain of the criticisms made on the Pharmacopœia, 1898, and to accumulate information which might be of service for the publication of the next Pharmacopœia. It was also suggested that the Pharmaceutical Societies of Great Britain and Ireland should be invited to co-operate in the investigation and to appoint members of the Pharmacopœia Committee. Those suggestions were approved by the Medical Council, who asked if the Society was willing to co-operate and appoint representatives on the Conference. He was glad to think that the arrangement suggested had been found practicable. He moved that Mr. Charles Ekin and Dr. W. Inglis Clark be appointed to represent the Society at the meetings of the Pharmacopœia Conference to be convened by the General Medical Council. Both those gentlemen had been members of the Pharmacopœia Committee of the Pharmaceutical Society, which did some excellent work in the preparation of the 1898 Pharmacopœia.

Mr. Carteighe, in seconding the motion, said he saw in it the commencement of that *bonâ fide* cordial co-operation between medicine and pharmacy, in the construction of the Pharmacopœia, to which they had all aspired for many years. The work done during the two or three years preceding the publication of the 1898 Pharmacopœia showed the members of the Medical Council the enormous amount of work that ought to be leisurely done during a much longer period, and how much the members of the Medical Pharmacopœia Committee suffered from not being in contact with educated and trained pharmacists. From this Conference it was to be hoped that the necessary means would be by degrees evolved, so that all the capable men who would be likely to assist in the future and some of those who had assisted in the past would probably be asked to give their assistance. It was not to be a working Committee ; it was a sort of conference of advice, and would be of the greatest possible value, enabling arrangements to be made, immediately after the publication of one Pharmacopœia, for preparing to do work for the next.

The motion was carried.

General Purposes Committee.

The report of this Committee included the results of the competition for the

Pereira Medal and Council Prizes.

Professor Thompson, Professor Farmer, and Mr. R. Wright, who had been appointed to conduct this Examination, had reported that eleven candidates had entered for the competition, and that three had obtained the requisite standard of efficiency for the awards. The envelopes bearing the mottoes of the successful competitors having been opened were found to contain the names of—

Herbert Payne,
Frances Magan,
and
Thomas Edward Wallis.

None of the other candidates reached the required standard. The following are the mottoes of the remaining competitors, arranged in order of merit :—

4. Tawrups.
5. Northern.
6. Spes.
7. Whatever is worth doing, is worth doing well.
8. 'Tis not in mortals to command success.
9. Where there's a will there's a way.
10. Audax.
11. X

15.

The following awards were therefore made in accordance with the report of the Examiners :—

1st.—Pereira Medal (Silver), and books value £5, presented by the late Thomas Hyde Hills.

2nd.—Pharmaceutical Society's Medal (Silver).

3rd.—Pharmaceutical Society's Medal (Bronze).

The President moved the adoption of the report and recommendations, which was carried, and a vote of thanks was passed to Professors Farmer and Thompson and Mr. Wright for conducting the examinations.

Correspondence.

The President read communications which had been received from Swansea, Cambridge, Edinburgh, Aberdeen, Burnley, Manchester, and the Midland Pharmaceutical Association, with reference to the Lord Chancellor's Pharmacy Bill. He said it was gratifying to note the interest which was taken in pharmaceutical matters by those various bodies, and also to see that, generally speaking, they all showed a spirit of loyalty to the representative body—the Council. He would suggest that those communications be referred to the Law and Parliamentary Committee for consideration.

That was unanimously agreed to.

The Council then went into Committee to consider the legal portion of the report of the General Purposes Committee. On resuming, the report and recommendations were adopted, and the usual resolution was passed, authorising the Registrar to commence proceedings against certain persons named therein.

The Annual Report.

The Council next went into Committee to consider the draft annual report. On resuming, the report was ordered to be printed in the *Pharmaceutical Journal* (see p. 411).

Report of Examinations.

April, 1899.

	Candidates.		
	Examined.	Passed.	Failed.
England and Wales :—			
Minor	367	100	267
Major	37	18	19
First Examination	429	209	220

Thirty-seven certificates were received in lieu of the Society's examination.

"FIRST" EXAMINATION RESULTS.

A meeting of the Board of Examiners for England and Wales was held on Tuesday, May 2.

A certificate presented by Arthur John Roberts, of Falmouth, was accepted in lieu of the Society's examination.

The report of the College of Preceptors on the examination held on April 11 was received. 429 candidates had presented themselves for examination, of whom 220 had failed.

The following 209 passed, and the Registrar was authorised to place their names upon the Register of Apprentices or Students :—

Adam, John Cruickshanks ; Dunblane
Adamson, Armit Haxton ; Leven
Aitchison, Robert Cook ; Biggar
Alexander, James ; Stirling
Allen, John Edward ; Blackpool
Avery, Francis Hubert ; Birmingham
Balderston, William Thomas ; Spilsby
Barclay, James Gordon ; Paisley
Barnard, Alfred B. ; Maldon
Barnes, Ernest Bramwell ; Glossop
Barrie, Alexander Young ; Dundee
Barton, John Wadsworth ; Wisbech
Bateson, Harold M. ; Dalton-in-Furness
Bayley, John Wesley ; Brighton
Beare, John Henry ; Launceston
Bigwood, Hubert Hepburn ; Sidcup
Black, James ; Leslie
Blewett, William Henry ; Bedale
Bower, Samuel Geldart ; Ulverston
Breingan, William ; Glasgow
Brentnall, Percy Walker ; Ripley
Brooks, Frank Edward ; Newbury
Bruce, Henry Lumsden ; Aberdeen
Brunton, Alexander ; Dumfries
Buckley, Charles Oswald ; Castleford
Burnett, Douglas Gray ; Fraserboro'
Burns, Andrew Bell ; Ayr
Burton, Arthur Stanley ; Long Eaton
Byron, George Henry ; Grantham
Chalmers, John Macrae ; Perth
Chisholm, Charles H. S. ; Kingussie
Christopher, Richard Thorney ; Sleaford
Clarke, George Henry ; Edinburgh
Coleclough, F. Robert ; Connah's Quay
Cook, James ; Colinsburgh
Cooper, Thomas John ; Macclesfield
Crawford, James ; Loanhead
Crombleholme, Joseph ; Liversedge
Crowther, Arnold Thackeray ; Horsham
Davies, Benjamin Pugh ; Begelly
Davies, Charles ; March
Davis, Charles Wakefield ; Oxford
Day, William George ; Windsor
Deans, Robert ; Glasgow
Derrington, Nellie ; Birmingham
Dey, Basil A. R. ; Wishaw
Edward, Mary Christain ; Kirriemuir
Elkington, George William ; Lincoln
Elliott, Harry Adams ; Andover
Everton, Arthur ; Birmingham
Farmer, Charles Frederick ; Spilsby
Farrer, Bartholomew ; Stroud
Fereday, Ernest Arthur ; Cannock
Ferguson, James Sherrif ; Dundee
Fewster, Oscar Longwood ; Dewsbury
Forbes, John ; Aberdeen
Gairn, Andrew B. ; Edinburgh
Garbutt, John Hall ; Malton
Gardiner, William Wilkie ; Kirriemuir
Gauld, James ; Aberdeen
Gibbon, Theophilus John ; Login
Gilkes, J. Herbert ; Stony Stratford
Goodyer, Norman S. ; Northallerton
Gregory, George ; Newark-on-Trent
Griffin, Jack ; Penkridge
Griffiths, Agnes Ellen ; Cirencester
Grimshaw, Edmund ; Wigan
Groombridge, Edred Joshua ; Plymouth
Grout, Harry Fred ; London
Gwillim, Walter ; Stamford
Hart, Frank, jun. ; Melrose
Hay, Kenneth Hector ; Dingwall
Healey, Herbert B. ; Harrogate
Heath, Aaron ; Cobridge
Hepworth, Raymond ; Barnsley
Hill, Gavin Watson ; Hamilton
Hole, George Redwood ; Trowbridge
Houghton, Frederick ; Norwich
Howe, Arthur ; Hull
Hutchens, William ; Broughty Ferry
Ingamells, Charles Henry ; Boston
Inglis, George ; Turriff
Innes, Robert Green ; Aberdeen
James, John Maurice ; Plymouth
James, John Percy W. ; Eastington
James, Ricardo ; Redruth
Jeeves, Gerald Childs ; Hitchin
Jeffery, Arthur Giffard ; Londonderry
Jones, Edward Garfield ; Pontypridd
Jones, Edwin Oswald ; Brynmawr
Jones, Evan ; St. Clears
Joscelyne, M. Helen ; Bi's. Stortford
Jung, Fritz R. W. ; Southampton
Kay, Allan George ; Elgin
Kellas, Robert ; Duffstown
Kemp, William Herbert ; Lincoln
Kennedy, Jean ; Hawick
Kent, Edwin Horner ; Cardiff
Kinder, Edith ; Whaley Bridge
Kindness, John ; Elgin
Kinghorn, Alexander ; Methlick
Kirkman, Edith ; Chorley
Knox, George ; Oldmeldrum
Lamb, Charles Frederick ; Goole
Lawrence, Herbert S. ; Stoke-on-Trent
Lawrence, Luther J. ; Long Eaton
Lee, William Brown ; Doncaster
Leekie, John Robert T. ; Glasgow
Leonard, Robinson ; Nottingham
Lester, Herbert William C. ; Nuneaton
Lill, George Harborough ; Boston
Lomax, Leonard ; Holmfirth
Lowson, Peter ; Broughty Ferry
McBain, Robert Murison ; Fraserburgh
McCurrach, Robert ; Aberdeen
McDougall, Jane Isobel ; Montrose
McGregor, William ; Glasgow
McGregor, Robert ; Girvan
McKechnie, Robert ; Dumfries
McMillan, John ; Stirling
McPherson, Duncan ; Aberdeen
Maxfield, Arthur Gregory ; Sheffield
Mead, Herbert ; Haslingden
Miller, John Fletcher ; Ashton-u.-Lyne
Minney, Thomas ; Hyde
Mitchell, William ; Aberdeen
Moir, Samuel ; Crieff
Morgan, Percy ; Ryde
Moultrie, Peter Keir ; Dunfermline
Mundle, Wilfred ; Forest Hall
Murray, David ; Huntly
Murray, David ; Portobello
Newark, Edith Hannah ; Coventry
Norman, Cecil ; Cheltenham
Oldham, John Brindley ; Burnley
Olivant, Percy ; Gainsborough
Orme, Arthur Ernest ; Alfreton
Owens, Percival Earnshaw ; Glasgow
Parkin, Frederick Avery ; Doncaster
Parry, Edwin ; Llandudno
Paterson, George ; Turriff
Payne, Lucy May ; Wendover
Peasegood, George F. ; Bridlington
Phelps, Wilfrid Maslin ; Swindon
Pollard, Herbert ; Bradford
Potts, John Harold ; Macclesfield
Price, Robert Edward ; Rhyl
Prosser, Mabel Eliza ; Coleshill
Rees, Emlyn Alban L. ; Tylorstown
Roberts, J. A. H. C. ; Blaydon-on-Tyne
Roberts, Walter R. S ; Edgmond
Robertson, James Coutts ; Perth
Rodger, Martin ; Motherwell
Rogers, Ernest W. T. ; Tiverton
Rutter, Wilfred ; Wallsend-on-Tyne
Salt, Fred ; Buxton
Salt, Leonard Thomas ; Harrow
Scorgie, Alexander ; Edinburgh
Scorgie, Robert Lind ; Lauder
Scott, Charles Alexander ; Edinburgh
Sheard, Samuel Alfred ; Morley
Sigley, Elijah ; Grimsby
Simmons, Frank ; Cramlington
Simmons, Robert ; Cramlington
Simpson, Henry ; Berwick-on-Tweed
Simpson, Peter ; Carlisle
Sinclair, Thomas Lawrie ; Woolwich
Skelton, Reginald Henry ; Maryport
Skilbeck, John Mason ; Glasgow
Skues, Ernest ; Halifax
Smart, Nevil ; Littlehampton
Smith, Francis Joseph ; Twickenham
Smith, John Harold ; Clay Cross
Smith, Walter ; Hyde
Smithson, Herbert H. S. ; Gainsborough
Somerville, James ; Glasgow
Spence, Donald ; Market Harboro'
Squires, Seth Steggall ; Leicester
Stevenson, Thomas H. D. ; Stapleford
Stewart, Sinclair Reid ; Hamilton
Tait, Albert Patrick ; Forfar
Taylor, Alexander James ; Southgate
Taylor, Arthur Henry ; Blandford
Taylor, Leonard Harry ; Coggeshall
Taylor, William ; Bedlington
Templeton, Alexander Steel ; Dalry
Tennant, A. P. ; Newton Stewart
Thomas, Thomas Mansell ; Morriston
Thomson, James ; Stirling
Thomson, James P. ; Leicester
Thorne, Herbert Leighton ; Boston
Toft, John F. ; Dalton-in-Furness
Twidale, Herbert ; Wisbech
Vance, Henry W. ; Weston-super-Mare
Vaughan, Samuel L. ; Leeds
Ventham, Alfred John ; Devizes
Wain, George Gardner ; Boscombe
Wall, George ; Leeds
Waterhouse, W. H. B. ; Fakenham
Watts, Ernest George ; Cardiff
Wells, William Henry ; Portsmouth
Whitelaw, George Cumming ; Dundee
Wiles, Henry ; Haslemere
Williams, Ebenezer P. ; Canonbury
Williams, Harold ; Dalton-in-Furness
Williams, Henry ; Hayle
Willis, Arthur Henry ; New Brompton
Wolff, Hugo ; Chester
Wood, John ; Burton-on-Trent

The questions set at this examination were published in the *Pharmaceutical Journal* for April 22, p. 368.

The following is a list of the centres at which the examination was held, showing the number of candidates at each centre, and the result :—

	Candidates.				Candidates.		
	Examined.	Passed.	Failed.		Examined.	Passed.	Failed.
Aberdeen	21	16	5	Leeds	17	11	6
Birmingham	14	8	6	Lincoln	12	10	2
Brighton	2	2	0	Liverpool	17	3	14
Bristol	9	3	6	London	42	14	28
Cambridge	2	0	2	Manchester	35	16	19
Cardiff	10	6	4	Newcastle-on-Tyne	15	7	8
Carlisle	7	4	3	Northampton	2	2	0
Carmarthen	8	3	5	Norwich	6	2	4
Carnarvon	6	2	4	Nottingham	18	9	9
Cheltenham	8	4	4	Oxford	8	3	5
Darlington	8	3	5	Penzance	4	2	2
Dundee	20	11	9	Peterborough	7	5	2
Edinburgh	32	15	17	Plymouth	6	3	3
Exeter	3	1	2	Sheffield	10	4	6
Glasgow	34	21	13	Shrewsbury	5	1	4
Hull	9	4	5	Southampton	15	7	8
Inverness	7	3	4	York	3	0	3
Lancaster	7	4	3				

ANNUAL REPORT OF THE COUNCIL.

Finance. The financial statement for the year 1898 has been prepared for the Finance Committee by Mr. T. P. Scrivener, Fellow of the Institute of Chartered Accountants, and submitted to the Auditors. The statement duly signed is appended hereto.

Examination. During 1898 the candidates for the First examination numbered 1349, of whom 637 or 47·22 per cent. passed, and 712 or 52·78 per cent. failed. In comparison with the preceding year the number of candidates for 1898 shows a decrease of 65, but the percentage of failures was somewhat higher. For the qualifying examination 1679 candidates entered and 535 or 31·89 per cent. were successful. In 1897 the number was 1441, and the pass percentage was 32. The Major candidates during the year numbered 121 as against 106 in the previous twelve months, and there were 57 failures.

Evening Meetings. At the meetings in London interesting lectures have been delivered by Professor Ramsay, F.R.S., Mr. W. Murton Holmes, and Professor J. Reynolds Green, F.R.S., and the thanks of the Council are due to those gentlemen, and to Professor J. Norman Collie, F.R.S., who, at short notice, gave a much-appreciated account of "The Canadian Rockies." In Edinburgh the session was opened with an Address by Professor Stockman on "Arrow Poisons," and subsequent papers of considerable interest and value were contributed by Messrs. D. Brown, J. Lothian, D. B. Dott, A. Davidson, G. Lunan, G. F. Merson, W. B. Cowie, A. Currie, B. Cockburn, and others.

School. The fifty-sixth session of the School of Pharmacy was opened with an address by Sir James Crichton Browne, F.R.S., which attracted a large audience, and received considerable attention from the general press. The Council has pleasure in recording that every bench in the Laboratory has been filled, affording a proof that the present educational arrangements are much appreciated.

Libraries and Museums. During the year many additions have been made to the library and museums, and the Council has continued the policy of steady development of these departments. The purchases of books and specimens have been again supplemented by the donations of honorary, corresponding, and active members, as well as by other persons interested in pharmacy or the allied sciences.

Council. In November the Treasurer, Mr. Hampson, who, as a member of Council for twenty-six years, had taken an active interest in the administrative work of the Society, resigned his seat through ill health. Mr. Wm. Martindale was appointed Treasurer, and the vacancy on the Council was filled by the election of Mr. J. F. Harrington.

North British Branch. The report of the Executive to the Council was received in May, and records the efficient and satisfactory condition of the North British Branch. The assistance of the Executive in the management of the Branch is cordially acknowledged by the Council.

Honorary and Corresponding Members. At the last meeting of the Council Dr. Schmidt of Marburg, Dr. Frölich of Berlin, Professor Moissan and Dr. Maxime Cornu of Paris, Dr. George Watt, C.I.E., of Calcutta, and Professor Whitla of Belfast, were elected Honorary Members of the Society; and Dr. Keir Cross of Zemba, Central Africa, Dr. Greshoff of Haarlem, and Mr. R. T. Baker of Sydney were elected Corresponding Members.

Parliamentary. The efforts of the Council to widen the basis of membership of the Society, so as to include all registered persons, were during the year crowned with success by the passing of the Pharmacy Acts Amendment Act, which received the Royal Assent and became law in July last. By virtue of that Act all registered persons are now eligible to become members of the Society, and if elected, to serve upon the Council. The procedure of the Council elections is also changed by the new Statute, seven members retiring annually by rotation instead of seven by rotation and seven by lot, as prescribed by the Charter of Incorporation. This change in the constitution of the Society naturally involved the making of new bye-laws to effect the conversion of subscribers known as "Associates in Business" into members, and a very large amount of detail work was necessary before complete transformation could be achieved. New bye-laws were eventually approved by the Privy Council, and it became possible to admit as members on December 7 the whole of the 1755 supporters of the Society then upon the list of "Associates in Business." Since that time more than 2000 names have been added to the roll of members.

The Council has further to record that in June it became necessary to take energetic steps to defend the interests of chemists and druggists in regard to proposed legislation dealing with the sale of poisonous substances. A Bill was introduced into the House of Lords by the Lord President of the Council which not only ignored, but practically destroyed the salutary principles embodied in the Pharmacy Act, 1868. The Bill passed rapidly through the House of Lords, and the Council, with the help of the Society's local secretaries, made strong representations to the Government and to the House of Commons against the measure, and prepared to offer the most strenuous opposition to its further progress. In the result these efforts had the desired effect, and the Poisonous Substances Bill was withdrawn without having been submitted to the lower House. The loyal support and prompt action of the local officers and members of the Society constituted a gratifying feature of the session, and the Council gratefully acknowledges the services then rendered.

GENERAL FUND.

REVENUE ACCOUNT, 1898.

EXPENDITURE.

	£	s.	d.	£	s.	d.
To Annuities						500 0 0
Carriage of Books and Parcels						16 19 2
Certificates of Death						18 7 6
Examinations:—	*England and Wales.*			*Scotland.*		
Minor and Major:—						
Fees to Examiners and Travelling Expenses	1784	18	4	720	17	6
Refreshments	99	4	8	33	12	9
Apparatus, Drugs, Chemicals, Printing, and sundry charges	368	18	2	46	18	1
	2253	1	2	801	8	4
England and Wales.				2253	1	2
First Examination:—				3054	9	6
Fees to Superintendents, Hire of Rooms, and other charges	323	15	5			
Fees to College of Preceptors	175	5	0	499	0	5
						3553 9 11
Gas, Water, Coal, Cleaning Materials, etc						328 7 6
House Servants—Wages						292 5 8
Journal: Balance of account						2252 3 10
Law Costs						706 2 11
Library:—Librarian's Salary				275	0	0
Purchase and Binding of Books				87	19	1
Library Association Meeting				10	10	0
						373 9 1
Museum:—						
Curator's Salary				400	0	0
Assistant's Wages and Sundry Expenses for Bottles, etc.				100	16	4
Attending Museums Association Meeting				10	10	0
						511 6 4
North British Branch:—						
Assistant-Secretary—Salary				250	0	0
Taxes and Insurance				59	15	5
Members of Executive—Travelling Expenses, etc.				46	13	5
Fuel, Light, Water, Cleaning, Service, and Miscellaneous Expenses				452	16	9
						809 5 7
Evening and other Meetings						46 16 9
Postage:—General				245	19	3
Journal				797	5	9
						1043 5 0
Register—Balance of Account						1 9
Rent, Taxes, and Insurance						741 17 9
Premium on Leasehold Redemption Policies						128 2 6
Repairs and Alterations						565 17 7
Salaries:—Secretary and Registrar, and Clerks						1735 16 0
School of Pharmacy:—						
Stipends of Professors and Share of Fees				1399	0	
Lecturer, Assistant Lecturer and Demonstrators, and Wages of Porters				597	2	4
Apparatus, Chemicals, Specimens for Lecture Classes, Prize Medals, Certificates, and printing and posting prospectuses				449	12	3
						2445 16 7
Stationery, Engraving, Printing and Office Expenses						183 12 4
Expenses in connection with the Pharmacy Act, 1898						215 0 0
Calendar						79 1 2
Sundries						13 5 7
Travelling Expenses—Council and Committees						480 11 2
Refreshments for Council						41 8 2
London and Westminster Bank—Interest on Advance						38 3 2
						£17,120 13 0

INCOME.

	£	s.	d.	£	s.	d.
By Examination Fees:—						
1512 First Examination	2665	7	0			
1708 Minor ,,	6649	10	0			
111 Major ,,	336	1	0			
	9650	18	0			
Restoration Fees	22	1	0			
				9672	19	0
Interest on Investments:—						
Ground Rents	149	16	8			
Rent of 15, Bloomsbury Square	187	10	8			
				337	7	4
School Fees				1467	5	8
Subscriptions:—						
1263 Members, Pharmaceutical Chemists	1326	3	0			
518 ,, Chemists and Druggists	543	18	0			
1743 Associates in Business	1830	3	0			
1003 Associates	526	11	6			
864 Students	453	12	0			
Life Subscriptions	115	10	0			
	4795	17	6			
Fees paid upon Restoration to the Society	6	15	0			
				4802	12	6
				16,280	4	6
Balance Transferred from Accumulated Funds				840	8	6
				£17,120	13	0

BALANCE SHEET, DECEMBER 31, 1898.

LIABILITIES.

	£	s.	d.	£	s.	d.
To Loan—London and Westminster Bank				1500	0	0
Sundry Creditors				2031	7	2
Examination Fees in Advance				2035	5	0
School Fees in Advance				951	13	4
Cash—Due to Treasurer				33	7	9
Accumulated Fund as on December 31, 1897	33264	10	8			
Deduct Balance of Revenue Account as above	840	8	6			
				32424	2	2
				£38,975	15	5

ASSETS.

	£	s.	d.	£	s.	d.
By Freehold Ground Rents at:—						
Paddington Green at cost	5551	5	6			
House in Edinburgh ,,	1931	10	0			
do. Additional Building ,,	3111	4	9			
*Leasehold Premises:—						
Galen Place ,,	10606	10	2			
15 and 16, Bloomsbury Square ,,	9527	5	3			
17, Bloomsbury Square and 72 and 73, Great Russell Street, valued at	5000	0	0			
				25727	15	8
Sundry Debtors				2901	10	8
Cash:—						
London and Westminster Bank	250	14	0			
Chairman of Executive in Scotland	95	15	1			
				346	9	1
				£38,975	15	5

The above assets are exclusive of a Museum and a Library, as well as Furniture and Fittings, in London and Edinburgh. The copyright of the PHARMACEUTICAL JOURNAL *is also not included.*

* NOTE.—*The leases of these properties are insured under a Capital Redemption Fund for £25,000.*

BENEVOLENT FUND.

REVENUE ACCOUNT, 1898.

EXPENDITURE.

	£	s.	d.
To Annuities	2065	0	0
Grants	702	16	0
Interest on Loan from the Orphan Fund	35	0	0
Stationery, Printing, and Postage	46	12	8
Surveyor's Fees	10	10	0
	2859	18	8
Balance transferred to Accumulated Funds	449	16	4
	£3309	15	0

INCOME.

	£	s.	d.
By Subscriptions	1795	3	0
Ground Rents	1013	2	0
Dividends	182	15	0
Donations	318	15	8
	£3309	15	0

BALANCE SHEET, DECEMBER 31, 1898.

LIABILITIES.

	£	s.	d.	£	s.	d.
To Loan :—						
Orphan Fund				1000	0	0
Sundry Creditors				30	15	2
				1030	15	2
Accumulated Funds as per Balance Sheet, December 31, 1897	33741	16	5			
Add Balance of Revenue Account	449	16	4			
				34191	12	9
				£35,222	7	11

ASSETS.

	£	s.	d.	£	s.
By Freehold Ground Rents at :—					
Strawberry Hill, at cost	1020	12	6		
Battersea ,,	12213	0	0		
Broomwood Park ,,	7454	7	10		
West Kensington ,,	5809	2	1		
				26497	2	5
£6050 2¾ per cent Consols ,,				6692	15	0
St. Paul, Minneapolis, and Manitoba Railway 4 per Cent. Bond				100	0	0
Chemists' Aerated and Mineral Waters Association, Limited, fully-paid up £1 Shares				100	0	0
				33389	17	5
Sundry Debtors				358	17	11
Annuities paid in Advance				541	5	0
Cash :—						
London and Westminster Bank—Donation Account	597	18	5			
,, ,, ,, Current Account	326	16	11			
Treasurer ,,	7	12	3			
				932	7	7
				£35,222	7	11

ORPHAN FUND.

(Founded by Thomas Hyde Hills, 1891.)

	£	s.	d.		£	s.	d.
Balance, Jan. 1st, 1898 :—London and Westminster Bank	158	15	3	London Orphan Asylum (Minett)	12	10	0
Subscriptions	18	5	6	Balance, December 31st, 1898 :—London and Westminster Bank	209	5	9
Interest on Invested Capital	9	15	0				
Interest on £1000 lent to the Benevolent Fund	35	0	0				
	£221	15	9		£221	15	9

The Capital Account of this Fund consists of :—

Two and three-quarters per cent. Consols	£355	0	0
Amount lent to the Benevolent Fund	1000	0	0

AUDITORS' REPORT,

We, the undersigned Auditors, have examined the foregoing accounts of the Pharmaceutical Society of Great Britain, and find them correct. We have inspected the Deeds relating to the House Property and Ground Rents, and also find that there were standing to the account of the Society at the Bank of England, and in the hands of the Society's Bankers, on December 31, 1898, the several securities named in the Balance Sheet of the respective accounts.

In addition to the above, the following Securities were standing to the credit of the Society on December 31st, 1898 :—

		£	s.	d.
Pereira Memorial Fund	Two and three-quarters per cent. Consols	100	0	0
Bell Memorial Fund	Two and three-quarters per cent. Consols	2050	0	0
Hanbury Memorial Fund	Two and three-quarters per cent. Consols	400	0	0
Redwood Memorial Fund	Great Indian Peninsula Railway Stock	400	0	0
Hills Prize Fund	Russian Bonds	316	8	0
Manchester Pharmaceutical Association Scholarship Fund	Manchester Ship Canal Co. 4 per cent. Debentures 700 0 0; Two and three-quarters per cent. Consols 52 4 6	752	4	6
John Cripps Legacy Account	India 3½ per cent. Stock	1702	10	0
The Burroughs Scholarship	4 per cent. New Zealand Consolidated Stock	720	0	0

E. N. BUTT,
F. HARWOOD LESCHER,
S. LLOYD STACEY,
CHARLES UMNEY,
Auditors.

March 28, 1899.

Poison Regulations. At the Council meeting in December a requisition signed by thirty members was presented, calling upon the Council to convene a special general meeting for the purpose of considering and, if thought fit, of adopting regulations for keeping and dispensing of poisons in accordance with the provisions set forth in Section 1 of the Pharmacy Act, 1868. A meeting was accordingly convened for January 11, and the members then present adopted as compulsory regulations the recommendations which were passed by the Council in 1871, and which have been since published annually in the Society's Calendar. The Regulations received the approval of the Privy Council in February, and now form part of the Pharmacy Act, 1868. Notification of this fact has been officially announced in the *Pharmaceutical Journal*, and a copy of the Regulations has been posted to every person on the Register.

The Companies Question. The exertions of the Council to secure an amendment of the law under which incorporated companies are permitted to evade the Pharmacy Acts have continued without intermission for the past four years; but it is to be regretted that no successful issue can be reported. During the passage of the Pharmacy Acts Amendment Bill through the House of Lords the Lord Chancellor and the late Lord Herschell made public statements indicating that in their opinion companies should be amenable in the same manner as natural persons to the provisions of the Pharmacy Acts. The Lord Chancellor thought that this object should be accomplished by a suitable addition to the Society's Bill then before the House, and a clause was drafted under his direction and brought forward by him for insertion into the Bill whilst in Committee. The clause was, however, considered unsatisfactory by the Council, inasmuch as it did not put an incorporated company on the same footing as a natural person, and, moreover, was powerless to afford the public protection which the Lord Chancellor himself thought to be essential. The Council represented these considerations to His Lordship, who subsequently withdrew the clause. Shortly afterwards the Council was invited to send to the Lord Chancellor suggestions with a view to possible legislation on the subject during this session. After careful consideration of the views expressed by the various pharmaceutical associations throughout the country, the Council formulated and forwarded the "Suggestions for a Draft Pharmacy Bill," which were published in the *Pharmaceutical Journal* of Feb. 4, 1899. The Lord Chancellor has not seen his way to adopt the suggestions of the Council, but has introduced into the House of Lords a Pharmacy Bill which proposes to confer upon companies the right of carrying on the business and of using the titles of pharmaceutical chemists and chemists and druggists subject to the employment of a registered person. This action is somewhat inexplicable in the light of the statements made by His Lordship last session, and in face of the Companies (Medical Profession) Bill simultaneously introduced into the House of Lords with the Pharmacy Bill, and the Council has no other course but to offer active opposition to the further progress of the measure. With that object the Parliamentary Watch Committee has been authorised to act in the interests of chemists and druggists.

Pharmacopœia Revision. The General Medical Council having invited the co-operation of the Society in respect to future revision of the British Pharmacopœia, Mr. Charles Ekin and Dr. W. Inglis Clark have been appointed to represent the Society at the meetings of a Conference in regard thereto convened by the General Medical Council.

Chelsea Physic Garden. The Council has to record that the Charity Commission, upon whom devolved the duty of drawing up a scheme for the administration of this historic garden, has included the Pharmaceutical Society among the bodies to be represented upon the committee of management. Mr. Michael Carteighe has been appointed the representative of the Society.

Scholarships. Several minor changes have been made in the regulations relating to the Scholarships offered by the Society. The date of competition for the Redwood Scholarship and the Burroughs Scholarship has been altered from July to April, and a similar alteration made in the case of the Percira Medal competition. With a view to a better definition of the required standard in the science subjects of the Bell and Manchester Scholarships the words "an elementary knowledge of botany, chemistry, and pharmacy," hitherto appearing in the Regulations, have been roplaced by the following:—

> "Botany, chemistry, and pharmacy based upon an elementary knowledge of the principal chemicals, drugs, and processes of the British Pharmacopœia, such as a student may reasonably be expected to have acquired during his apprenticeship."

Legal. The number of infringement cases reported to the Registrar and investigated during 1898 was 362. Contested cases were heard at Hull, Portsmouth, Haslingden, Leicester, Manchester, Rochdale, Bow, Luton, Southwark, Bacup, Lambeth, Grimsby, Oldham, Llanrwst, Whitechapel, Westminster, and Stonehouse, and in each case judgment was given for the Society. In one case proceedings were instituted against the manufacturers of an arsenical weed killer for selling a tin of their preparation through the post and failing to comply with the regulations laid down by Section 17 of the Pharmacy Act, 1868. A full bench of magistrates were unanimously of opinion that there should be a conviction, and inflicted the full penalty of £5 with costs.

Benevolent Fund. The financial position of the Fund is set out in detail in the statement submitted with this report. Annual subscriptions show a slight diminution compared with the amount subscribed in 1897, which, owing to the decennial festival, was a somewhat exceptional year. The total amount expended in the relief of necessitous cases and in the payment of annuities was £2767. There are now forty-four annuitants on the Fund, the annual charge involved on that account being £2120.

Obituary. The following Honorary Members have died during the year:—Lord Playfair; Dr. De Vrij; Brigade-Surgeon Aitchison, and J. Bosisto, C.M.G. The deaths also have to be recorded of A. Stephen Hill and John Cripps, both of whom left legacies to the Benevolent Fund; A. Kinninmont, a former member of the Board of Examiners in Scotland; J. Cornelius, formerly Divisional Secretary for East St. Pancras; H. Shelley, a former Local Secretary for Twickenham; and the following local and divisional secretaries:—H. W. Seeley (Halifax), C. M. K. Bourne (West Bromwich), W. Duncan (Rothesay), and T. W. Horsley (North Paddington).

Potassium Chlorate for Burns.—The immediate application of a cold saturated solution of potassium chlorate has an excellent effect on burns, relieving the pain rapidly. Superficial burns may be permanently dressed with a solution of the salt; but deeper wounds should be treated with full antiseptic precautions.—*Semaine Med.*

THE VANILLA BEAN IN MEXICO.

The State of Vera Cruz has been considered the home of the vanilla, but recent developments show that vanilla can be cultivated in the State of Tobasco and on the Isthmus of Tehuantepec. The true home of the vanilla, where it flourishes the best in its wild state, is a narrow strip about 30 miles wide, 5 miles from the coast, and 90 miles long. The upper end of this strip is about 50 miles south of Tampico, and extends along the coast 90 miles towards the city of Vera Cruz, the bottoms along the Tuxpan, Casonez, and Nautla rivers, and the creeks contiguous, constitute the richer parts. Here the cultivated varieties yield most without artificial fecundation, either on account of the number of wild bees in the locality or by self-pollination, which some claim as impossible.

The United States Consul at Tuxpan says that artificial fecundation must be practised in order to produce the beans in commercial quantities. The vanilla plant is a vine of a bright green colour, with a smooth, waxy, transparent bark. It has a thick, waxy-looking leaf, light green in colour, 6 to 9 inches long, 1½ to 2 inches wide, and sharply pointed. The vine reaches out tendrils which cling tightly to its tree support, but do not, as some believe, draw nourishment from the tree. The best time to set out the vines, or rather cuttings, is in April or May. The cuttings are the vines divided into lengths, usually 2½ to 3 feet long. Some of these can be cut in two according to the number of joints. Two to three joints are sufficient to put under the ground, with the same number of joints above ground. The joints are easy to propagate, in fact they are hard to kill if kept from being bruised. A cutting can be kept in the house on a dry shelf, and will live for months with scarcely any apparent change. In making a vanilla plantation much depends upon the selection of location. The first thing is to have the plantation where pilfering of the beans while ripening can be prevented. A vanilla plantation need not be large; a few acres, with care and proper fecundation, will soon produce excellent results from a monetary point of view. Patient care and attention at the proper time is the chief secret of success. The vine requires rich soil, heat, ventilation, shade, and moisture. Rich pockets of land along the creeks and river bottoms are best. A profusion of wild vines of all kinds growing into a jungle, with abundant loose soil affording ventilation at the roots, is the best proof of the adaptability of the land. The land should be free from sand on account of drought, and free from clay, which would cause the vines to rot during the rainy season. There should be plenty of small trees, at the feet of which the vines can be planted.

Trees which have smooth bark, and which never shed their bark or leaves, and grow to be no longer than 2 to 4 inches in diameter and from 7 to 10 feet high, are best for this purpose. Usually a variety of such grow on all wild lands, and any of them are good if the trunk of the tree be smooth, with plenty of sap. A small orange tree affords a good trunk for vanilla to grow to. If, while clearing the land, there be not enough of such trees found already growing, to plant the desired number of vines (there should be from 1500 to 2000 vines to the acre) enough should be planted, selecting the kinds that make the most rapid growth, which exist in abundance, and are destroyed by the thousands in nearly every new clearing of land. The ground should be kept clean from weeds. All undergrowth should be thrown around the vines to decay, and serve as manure for the roots. The ground around the roots should not be disturbed. One or two vines should be planted to each tree, and tied at first to the trunk with some flat, flexible band, such as strips of cocoanut leaves or plaintain fibre. Round cord should not be used, as it is liable to cut and injure the green, succulent stem of the vine. Live stock are never permitted on a vanilla plantation. The stems and roots of the vines are disturbed as little as possible. The vine needs no cutting or pruning, and all other wild vines are cut out and kept from choking the vanilla vines. The trees should be topped to prevent too high a growth, so that the flowers can be reached from the ground. Light and ventilation beneath, shade from the sun above, rest, and plenty of moisture—but free from standing surface water—are the prime requisites for the growth of vanilla vines. One peculiarity of the vanilla vine is that, after three or four years' planting, the stem will rot off at the roots, and continue to rot three to four feet up the vine, while the top looks green and flourishing. In the meantime, from above where it is going to rot, it shoots out fine little rootlets like threads, and continues them to the ground. So delicate are these threads running along the trunk of the tree, and so prominent the rotted-off end of the stem, that it gives the vine the appearance of living independent of the earth, thus giving rise to the theory that it is an air plant. It will sustain itself in a severed state, but to make material growth and fruitage it must connect itself with mother earth. The new vine will commence bearing the third year from planting, and full crops may be expected the fifth year.

A vine will bear from fifteen to forty-five beans a year. Some vines have been known to produce as much as sixty-five beans at one time. Twenty beans to a vine is a good average. Rarely do those who grow the beans cure and market their crops. Some buy the green beans and make a business of curing and exporting them. Consul Jones says that judging from the way they all get rich at the business, and the difference between the price at which they buy the green bean and the price at which they sell the cured, there must be more profit in the curing than in the growing. Still, in view of the price of vanilla, and the demand for it all over the world, there are large profits for both parties. Wild lands suitable for vanilla can be bought for from £1 to £2 per acre. There are vanilla-producing plantations in the vicinity of Papantla that could not be bought for £100 per acre. Various estimates have been furnished as to the cost per acre of converting wild lands into vanilla-producing plantations. Approximately, £17 an acre is correct, which is very moderate for so profitable a plant. The greater part of the vanilla in the district of Tuxpan is grown about Papantla, much of which is exported from Vera Cruz, it being easier to reach Vera Cruz by water than Tuxpan by land. The two busy seasons of the year are during the pollination months—March, April, and May, and the gathering months—November, December, and part of January. During the balance of the year the plantation should have absolute rest, other than keeping down the weeds and undergrowth. Many of the beans are gathered in October, sometimes before they reach their growth, by those who see an opportunity of gathering them unknown to the owner, or by the owner, for fear of losing them, because he has not his vines where he can watch them. Beans gathered too soon are woody and inferior in quality, lacking the oil that furnishes the flavour. Good ripe beans lose but little of their weight while curing; 5 lbs. of green beans will weigh 4½ lbs. when cured. The quality and flavour are increased by allowing them to mature and by the proper curing. The curing is principally done by Spaniards who have followed this business. The process adopted is slow and laborious. The secret is to evaporate the water while retaining the oil, and to take care not to injure the flower. Vanilla is principally exported from Mexico to the United States—about £400,000 worth annually.—*Journal of the Society of Arts.*

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—X.

Class Pisces.

Fishes are divided into four sub classes according to the structure of the external and internal skeleton, and the form and arrangement of the fins. The most important of these sub-classes is the Teleostomi, which includes by far the most well-known forms and to which the sturgeon and cod both belong. The other three are Elasmobranchii (sharks), Holocephali (cat-fishes), and Dipnoi (mud-fishes). The integument or exoskeleton of fishes is dermal in its origin and not merely derived from the cuticle like the molluscan shell and the chitinous coat of insects. It takes the form of overlapping scales and spines. In the sharks it is a closely set covering of very minute spines of a tooth-like structure and all pointing backwards; these are "placoid" scales. In the cod (natural order, Teleostei) the scales are even over-lapping plates, or "cycloid" scales, and in other forms, as the perch, the free edge is produced into minute ridges or spines; this form is known as "ctenoid." Acipenser (natural order, Chondrostei) is covered by several rows of hard plates, called "scutes," each bearing a spine. Besides the scales, the radial supporting structure of the fins are also dermal, and therefore part of the exoskeleton.

In fishes the notochord is replaced by a spinal column, either almost entirely cartilaginous as in the shark, or partly or completely ossified as in the cod. It ends anteriorally in a skull, which consists of a cranium or brain-case, upper and lower jaws, and behind these hyoid and branchial arches which support the gills. It produces lateral limbs, which are connected with the fin rays The column, both in cartilaginous and bony fishes, is vertebrated, but the vertebræ differ somewhat in structure.

The respiratory organs are paired gills opening externally at apertures immediately behind the head and internally into the pharynx. In the process of respiration water passes through the mouth and pharynx into the gill-chamber, where it supplies oxygen to the highly vascular filaments of the gill and passes out again at the external gill slits. In all the higher fishes the external gill slits are protected by a gill cover or "operculum," but this in the shark is absent. In Teleostomi there is developed another outgrowth of the pharynx, called the air bladder, a thin-walled bag, which acts as a float and also as an additional respiratory organ. Its more common position is on the dorsal side of the alimentary canal, but in some forms it has a ventral position. In Acipenser it remains connected with the pharynx by a short "pneumatic duct," which in Gadus has disappeared, and the bladder here becomes a closed sac. The inner wall of the air bladder has the power of absorbing or secreting gas and so regulating the pressure on the fish as it ascends or descends, and in many forms it is connected with the hearing organ, and in this way the animal is made aware of the hydrostatic condition.

The fins are organs of support, protection, progression, and attraction. A typical fish has one or more dorsal and ventral fins situated in the median line, a caudal or tail fin, all of which are unpaired, and two pairs of lateral fins, the pectoral pair being situated immediately behind the gills, and the pelvic pair generally in the abdominal region. The form and number of the fins vary considerably in the different groups. Acipenser has one dorsal and one ventral fin, and the pelvic fins are abdominal. In Gadus there are three dorsal and two ventral fins, and the pelvics are in the region of the throat. In flat fishes like the sole, the dorsal and ventral fins form a continuous structure.

EXPLANATORY NOTES ON THE B.P. 1898.

Paraffin.—The hard, liquid, and soft paraffins used in pharmacy consist chiefly of mixtures of the higher members of the paraffin series of hydrocarbons. Members of the unsaturated ethylene and acetylene series are also present in smaller quantities and some paraffin products, particularly those derived from Russian oil, contain notable quantities of other hydrocarbons related to the benzene series. The crude natural materials, which comprise the sources from which the refined products are commercially prepared, are generally believed to result from the decomposition of the fossil remains of marine animals belonging to a former geological epoch. This decomposition is probably effected under great pressure, but not a high temperature. In favour of this view it may be mentioned that salt water often flows out in association with mineral earth oils, and that animal remains are usually found at the place of origin of mineral oil. In addition to the earth oils and waxes, which are found ready-formed, bituminous shale (a kind of sedimentary rock readily splitting into layers, and containing fossil remains) is an important source of paraffinoid hydrocarbons, as will be mentioned under Paraffinum Durum. It is also noteworthy that fish oils when destructively distilled under pressure, yield distillates containing a considerable proportion of paraffin hydrocarbons.

Paraffinum Durum.—The chief source of this is the crude tarry oil obtained by the destructive distillation of shale. This is usually redistilled, and leaves in the retort coke and asphalt. The distillate is then shaken with sulphuric acid to remove basic bodies and afterwards with caustic soda solution to remove acid bodies and phenols. The washed product is then redistilled and yields successively mineral naphtha, various kinds of burning and lubricating oils, and finally a thick oil which deposits paraffin wax on cooling. This is separated by pressure and the crude wax dissolved in naphtha and again crystallised by cooling and pressure. The wax is then melted and filtered through animal charcoal. The melting point of the hard paraffin will depend upon the temperature at which the various distillations have been conducted. As a rule, the higher the temperature the lower the melting point of the hard paraffin, because at high temperatures the hydrocarbons of high molecular weight are broken down into two or more hydrocarbons of smaller molecular weight. The melting point required by the Pharmacopœia ranges from 54·4° C. to 57·2° C. A product of lower melting point is often used for imbedding substances before cutting microscopical sections. Ozokerite, a naturally occurring mineral wax found in Galicia, when purified, yields a product of higher melting point, and is chiefly used for making candles. It is remarkable that shale oil yields hardly any fraction containing bodies of the soft paraffin or vaselin class.

Paraffinum Liquidum.—This is a petroleum product contained in the later fractions obtained in distilling the crude oil. Some varieties of petroleum contain considerable quantities of sulphur compounds which if present in the crude oil will be found in the various fractions. To detect them the liquid paraffin is treated with caustic soda in which lead oxide is dissolved. The soda extracts the sulphur compounds from the oil, decomposes them with formation of sodium sulphide, and this reacts with the lead to form a black precipitate or colouration due to lead sulphide. The sp. gr. given in the Pharmacopœia is said to be rather higher than that observed for the purest commercial products. Most of these will be found to be about 0·882.

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PHARMACEUTICAL PRELIMINARY EDUCATION.

The report of the Joint Committee of the Boards of Examiners on the examinations to be recognised in lieu of the Pharmaceutical Society's preliminary examination was presented at the meeting of the Council on Wednesday and is printed in full in this week's Journal (see p. 405). As is well known, the only subjects with which pharmaceutical students are now expected to be familiar, prior to taking up the study of the special subjects of the qualifying examination, are English, Latin, and Arithmetic, while the standard of attainment required in those subjects for many years past has been sufficiently low to merit the contempt of any steady-working Board School boy or girl. But a modification of the Society's Bye-laws was effected two years ago and, as a result, after August, 1900, registration as a pharmaceutical student must be preceded by the passing of an examination—held by an approved examining body—in English, Latin, a Modern Foreign Language, Arithmetic, Algebra, and Euclid.

The work for which the Joint Committee was appointed was to determine what the standard should be in the different subjects, and what certificates by approved examining bodies should be recognised by the Council of the Society. The list recommended by the Committee for adoption is printed at p. 407, but it is to be observed that the whole of the six subjects mentioned above must be included in the subjects for which the certificates are granted, and they must have been passed at not more than two examinations of the same examining body, except in the case of certificates which are now accepted by the Scotch Universities for registration of medical students. Such certificates, we understand, are accepted for one subject at a time and are not necessarily from one examining authority, so that the practical effect of this exemption is to require much less from Scotch than from English and Welsh students. But it has been contended that what is good enough for the medical profession in Scotland ought to be good enough for pharmacy, and that contention has, wisely or unwisely, prevailed. It cannot be denied, however, that the system of passing preliminary examinations on a kind of monthly instalment principle is a curious commentary on the higher standard of elementary education which is supposed—with far from conclusive evidence—to prevail generally in Scotland.

The standard adopted, on the recommendation of the Joint Committee, is that of the "Junior" Examinations (*i.e.*, those intended for students under sixteen years of age), which have hitherto been accepted by the General Medical Council as satisfying its requirements. And although that Council now proposes to increase its standard, the Joint Committee is of opinion that it would not be advisable to adopt a higher standard in the case of pharmaceutical students, on account of the large number of rejections that might be anticipated. For the present, therefore, the minimum requirements in pharmacy will correspond with those now existing for the medical profession. The latter, it is stated, involve the rejection of two-thirds of the candidates who present themselves, whereas the present pharmaceutical preliminary examination is passed by half the candidates, so that an immediate effect of the raised standard will probably be a greater thinning out than formerly. That, however, will be a distinct advantage, the more especially as it may be expected to lead to many unfit individuals being deterred at the very outset from entering upon a pharmaceutical career. Regarding the matter from that point of view, it is to be hoped that, when the standard of the medical preliminary is raised, the pharmaceutical requirements may be extended also. And that, we believe, is not altogether unlikely.

THE COUNCIL MEETING.

The usually full agenda paper of the May Council Meeting was last Wednesday rendered more than ordinarily interesting by the prospect of some special communication of proceedings relating to the Lord Chancellor's Pharmacy Bill. But if any undue expectation of that kind had been entertained, the report of the Law and Parliamentary Committee was a corrective, as it merely gave expression to the confidence placed in the capability of the Watch Committee to carry out the duty entrusted to it as occasion required, and to the conviction that nothing necessary for the common interests of the craft would be neglected. Though that unsensational announcement may perhaps carry disappointment into some quarters, coupled with the President's remark that he anticipated members of the Society would show the same degree of confidence in the Council, unless they were so unfortunate as to fall under the misleading influence of irresponsible and self-constituted advisers, it should suffice to remind those who may be tempted in that way, that the members of Council, as entrusted by general suffrage with the power of representative action as the executive body, are severally and sufficiently conscious of their responsibility and of their obligations, to be able to act without the aid of extraneous admonition or guidance, so as to arrive at agreement on the line of action to be taken for securing the unanimity which is regarded as such a "deadly" affliction by journalistic enterprise.

After the minutes of the previous meeting had been confirmed, the President referred with regret to the absence of the Vice-President and Mr. Bottle, both of whom were prevented from attending by illness. Mr. Storrar was also unable to be present.

The additions to the ranks of the Society exceeded 300 members, together with an unusually large number of restorations, and twenty-eight student-associates.

Apotheker Max Frölich, Professor E. Schmidt, Professor Moissan, Dr. Maxime Cornu, Dr. George Watt, and Professor Whitla, M.D., were elected honorary members of the Society, on the motion of the President, seconded by Mr. Martindale, as the acting Vice-President, who, together with Dr. Symes, spoke of the eminent services rendered to the Society by the distinguished individuals nominated by the Council.

Dr. Greshoff, Dr. Keir Cross, and Mr. R. T. Baker were elected corresponding members.

The President drew attention to the fact that the report of the Executive of the North British Branch of the Society has been received, and on his motion it was adopted and ordered to be entered in the minutes, mention being made that the somewhat lengthy report was very satisfactory, as showing the care and attention bestowed upon details of the Society's work, and in looking after its interests in Scotland, for which the Council was much obliged, especially to the Chairman, Mr. Ewing, and to the indefatigable Assistant-Secretary. These opinions were heartily endorsed by Mr. Carteighe in seconding the motion.

An important part of the business was the presentation of the report (see p. 405) drawn up by the Joint Committee of the Society's Boards of Examiners on the alteration of the preliminary examination that will come into operation, under the Bye-laws, after August next year. The recommendations made in the report were formally adopted on the motion of the President, who drew attention especially to the circumstance that though the expectations entertained had not yet been fully realised, and though it has been found necessary to accept certificates of examination passed in two parts in accordance with the practice of the Scottish Universities in reference to the case of medical students, the change might be regarded as one of progress and likely to be a means of furnishing evidence of a higher degree of general education. In any case he showed that the acceptance of those certificates would throw on the Scottish Universities the onus of saying that the bearers of those certificates had satisfied all requirements and were fit to be accepted for registration.

Mr. Martindale, in seconding the motion, expressed satisfaction that some advance had been made in regard to the very important subject that has been so long under consideration, and was glad that a compromise has been made which paved the way for further improvement.

Dr. Symes and Mr. Atkins expressed their satisfaction at this endeavour to improve the preliminary examination and to reduce the percentage of failures in the qualifying examination, and Mr. Carteighe urged the desirability of inducing boys intended for the occupation of pharmacy to go for senior certificates as being quite within their capacity on leaving school and far the most advantageous in the future.

The report and recommendations of the Finance Committee were formally adopted, the President remarking that the payments were usual though somewhat large in amount.

On the recommendation of the Benevolent Fund Committee, five grants amounting to £56 were ordered to be paid. Mr. Atkins, in moving the adoption of the report, mentioned that one of the recipients became an Associate of the Society in 1842, and another was the widow of a former prizeman in the Society's School. He also expressed obligation to local and divisional secretaries for valuable assistance rendered in the investigation of cases coming before the Committee, which sometimes give rise to much perplexity.

The report of the Library, etc , Committee was not less comprehensive than usual : among the donations was a portrait of the late Charles Dinneford, one of the founders of the Society, presented by Mr. Carteighe : in accordance with the recommendation of Committee, Mr. Garle was appointed junior assistant demonstrator, and Mr. Garsed, of Elland, was appointed Burroughs Scholar for the session 1899-1900.

In accordance with the nomination of the Executive of the North British Branch of the Society, Mr. Peter Boa was appointed a member of the Scottish Board of Examiners. Messrs. Lucas and Pinches were appointed to conduct the examination of candidates for the Jacob Bell Scholarships and the Manchester Scholarship.

The main feature of the report presented by the Law and Parliamentary Committee has already been mentioned, and all that remains to be noticed is that the President, in moving the adoption of the report, said he was not at all depressed by the present position of affairs ; but regarded the stirring up, caused by recent events, as likely to lead to good results. Though he could not forecast the precise mode in which that might be effected, he did not hesitate to say that for a long time past matters had been getting worse and worse, and that the sooner they were brought to some definite settlement the better. On behalf of the Watch Committee he could offer his assurance that everything possible for the protection of the interests of all qualified persons would be done. The motion was formally seconded by Mr. Harrington and carried unanimously.

The President, in referring to an important letter (see *ante* p. 105) from the President of the General Medical Council as to arrangements to be made for examination of criticisms and collection of information requisite for the production of the next British Pharmacopœia, and the suggestion that representatives of the Pharmaceutical Societies of Great Britain and Ireland should be appointed to co-operate on that work, said he was glad such an arrangement had been found practicable. On his motion, Mr. Charles Ekin and Dr. Inglis Clark were appointed to represent the Society at the Pharmacopœia Conference to be convened by the General Medical Council. In seconding the motion, Mr. Carteighe spoke of the arrangement as the beginning of a *bonâ fide* co-operation of representatives of medicine and pharmacy in the construction of the Pharmacopœia, such as had been for many years desired.

The report of the General Purposes Committee recommended that the Pereira Medal should be awarded to Mr. Herbert Payne and second prize to Miss Frances Magan, and that portion of the report was adopted, a vote of thanks being passed to Professors Farmer and Millar Thompson and Mr. Wright for conducting the examinations.

The President read a number of communications from local associations at Swansea, Cambridge, Edinburgh, Aberdeen, Burnley, Manchester, and Birmingham, forwarding resolutions passed at meetings and expressing approval of the action taken by the Council as to opposition of the Lord Chancellor's Pharmacy Bill. Most of these resolutions have already been published in the Journal, and the President, in moving that they be referred to the Law and Parliamentary Committee for consideration, spoke of them generally as giving satisfactory indications of the interest taken in pharmaceutical affairs throughout the country, as well as of a spirit of loyalty to the Council as the representative body.

After consideration of the legal portion of the report special resolutions were passed authorising the Registrar, in conformity with the recommendations, to institute proceedings against various persons for infringement of the Pharmacy Acts.

The annual report (see p. 411) was adopted and ordered to be published.

ANNOTATIONS.

The Lord Chancellor's Pharmacy Bill is ably dissected by a medical practitioner whose letter to last week's *British Medical Journal* is reprinted at page 422. The memorandum to the Bill (see *ante*, p. 304) states that the object of the measure is to place a company in the same position as the executors or trustees of a deceased chemist, and, as Dr. Fielding-Ould points out, it is clearly only an extension of the so-called "Widow's Clause," which he correctly describes as a clause open to grave objections and the most obvious blot on the Pharmacy Act of 1868. It is interesting to note that Mr. W. A. Grace, on the pharmaceutical side, and Dr. Fielding-Ould, on the medical, both insist upon the necessity of personal qualification and personal responsibility. Those conditions cannot be guaranteed in the case of associations of unqualified persons, and it is matter for astonishment that the idea of absolutely surrendering the pharmacist's duties to such associations is gaining ground amongst registered chemists in Scotland. Mr. C. F. Henry (see p. 425) would allow limited liability companies to do all that registered chemists have spent much time, labour, and money in acquiring the privilege of doing, to the extent that the shops of such companies and the drug departments of stores would become as fully recognised as legitimate pharmacies as those owned and conducted by duly qualified persons. His audience appears to have been of a similar way of thinking, though Mr. Macpherson did point out the undesirability of conceding anything to companies, and in the end the meeting most illogically decided to oppose the Lord Chancellor's Bill. For, if company trading in pharmacy is to be recognised by registered chemists, why should the latter shy at that Bill? Even Scotchmen ought to be consistent on this point, if not logical, and do what they can to protect their titles and position as registered chemists rather than talk vaguely about bringing forward "reasonable proposals which Parliament, the public, chemists, and companies are likely to accept." Either the principle of proprietary qualification must be upheld in its integrity, or chemists must recognise individual qualification as being necessary only for obtaining employment by companies.

The Constitution of the Council of the Pharmaceutical Society was referred to at the same meeting in Edinburgh by a speaker who might have been expected to take the trouble to be sure of his facts. Mr. McDiarmid spoke of the desirability of having more north-country members upon the Council and of the alleged large preponderance of London opinion on that body. It is, of course, the sheerest nonsense to talk about London or any other part of the country as having special representatives on the Council. Every member of Council represents the whole of Great Britain, as the two Scotch members have good reason to know, for unless they received the votes of a very large number of English and Welsh voters they could not possibly secure seats. Moreover, one-third of the present members of Council come from the north country—Messrs. Bateson (Kendal), Harrison (Sunderland), Johnston (Aberdeen), Newsholme (Sheffield), Storrar (Kirkcaldy), Symes, (Liverpool), Young (Warrington). Another seven—Messrs. Allen, Carteighe, Harrington, Hills, Martindale, Savory, Warren—are located in or about the extensive district known to the rest of the world as London, whilst the remaining third—Messrs. Atkins (Salisbury), Bottle (Dover), Corder (Norwich), Cross (Shrewsbury), Grose (Swansea), Park (Plymouth), Southall (Birmingham)—come from the east, west, and south of England, Wales, and the Midlands. Above all other considerations, however, it is necessary to bear in mind that every member of the Council is elected by the members of the Society as a whole, and that neither London nor any other district of limited extent contains a sufficient number of voters to return anyone as a member of the Council in the face of strong opposition throughout the rest of the country. It is to be assumed, of course, that Mr. McDiarmid does not mean Scotland only when speaking of the "north country," and that he does not imagine the very small minority of members of the Society who happen to reside in Scotland should be allowed a preponderating voice in the management of the Society's affairs. That might be what some of our Scotch friends would consider desirable, but it would not be quite reasonable.

The Suggestion of Opposition to the Companies (Medical Profession) Bill by registered chemists—in the event of the latter not receiving justice at the hands of the Lord Chancellor and sympathetic support from the medical profession—appears to have had a curiously perturbing influence upon some of our readers, and raises a suspicion with regard to the relations between medical practitioners and chemists in some parts of the country. A system of commissions is understood to prevail in Scotland, for example, and the local correspondent in that country of the *Medical Press* even remarks that although the hands of the medical profession are probably somewhat cleaner in that respect than those of some of their neighbours, it is to be feared that dubious relations do sometimes exist between doctors and chemists. During the past week, he states, anonymous letters have appeared in the *Scotsman* newspaper, and there seems no reason to dispute their general accuracy. The writers, dispensing chemists, all tell the same tale. A "young" doctor is said to call and propose to the chemist that the latter is to dispense and to retain all the prescriptions of the doctor; that an account is to be kept of those, with the charges (which are to be in excess of the ordinary ones), and that the doctor is to get 30 to 40 per cent. of the profits of the "deal." "From the doctor's point of view," it is observed, "this may be all very well; but the reflection that occurs to one is that the chemist must be very confiding who supposes that even the whole custom of a doctor just starting in practice will prove a lucrative investment. Of course there are all grades of this sort of thing. One hears, on the one hand, of the chemist from whom it is difficult to get a regular account of your indebtedness; on the other, of the doctor who never dreams of taking any notice of his drug bills. But, so far as our experience goes, it does not seem to be very prevalent; we are sure that the vast majority of medical men, here as elsewhere, can honestly disavow all knowledge of such practices." And the same can doubtless be said of pharmacists, though the fact is, we fear, beyond question that a system of paying commissions to medical practitioners, on all medicines dispensed from their prescriptions, is not unknown to some registered chemists in the north.

The General Medical Council is working steadily in the direction of suppressing the practice of employing unqualified assistants, or assisting unqualified persons to practice, and important notices on the subject have recently been sent to registered dentists. Attention is therein specially directed to a resolution passed by the Council seven years ago, which stated that any registered dentist practising for gain, who knowingly and wilfully covers practice by an unqualified person, will be liable to be dealt with as having been guilty of infamous conduct in a professional respect, and to have his name erased from the Dentists' Register. Reference is also made to another resolution passed last December, warning registered medical practitioners

against assisting unqualified persons to perform operations in dental surgery. Offences of that kind are also liable to be dealt with as cases of infamous conduct. So far, the General Medical Council appears to have taken no steps with regard to the employment of unqualified persons as dispensers to medical practitioners, but that subject may doubtless be expected to receive attention in due course. Meanwhile, registered chemists will regret that similar disciplinary powers to those exercised by the General Medical Council are not possessed by the Council of the Pharmaceutical Society. As Mr. Rymer Young pithily put the matter last week, when a registered chemist has, after due inquiry, been judged by the Council to be guilty of infamous conduct in a professional respect, the Council should have power to order his name to be erased from the Register. Such a weapon would be a most potent means of preventing many of the discreditable actions that now tend to bring the craft into low repute.

THE FORTHCOMING COUNCIL ELECTION is naturally exciting more interest as the time for issuing the voting papers approaches, and several letters referring to the matter have been received for publication in the Journal. In one or two instances, however, the letters sent have not been signed by the writers and—in so far as opinions regarding the qualifications of candidates are expressed in those letters—the Editor is not disposed to publish them. The columns of the *Pharmaceutical Journal* are always freely open for the publication of signed expressions of opinion by members of the Society, or even of members of the trade, but it should be clearly understood that the writers must be prepared to accept responsibility for the views they express. It is palpably unfair to suggest opposition to any candidate for the Council in an unsigned communication, and that aspect of the matter is submitted to the consideration of the writers of the letters in question.

THE QUESTION OF UNQUALIFIED DISPENSERS has been raised anew in the House of Commons by Major Rasch placing a question on the paper with reference to the Heaton Norris case, and attention is thus once more directed to the fact that the dispensing of medicines, in so far as it is not performed by legally qualified persons, is far from being carried out generally in what can be regarded as an efficient and satisfactory manner. Medical practitioners, of course, are quite at liberty to employ anyone they choose to compound and dispense non-poisonous medicines for their patients; with regard to the dispensing of poisons by unqualified persons, acting on behalf of medical practitioners, the question has never been formally raised, and a judicial decision in the matter would probably turn on the point whether or not a sale of the medicine had been effected. As matters are, however, the individuals who dispense for medical practitioners and hold a pharmaceutical qualification are in an extremely small minority, whilst, according to the *Medical Press*, unqualified dispensers must be numbered by thousands. The quasi-legal status of those dispensers, according to the same organ, is very irregular, and it is admitted that there is no obvious reason why the regulations with which the law hedges in the manipulation of poisons should not apply to the dispensers employed by medical practitioners, the more especially as "the privileged position occupied by the latter in respect of the certification of death has been suggested as of itself a reason for insisting on special precautions." When the Privy Council directed the attention of the Executive Committee of the General Medical Council to the Heaton Norris misadventure, the reply was to the effect that whilst occasional accidents may possibly arise from the employment by qualified medical practitioners of careless or incompetent dispensers," probably the best protection is afforded to the public by the responsibility of the practitioner for the acts or defaults of the servants whom he employs." But, as the *Therapist* remarked at the time, if that holds good of the unqualified dispenser, ought it not also to do so in the case of the unqualified medical assistant? In fact, the position taken up by the Executive Committee is a distinctly illogical one and the *Lancet* clearly acknowledges that when it states deliberately that "the unqualified dispenser is almost as dangerous as the unqualified medical man." That important organ of the medical profession has also committed itself to the view that the public are entitled to have their medicines dispensed by efficient assistants and to know that such efficiency has been vouched for by a legal qualification.

IS JOINT STOCK PHARMACY threatened with extinction by an increasing difficulty in securing the services of registered chemists as employés? Such a question at once suggests itself on reading the following advertisement, which has recently appeared in the *Times* and other leading dailies, and to which attention is directed by Mr. J. W. T. Morrison in a letter published in this week's Journal (see p. 429):—

> TO INVENTORS.—WANTED, for the use of limited liability drug companies, a MECHANICAL ARRANGEMENT (incapable of qualification) to facilitate the delivery across the counter of articles subject to the obstructive provisions of the Pharmacy Act, so as to afford a convenient means of free trade distribution. Very liberal terms offered for a machine that would secure perfect immunity for companies.—Apply to BOOTS, care of Mr. John Smith, 123A, Dashwood House, Broad Street, E.C.

Presumably, penny-in-the-slot devices do not quite meet the desired purpose, that purpose apparently being to carry on the compounding, dispensing, and selling of poisons by purely mechanical means. In the event of a suitable machine being devised, it would be interesting to know whether it would be permissible to paint upon it the title "pharmaceutical chemist," or "chemist and druggist." In other words, would the Courts regard the arrangement (incapable of qualification) as a "person" within the meaning of the Pharmacy Act, 1868? Mr. Morrison suggests other startling possibilities, and we await with interest the publication of the specification of the mechanical arrangement which is ultimately found suitable for perfecting the legal immunity partially provided for companies by the House of Lords; for, as a matter of course, such a brilliant and valuable idea may be expected to form the subject of Letters Patent.

BRITISH GUIANA is now numbered with the countries where the practice of pharmacy and sale of poisons, etc., are regulated, the Ordinance providing for the examination and registration of chemists and druggists, and for the regulation of the sale of drugs and poisons, having received the Governor's assent on April 8 last. The full text of the Ordinance was published in the *Pharmaceutical Journal* for March 11 last, and—though certain modifications have been effected in the wording and arrangement of the sections—it is unnecessary now to refer to anything beyond the more salient features of the measure. Any person entitled to practise in Great Britain as an apothecary, pharmaceutical chemist, or chemist and druggist, is exempted from passing an examination in the Colony, but must apply for a certificate and pay a prescribed fee. A Board of Examiners is appointed, consisting of the Surgeon-General, two duly registered medical practitioners, and three members of the Chemists' and Druggists' Association of British Guiana, the body which has been mainly responsible for the passing of the Ordinance. The Council of the Association is directed to appoint a Registrar who is to make and keep a correct Register of persons qualified under the Ordinance. No medical practitioner can be registered as a chemist and druggist in the Colony, and no person is permitted

to sell, or keep open shop for retailing, dispensing, or compounding drugs or poisons, "unless he is registered under this Ordinance or employs some person who is so registered to personally superintend and manage the dispensing and compounding of drugs and poisons." One effect of these restrictions would appear to be to compel medical men to employ duly qualified dispensers but, at the same time, the wording of the prohibition clause (see *ante*, p. 232) seems to leave an unfortunate opening for the practice of pharmacy by unqualified persons. The schedule of poisons is much more extensive than the British one, but the restrictions on their sale are much the same as here. Exemption from jury service is secured to registered chemists, who are also authorised not to dispense doses of poisonous drugs in excess of the B.P. maxima, unfit and adulterated drugs must not be sold, and a power of search for such is reserved to the Governor or the Council of the Association. A list of simple medicinal substances which anyone may sell is appended to the Ordinance (see *ante*, p. 234).

The Annual Dinner of the Pharmaceutical Society is to be held on Tuesday week, May 16, but applications for tickets are, we understand, coming in somewhat slowly, many who are expected to be present having, so far, failed to notify the fact in the proper quarter. It may be as well, therefore, to point out that early application for tickets will save much trouble and inconvenience to those who voluntarily undertake the task of arranging the details of the dinner. Moreover, since the capacity of the Whitehall Rooms, where the dinner will be held, is somewhat limited, it should be clearly understood that persons who apply for tickets at the last moment may not be able to secure any. Members and others who have asked that their names may be included in the list of stewards sometimes assume that they are thereby understood to have expressed their intention of being present at the dinner. That, however, is a false impression, as a definite application for tickets must be made in every instance. It is particularly necessary that an early intimation should be sent to the Hon. Secretary, Mr. Richard Bremridge, when friends desire to be seated together, and it is hoped that all the tickets may be disposed of by the end of next week at latest.

The Pharmaceutical Society does not appear to have the approval of the *Grocer*, if we may judge from certain comments in that advocate of free trade in poisons, for it speaks of "the unreasonableness of the law" which allows the Society to take private detectives about the country to catch shopkeepers in technical offences against the Pharmacy Act. The idea of the Pharmaceutical Society wandering about the country with detectives in tow, searching for victims, is more brilliant than accurate. For, inasmuch as the Society is not a peripatetic body, it cannot well "take" detectives about. It might be urged, as another reason, that the Society does not employ any detectives, private or otherwise, but that is a mere detail not worth referring to. The case about which all the fuss is being made by the *Grocer* is the one recently heard (see *ante*, p. 355) at the Hanley (Staffordshire) County Court, when a chemist's unqualified assistant was sued for selling proprietary preparations containing morphine. Naturally, much is made of Judge Jordan's remark that he could not imagine what magic there was in a bottle of soothing syrup passing through the hands of a qualified man, and of his expression of opinion that if the facts had been brought before the Pharmaceutical Society the action would never have been brought. The comment is offered that if Judge Jordan had known the Pharmaceutical Society, he probably would not have made the remark, and with that view we cordially agree.

A Less Prejudiced View of the Society's position is taken by an Essex newspaper, which refers, in a note headed "Deadly Powder," to an instance of what it terms the "fatal facility" with which poisons can be obtained, the action against a nurseryman at Brentwood County Court, reported in last week's Journal, being described as instructive. In that case, an agent of the Pharmaceutical Society purchased a tin of weed-killer containing arsenic at the shop of the defendant, and though it was urged that he bought the weed-killer for use in his business as a nurseryman only, and that it was sold by one of his employés without his authority, judgment was given against him. The *Essex Weekly News* remarks that to plead ignorance of the law on the part of a servant is no justification for so serious an offence, and it directs attention to the case because "it is of public importance that people who obtain poisons for trade purposes should understand they cannot sell them again except they first fulfil the provisions of the Pharmacy Act." Chemists, it is pointed out, are obliged to keep a "poison register," and observe other precautions, "but it sometimes happens that despite all safeguards poison gets into the hands of those who should never have obtained it. It is very undesirable that traders in the ordinary way of business should also be vendors of poisons, unless they prove themselves to be what the law calls 'qualified men.'"

Medical Practitioners and Chemists who may be disposed to speak well of proprietary preparations will doubtless take warning by the unpleasant experience of Dr. Morgan Dockrell, who has failed to induce the Courts to grant him an injunction to restrain the proprietor of a mineral water from using his (Dr. Dockrell's) name in advertising its merits. It appears that the plaintiff had experimented with a bottle or two of the preparation, and, on meeting the defendant subsequently, told him in a jocular manner that nothing seemed to have done his gout so much good. Under the circumstances, it is not surprising to learn that the proprietor of the mineral water published Dr. Dockrell's statement in advertisements, and though the plaintiff wrote to ask that his name should not be used, as he was not permitted to make use of his professional position to help the sale of proprietary preparations, the defendant declined to withdraw the advertisements. Dr. Dockrell, therefore, felt bound to bring an action to secure the omission of his name from the advertisements, but the jury found that the matter complained of was not libellous, and Mr. Justice Ridley thereupon refused to grant the injunction asked for. The matter was next brought before the Court of Appeal, but Lords Justices A. L. Smith, Vaughan Williams, and Romer agreed that, on the finding of the jury, the Court had no power to grant any relief to the plaintiff.

The Finding of the Jury was apparently the only difficulty, for Lord Justice Smith said if that had been different, the plaintiff might very well have been entitled to the injunction he asked for. Lord Justice Vaughan Williams was anxious lest the decision of the Court might erroneously be taken to imply that an advertiser of the class of advertisements to puff quack medicines, which are so intolerably frequent in every newspaper one takes up, has a right to use the name of an eminent physician without authority, for the purpose of puffing his preparation. He said most emphatically that was not the decision of the Court. On the contrary, it seemed to him that in most cases, if the facts were properly alleged and properly relied upon, the unscrupulous advertiser would find he had been guilty of an actionable wrong; and if the matter went before twelve of his fellow-countrymen, he would have to pay for it very severely. Lord Justice Romer said an injunction could not be granted to stop the continuance of a

wrongful act, for the pleadings did not allege that the words complained of were untrue, or in themselves were likely to injure the plaintiff, as, for example, would have been the case if the words complained of had asserted falsely that the plaintiff had given his sanction for his name to be used—but there was no such finding here.

How to Influence M.P.'s? is a question to which registered chemists may shortly have to give a practical answer, and it may prove interesting, therefore, to repeat what one Member of Parliament has to say upon the subject. Referring, of course, to no such merely sublunary matters as the regulation of the practice of pharmacy, Mr. H. J. Wilson, M.P , pointed out at a recent public meeting that ladies have it in their power to exert very great influence, and he related how one Member of Parliament had told him he must vote in a certain way on a certain question, because his pocket was bulging with letters and postcards written by men and women in his constituency. Members of Parliament, he continued, are undoubtedly influenced by what those residing in their constituencies write and say, and if, in regard to great questions which from time to time come up, constituents would but address their representatives in Parliament, those gentlemen could not afford to disregard the matters brought under their notice.

The Chelsea Physic Garden.—The names of the Committee of Management with whom the future management of this garden will rest have now been published. The representatives appointed by the trustees of the London Parochial Charities are the Hon. Mrs. Evelyn Cecil, the Right Hon. Sir M. E. Grant Duff, Mr. W. Hayes Fisher, M.P., Mr. R. B. Litchfield, Mr. L. B. Sebastian, Sir Owen Roberts, Mr. Sidney Webb, the Rev. R. H. Hadden, and Mr. Evan Spicer. The Treasury has appointed Mr. A. B. Freeman-Mitford, C.B., and the Lord President of the Council has appointed the Right Hon. Sir Herbert Maxwell, M.P. Dr. D. H. Scott, F.R.S., of Kew Gardens, is the representative of the Royal Society, and Professor S. H. Vines, F.R.S., of Oxford Botanic Gardens, of the Senate of London University. Mr. J. R. Upton has been appointed by the Society of Apothecaries, and Mr. Michael Carteighe by the Pharmaceutical Society. The appointment by the Technical Education Board of the London County Council has not yet been completed, but it is understood that a committee have recommended the appointment of the Chairman of the Board, Mr. T. A. Organ. Earl Cadogan, or any person to be delegated by him, is an *ex officio* member of the Committee. Mr. H. Howard Batten is acting as hon. secretary to the garden, and any communications on the subject may for the present be addressed to him at 3, Temple Gardens, Temple, E C.

Liquid Hydrogen was the subject of some interesting remarks by Professor Dewar, at the annual meeting of the members of the Royal Institution, held on May 1. After making a brief reference to the recent scientific work of the Royal Institution, Professor Dewar announced that, having obtained liquid hydrogen in considerable quantity, he had directly determined its temperature and other physical constants, finding its boiling point to be much lower than was previously supposed—namely, 20 degree above the zero of absolute temperature, and attaining by exhaustion a temperature of only 15 degrees absolute. Pending the discovery in quantity of some yet lighter gas, there was no means in sight of bridging this gap and reaching the zero point. Professor Dewar also took occasion to warn the public against absurd exaggerations as to the properties of liquid air, which, originating in America, found their way into popular magazines in this country.

MEDICAL MEN AND PHARMACISTS.

The retrograde tendency of the Lord Chancellor's Pharmacy Bill has been forcibly pointed out in the *Lancet* of April 15, and the mischievous consequences that would follow its adoption by the Legislature were there plainly stated. A similar expression of opinion appeared last week in a letter addressed to the *British Medical Journal*, and it so thoroughly represents the view that should prevail on the part of the medical profession that we cannot do better than reproduce it in full.

The Pharmacy Bill, 1899.

Sir,—The object of the Bill introduced into the Lords, backed by all the weight of a Lord Chancellor's influence, is to enable a company to carry on the business and use the description of a pharmaceutical chemist or chemist and druggist. It is difficult to see the object of this provision, for clearly it is only an extension of the so-called "Widow's Clause" of the Pharmacy Act, 1868—a clause open to grave objections, and the most obvious blot on an otherwise fairly satisfactory measure.

Personal qualification and personal responsibility are of the very essence of the relation between druggist and medical practitioner, and it is to preserve this personal element that I would like to see the medical profession taking up a position decidedly hostile to the new Bill.

Moreover, in the interests of the general public, this Bill should never be allowed to become law, for under it the protection conferred by the last Pharmacy Act is likely to be distinctly curtailed, and, seeing the large and increasing number of cases of accidental poisoning that occur in these days, one would imagine that any new legislation would err rather on the side of stringency than on the reverse, and afford a greater measure of protection by more closely scrutinising and restricting the sale of drugs.

It is true the proposed law provides that a company shall only be allowed to carry on the business and use the description of a pharmaceutical chemist "so long as its business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist, or chemist or druggist, as the case may be"; but is it not true that the incorporation and registration of limited liability companies have primarily a financial object?

With such an object in view a company may employ a qualified chemist to act as "cover" to as many unqualified assistants as may be thought necessary for the production of a certain financial result.

It is a somewhat lurid commentary that, so far as this year has gone, 25 per cent. of convictions under the Food and Drugs (Adulteration) Act, Pharmacy Act, and kindred Acts, have been obtained against drug stores and similar companies trading as chemists.

The compounding of drugs and the dispensing of prescriptions are not matters which can properly be employed for the production of inflated dividends, any more than the practice of medicine, surgery, and midwifery can, and it is to be regretted that a Bill should be introduced which will enable a company to use these methods.

This is not only a question for chemists and druggists: it is also one of considerable moment to medical men, for with the loss of confidence between prescriber and dispenser, which I think must inevitably ensue on the passage of this Bill, how are we to treat our patients satisfactorily? Can we be certain that the prescriptions we write will be accurately dispensed, and that pure drugs only will be used in their composition?

Liverpool, April 18, 1899. R. Fielding-Ould, M.A., M.B.

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION.

The thirtieth annual dinner of this Association which was held at the Albert Hotel, Derby Road, on Thursday evening, April 27, was a distinguished success. It was invested with a special interest by the presence of the President of the Pharmaceutical Society (Mr. Walter Hills), who responded to the toast of the Pharmaceutical Society. The chair was occupied by Mr. Richard Fitzhugh (who has been for twenty-three years President of the Local Society), and the Vice-Chair by the Vice-President (Mr. E. Gascoyne). Supporting the Chairman were Mr. Walter Hills, the Mayor of Nottingham (Ald. E. H. Fraser, D.C.L.), the Deputy-Mayor (Ald. Joseph Bright, J.P.), Mr. Philip S. Clay (Chief Constable of the city), Professor Carr (University College), Ald. Dr. F. R. Mutch, Dr. C. H. Cattle, Mr. C. A. Bolton, Mr. F. R. Sergeant, Mr. A. Eberlin (Hon. Sec. of the Association), the deputy Town Clerk of Mansfield (Mr. J. Harrop White), and Councillor J. Lees; and there were also present: Messrs. J. Wilford (Treasurer N.N.C.A.), A. Middleton, W. Gill, W. Brown, R. Beverley, J. C. Parkes, Bayley, J. Rayson, Palmer, R. Widdowson, F. Lumby, A. E. Beilby, T. Wilson, J. S. Radford, L. Priestly, H. George Newark), A. C. Vallance (Mansfield), H. Shippam, E. E. Turton, J. Brown, W. H. Smith, W. R. Weatherley, S. Bailey, C. W. Warriner, E. Daniel, Sivers, F. Stanley, etc. The Chairman having submitted the loyal toast, .

Mr. F. R Sergeant proposed

The Pharmaceutical Society of Great Britain.

Mr. Sergeant said that although the Society imposed an examination on a man before he could carry on the business of a pharmaceutical chemist, subscription to its funds was entirely a matter of choice. Perhaps many of them neglected their parent Society in that respect after having secured their qualification, but he believed that state of things was rapidly passing away. The great accession to membership recently had demonstrated that the Pharmaceutical Society had acted wisely and well in its new legislation.

The President's Speech.

Mr. Hills, who was received with great cordiality, said he was not surprised at the reception which had been accorded to the toast of the Pharmaceutical Society, because he believed they had considerable respect and regard for and interest in the work of the Society which he had the honour to represent. He must confess that the reception had been one of the most cordial that he had had the honour of receiving since he had been President of the Society. He proposed—as he had the honour awaiting him of proposing the toast of the local Association later on—to confine his remarks for the present to the Pharmaceutical Society. The President then proceeded: I do not claim for the Pharmaceutical Society infallibility, but I do claim for it that, as far as it has had the support not only of those who have been connected with it, the Council has, from the very commencement, done excellent work, and done work which, on the whole, has been for

The Advancement of Our Common Interests.

But it is necessary, in order to do good work, to feel that we have a strong backing. I am glad to think that, owing to the passing of the Pharmacy Acts Amendment Bill of last year, we have received considerable additions to the number of our members, and I am very glad to hear to-night—although I knew the fact, but not the numbers before—that in Nottingham and district we have received such a large addition to our members. A rise from twenty-four to fifty-four is very large, and when I tell you that up to the present time we have enrolled something like 1740 new members during the present year, I think you will agree with Mr. Sergeant that

The Passing of the Act Last Year

was an event of great benefit to the Society. I only hope that before the end of the month we shall receive a still larger addition to our numbers, though that will not represent anything like the number we ought to have, because I maintain that every person who is on our Register should be associated in some way with the Pharmaceutical Society. I am very glad to know that there are several gentlemen present who are not connected with our profession, including the Mayor of this important city, and I should just like to say—perhaps for their instruction—that the Pharmaceutical Society has been established for nearly sixty years. It was founded as a voluntary Society for three principal purposes—the advancement of education, the promotion of benevolence, and for the protection of our common interests. I do not propose to-night to speak about the promotion of benevolence, but I may say for the benefit of those not connected with us that we have

A Splendid Benevolent Fund,

and that at the present time something like forty or fifty annuitants are receiving, most of them, £50 a year annuity, and besides that we also make a number of casual grants, amounting to a considerable sum, which are of the greatest benefit to those who receive them. I wish to say a few words, first of all, on the subject of education, and then, later, about the Lord Chancellor's latest achievement. With regard to education. The Society has from the earliest years done all that was within its power to promote the higher education of those who seek to come into the profession. We have had a school almost from the time of the Society's foundation, and at the present time our School in Bloomsbury Square is full, and, I think, is carrying on a very excellent work. But I have just come from examinations which I have attended, both in Edinburgh and in London, and I am grieved to tell you that out of something like 501 candidates, who submitted themselves for examination in London and Edinburgh, only 155 passed. That is to say, that only about one out of three candidates satisfied the Examiners of his competency. Now, gentlemen, that is not a satisfactory state of affairs. Some of you may think that 501 candidates was too large a number and from that aspect you may be satisfied with

A Small Number of Passes.

I think we should be much more satisfied if 200 had come up for examination and the same number—155—had passed. I have been recently informed that at least 5 per cent. of the men failed for the German qualification. It seems to me a sad thing that something like 70 per cent. of our candidates failed. Now, what is the cause of it? It is due, I think, first of all, to insufficient general education and, secondly, to insufficient technical training and scientific knowledge. Now, with regard to the first—general education—I am glad to think that in twelve months' time—in July of next year—our new system of examinations will commence, and we shall demand of those who are entering our profession evidence of

A More Liberal Education.

I hope at the Council meeting next week the Council will approve of suggestions that have been made and will be made on that occasion by Boards of Examiners with reference to certificates in lieu of examination. I hope you will all read the report if it is published, because it is one of very great interest. The other cause of the large number of failures is no doubt due to the fact of insufficient technical experience and training. I am one of those who have, for a number of years, been an advocate of an enforced curriculum. I hope, gentlemen, that before many years are past, there will be such a force of opinion amongst the members of our profession as will enable us to go to Parliament to obtain the necessary powers to impose an enforced curriculum upon our students. I think it will be for the advantage of students, and also to the great advantage of local colleges and universities, an excellent example of which you have in the city of Nottingham. I am glad to hear of the very excellent work which is being carried on in connection with the teaching of pharmaceutical students at University College, Nottingham, and I hope that the time is not far distant when it will be necessary for all our students at one time in their career to be associated with a college or university, such as that which obtains at Nottingham, and in that way obtain their scientific knowledge in a more satisfactory way than they now, in many cases, obtain at various private schools and otherwise. I believe that this will be a help also to the local universities, and I think that by the centralisation that we should all try to encourage in every possible way we should improve education in every large centre throughout Great Britain. One more point with respect to the examinations and education. I am also one of those who are in favour, under certain conditions, of

Dividing the Qualifying Examination,

but I have always said only on one condition, and that is, that we have an enforced curriculum. I am in favour of an enforced examination, and an examination which shall give the individual his title to pharmaceutical chemist, pharmacist, but it must be after evidence of training and having passed through a course of

instruction, as I have said before, at one of the public colleges or universities. Now, gentlemen, perhaps you are more anxious to hear what I have to say about

The Present Political Outlook,

to which reference has been made by my friend, Mr. Sergeant. It is unnecessary for me, perhaps, to refer to the history of this question of company trading. Evidently it was the intention of the Legislature that persons who kept open shop should be qualified, but in course of time limited companies came very much into vogue, and in course of time also the limited company, with its exceeding many flocks and herds of grocery, haberdashery, ironmongery, and that sort of thing, thought it might also turn to look towards the pet lamb of pharmacy. And when companies thought they would like to be chemists and druggists, a case was fought, though unfortunately it might have been fought better; because in this particular instance, the person who happened to hand over the poison was a qualified person, although only the employé of a company. But the question was fought before the County Court, before the Queen's Bench, and Court of Appeal, and finally before the House of Lords, with the result that it was laid down that limited companies, not being natural persons, and not themselves able to pass a qualifying examination and become qualified, were outside the Pharmacy Act altogether, and in that particular case, the poison having been sold by a qualified individual, the public safety was secured. That is the history of the question. During the progress of our

Pharmacy Acts Amendment Bill

last year you all recollect that at a late stage in the House of Lords the Lord Chancellor and the late Lord Herschell made some statements with reference to the anomaly that now exists in this respect, and from the sympathetic tone of the former we expected very much, but when the special amendment, of which the Lord Chancellor had given notice, was actually in print we found it did not meet our views at all, and for many reasons to which I need not refer, the Lord Chancellor was good enough at that time to withdraw that amendment. Soon after the passing of our Act I had the opportunity of having an interview with the Lord Chancellor. To that I have already alluded at some length in various remarks I have made, especially at the recent Council meeting. The result of it all was that the Council thought it wise to send in to the Lord Chancellor

Suggestions for a New Pharmacy Bill,

and I may say that we were aware that at the same time other professional bodies, who were beginning to be hit in the same way as we have been hit for the last twenty years, were also approaching the Lord Chancellor. Whatever may have been the wisdom of the particular line we took, I think that under the circumstances we were at least thoroughly justified in sending suggestions in the form in which we sent them. We went to the Lord Chancellor on the same lines as both the medical men, the dentists, and others were approaching him. We said, "If a company cannot pass an examination, and so become a qualified company, prevent a company from carrying on the practice of pharmacy altogether." That seems logical, gentlemen. That seems the best way in the opinion of most of those who have approached this question. I should say that for some years previous we had been working with those other professional bodies to bring about an amendment of the Companies Act which would make it unlawful for any company, not being a natural person and could not obtain the qualification, to carry on a calling which, in the case of natural persons, would require evidence of training and of knowledge. We were received with courtesy, as is always the case, but we found that Mr. Ritchie and others considered it impossible to make the suggestions which we put before him a part of any future Companies Amendment Bill which was being considered. The suggestions, to which I have already referred, having been sent in to the Lord Chancellor, I was bound to say that I was rather surprised to find a few days ago that

Two Bills had been Read

for the first time in the House of Lords, one dealing with the practice of medicine, surgery, dentistry, and midwifery, and the other dealing with the question of pharmacy, but dealing with them on totally different lines. In one case it gave protection to the practice of medicine and surgery and dentistry and midwifery; in the other case it went, not only to the extent of promoting company pharmacy under certain conditions, but also went out of the way, it seemed to me, to say that our titles are no longer to be protected to the individual who has done something to show that he is entitled to them, but that they are to be taken by companies who happen to have a little money and put it together

In a Common Concern.

That seems to me altogether contrary to justice. In 1868 Parliament deliberately said that it was in the interests of the public that certain persons should show that they were qualified by submitting themselves to certain examinations, and that in this way they should also prove that they were fit persons to be entrusted with keeping open shop for the sale and dispensing of certain poisons; and now, after thirty-one years, the highest legal authority in the country says that any number of persons combining together may call themselves by those titles provided they keep a pharmaceutical chemist or chemist and druggist to do their work for them. As far as I can see, there is nothing in that suggestion to prevent a company having a business in every town in England and Wales, and having one chemist and druggist sometimes at one town and sometimes at another. As far as I can see, that would be possible. It is absolutely necessary that we

Fight for Our Titles.

It is only fair, it is only right and reasonable, and in this respect I say we are in no different case from the other bodies dealt with under the other Bill. We are on the same footing as regards a title as medical men, dentists, and midwives. We must oppose the Lord Chancellor's Bill tooth and nail, and we shall defeat it. But when I say that, I am quite aware that there are—although we have many things in common with other professional bodies—some distinctions. There are other styles of company trading. On the one hand there are certain limited companies carrying on the practice of pharmacy, the managing directors of which, or practically all the managing directors of which, are pharmaceutical chemists or chemists and druggists—old-established firms and others who, for certain reasons, have converted themselves into limited companies. I do not suppose that any gentleman here thinks there is any objection to that kind of company trading. On the other hand, there are certain bogus or one-man companies. These are companies which in many cases have been formed after prosecution by the Council of the Pharmaceutical Society. We have found that a man is breaking the law; we have got a fine from him, and then he has joined himself with his wife and grandmother, and brothers and sisters, taken perhaps 990 shares out of 1000, and

Floated Themselves as a Company.

Now, while I believe that we have the majority of qualified persons with us in the suggestions which we have sent to the Lord Chancellor, still I do know that there is a large number, a considerable number, of our friends throughout the country who feel that there are considerable difficulties in dealing with this question owing to certain vested interests and other reasons, or for certain interests which are considered to be vested interests. Now,

The Lord Chancellor's Bill

does not help us at all, and therefore we must oppose it, as I said, heartily. It will be for the chemists of this country to consider whether, in the future, it will not be necessary in some way—while protecting in every possible way the interests of the qualified individual both to title and to position—to regulate company trading in such a way as will be for the public interest and also at the same time entirely in the interests of the qualified individual. I merely mean that it is necessary—I do not know whether I have the entire sympathy of those whom I am addressing—to look at this matter from all sides. We must be ready to listen to any reasonable suggestion that is made to us; but we must, at the same time, defend our position as educated and qualified men, equal with those constituting other professional bodies whose cases have been dealt with in

The Other Bill

now before Parliament. I do hope that you, here in Nottingham, and our friends throughout the country will believe that the Council has the interests of our common profession at heart. We are all men who have the same difficulties to contend with as yourselves in a greater or less degree, whether we live in the town or whether we live in the country, and I think that you have our entire sympathy. I hope that in the coming election you will vote for men in whom you have confidence. I do not happen to be a candidate myself, and therefore I can speak more frankly. I

hope you will vote for men who have no special fads and no special axes to grind, but

Vote for Men in whom You have Confidence,

and who have the special interests of the profession at heart, and when you have sent them to the Council, trust them. I think you have trusted them in the past, and I hope you will trust the Watch Committee, and wait until the Watch Committee or the Council ask you to make representations to the Members of Parliament with reference to the Bills which are now before the House of Lords, and may possibly—although I am doubtful if they will—go to the House of Commons. I thank you for the very kindly reception you have given me, and for the patience with which you have listened to these rather discursory remarks. I assure you it is with the greatest pleasure that I come down to see you, and I thank you very heartily for the kind way in which you have received me and the toast of the Pharmaceutical Society of Great Britain.

Mr. J. Harrop White proposed the toast of

The Corporation of the City of Nottingham,

to which the Mayor and Deputy-Mayor responded.

Mr. Hills proposed

The Nottingham and Notts. Chemists' Association.

congratulating the Society on the good it is doing, and making special reference to the President, Vice-President, the indefatigable Hon. Secretary (Mr. Eberlin), and Mr. Sergeant, the present local secretary of the Pharmaceutical Society, who, he said, was an able successor to Mr. Bolton, who had done yeoman work for the Society, and whose health, he was sorry to hear, was not yet satisfactory.

The toast was suitably acknowledged by the President and Vice-President.

Other Toasts.

The other toasts included "The Medical Profession," proposed by Mr. Gill, and responded to by Drs. Cattle and F. R. Mutch; "The Visitors," proposed by Mr. Bielby, and acknowledged by Professor Carr; and "The Chairman," proposed Mr. C. A. Bolton. A number of very enjoyable musical items interspersed the toast list, including a clarionet solo by the Chief Constable, and songs by Mr. A. C. Vallance.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION.

The annual business meeting of this Association was held on Wednesday, April 26, when Mr. G. H. C. Rowland, President, occupied the chair.

The Prize Committee reported that the Ewing Pharmacy Prize had been gained by Mr. George W. P. Grainger, 6, Polwarth Crescent. The second prize, presented by Mr. William Aitken, had been gained by Mr. George Mack, 119, George Street, Edinburgh. The President then presented the Ewing Prizeman with copies of the British Pharmacopœia, Newth's 'Chemistry,' Edmond's 'Botany,' and Ince's 'Latin Grammar'; and the Aitken Prizeman with a copy of the British Pharmacopœia. The annual report and financial statement were then read and adopted, the former showing a slightly increased membership and the latter a balance of £7 4*s.* 6*d.* A sum of £1 1*s.* was voted as a subscription to the Benevolent Fund of the Pharmaceutical Society. The following office-bearers were elected for next session:—President, Fraser McDiarmid; Vice-President, David Harley; Secretary (vacant); Assistant Secretary, D. B. Kidd, 139, Princes Street; Treasurer, Alexander McCutcheon; Members of Committee, Messrs. Grainger, McBain, Mack, Plenderleith, Reid, Rowland, G. Sinclair, and J. D. Sinclair. Prize Committee: J. L. Reid, G. H. C. Rowland, and George Sinclair.

Mr. C. F. Henry then opened a discussion on

The Lord Chancellor's Pharmacy Bill.

Commencing with a brief survey of the existing position of British pharmacy, he lamented the omission on the part of the Council of the Pharmaceutical Society to secure a House of Lords decision on the point whether corporations are free to assume pharmaceutical titles. The action of the Council in submitting suggestions to the Lord Chancellor was also unfavourably criticised, after which the usual arguments against company trading in pharmacy were recapitulated, and the conclusion was arrived at that a remedy must be found for existing anomalies. Assuming that any attempt to stop company trading in pharmacy must be futile, the suggestion was made to register and regulate drug companies, making them amenable to penalties under the Pharmacy Act, 1868, as individuals committing offences now are, and allowing them to use pharmaceutical titles, in connection with the name of the qualified manager or assistant in each shop. It was urged to be "most reasonable" that the shops of limited liability companies and the drug departments of stores should be allowed in that way to become chemists' shops. At the same time, registered chemists were urged to oppose the Lord Chancellor's Bill and, subsequently, to bring forward "reasonable proposals which Parliament, the public, chemists, and companies are likely to accept."

Mr. C. A. Macpherson thought it was a mistake to go half way to meet the companies. He doubted whether, even if the Lord Chancellor's Bill passed, it would be possible to fine a company for selling or keeping open shop. He also questioned the statement that the effect of the 1880 judgment of the House of Lords was to legalise companies, and insisted that they could not be said to have any vested interest in the selling of poisons.

Mr. George Sinclair supported Mr. Henry's view of the case, and also thought the Lord Chancellor's Bill should be opposed. He disagreed with the suggestion to oppose the Medical Bill unless chemists were included.

Mr. McDiarmid agreed generally with Mr. Henry and certainly thought chemists should oppose the Lord Chancellor's Bill. It would, he thought, be an advantage if the Council included a larger number of north-country members. They would then have a better expression of the mind of the Society than was now possible, owing to the large preponderance of London opinion on the Council. He moved:—

> That this Association resolves cordially to support the Council of the Pharmaceutical Society in any action which it may take to oppose the Lord Chancellor's Pharmacy Bill, 1899.

Mr. J. D. Sinclair, Vice-President, seconded the motion. He agreed that the position of stores was now too strong for them to be stopped, and he thought it was useless to make the attempt.

Mr. Reid agreed that it was best to aim at some system of regulation. Things must be dealt with as they are, and they must not attempt to accomplish impossibilties.

The Chairman said he was also of opinion that they should not oppose the Medical Bill. Their best policy lay in keeping on good terms with the doctors.

Mr. Henry, in reply, expressed the opinion that chemists should neither seek to be included in the Medical Bill nor oppose it. That Bill could do no possible good if it passed. It would not prevent companies making an arrangement with doctors and dentists to attend patients for certain fees, just as was at present being done by companies in London (*sic*). One reason why they should not seek to be included in the Medical Bill was that the great distinction between pharmacists and the classes included in that Bill was that pharmacists were traders and kept open shops for the sale of goods. He thought it was nonsense to contend that companies who had been selling poisons for twenty years had no vested interest in carrying on such a business.

The motion was then put to the meeting and unanimously agreed to.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

A meeting of the above Association was held on Friday, April 28, Mr. H. Payne being in the chair. A paper was read by Mr. P. B. Gray entitled—

Caffeine-producing Plants.

Taking as examples tea, maté, coffee, kola and guarana, the author pointed out the striking fact that these plants, all from different natural orders and from various parts of the globe, had been instinctively selected by man as a stimulant, and their efficacy has been shown by the enormous amount consumed of tea and coffee at the present time. The manufacture of the two varieties of tea, black and green, was entered into in some detail, illustrated by specimens, including one of a sample of tea only used by the Royal Family and Court of Russia and never seen in Europe; also a very interesting sample of Pekoe flower, which consists of the fine hairs rubbed from the finest shoots of the tea plant. Two specimens were shown of the peculiar cups used in the

drinking of Paraguay tea, which at a family gathering are passed round, each one taking a sip through a special tube with a strainer at the end. The commercial varieties of coffee were also shown, and their mode of manufacture explained, including the decompositions occurring during the process of roasting. Kola nuts in their various forms were also shown, including some fresh specimens, which exhibited the beautiful pink and violet shades, which are of great importance in the native trade of Africa; also guarana, which is used in a similar way by the natives of South America, and said to contain as large a percentage of caffeine as 5. The chemistry of the alkaloid was also briefly discussed.

After a few remarks by the Chairman and Mr. Finnimore the meeting terminated.

WREXHAM AND DISTRICT CHEMISTS' ASSOCIATION.

A special meeting of this Association was held on Monday evening last to consider the present crisis in the trade. Mr. J. B. Francis was voted to the chair, and representatives were in attendance from all towns in the district.

The Secretary, Mr. C. G. Caldecott, amongst other matters, attempted to describe the situation, and incidentally mentioned that it was the wish of the Council of the Pharmaceutical Society that chemists should remain silent until due notice was given by the Watch Committee. The matter was a very grave one, and entailed the gravest responsibility on the givers of the advice. At the same time, loyalty and trust was essential, and no doubt due notice would be given. If the trade journals were but more loyal to principles and more concerted in action, instead of fighting over trivialities to no end except the getting the better of one another, less arguments against the interests of the calling would be available by Members of Parliament, co-operative societies and drug stores.

Mr. L. B. Rowland proposed the following:—

> That this meeting unanimously opposes the proposal in the Lord Chancellor's Pharmacy Bill to legalise drug companies with unqualified directors, and is of opinion that chemists should be included within the scope of the Companies (Medical Profession) Bill along with physicians, surgeons, dentists, and midwives.

This was seconded by Mr. Daniel Evans, of Rhos, and carried unanimously.

FOOD AND DRUGS ACT PROSECUTIONS.

Camphorated Oil.—At Ripon Police Court, Thomas Lockwood, chemist and druggist, Pateley Bridge, was charged with having sold camphorated oil, on April 21, containing 14 per cent. of camphor and 86 per cent. of sesame oil, instead of 21 per cent. of camphor and 71 per cent. of olive oil. The case was supported by the county analyst's certificate.—The defendant referred to the difficulty chemists had in making all the alterations necessitated by the new B.P., especially in the case of preparations for external application, involving loss both of money and drugs, and pleaded that camphor evaporated rapidly, hence the deficiency. —A fine of £2 3s. 2d, including costs, was inflicted ——The following day at Halifax, Richard B. Paget, grocer, of Skircoat, was summoned for selling, on March 23, camphorated oil which on analysis was found to contain only 15 per cent. of camphor instead of 21 per cent. as required by the B.P.—The defence was that it was sold in the same condition as supplied by a wholesale dealer, and a receipt was produced which specified that the article was camphorated oil.—The Chairman of the Bench said that a receipt in itself was not a guarantee of genuineness and tradesmen must learn by experience that they cannot sell to the public anything but the genuine article, and that as the responsibility rests with them, they must take care to have a written guarantee as to the purity of the article. The defendant would be fined 10s. and 19s. costs.——A similar fine and costs were also imposed in the case of Benjamin F. Kitson, grocer, Skircoat, for selling camphorated oil which was made up of 17·5 per cent. of camphor, 15 per cent. of mineral oil, and 67·5 per cent. of olive oil.—The defendant's daughter appeared for the defence and complained of the hardship on small shopkeepers caused by the alterations in the new Pharmacopœia, which they were now given to understand for the first time came into force last May. The oil in question had been in stock more than twelve months.—The Inspector pointed out that even if such was the case the article was not in accordance with the requirements of the old B.P., as it contained mineral oil.

Oil of Juniper.—William George Blackham, chemist and druggist, of 510, Hornsey Road, Holloway, was summoned at the Clerkenwell Police Court on April 26 for selling oil of juniper which contained 100 per cent. of oil of juniper wood.—Mr. Bramall prosecuted for the Islington Vestry.—Defendant said he admitted the sale, but disputed the analysis. Therefore he asked that the third sample produced in Court by the Inspector might be sent to Somerset House. His oil, he contended, answered every test of the British Pharmacopœia. In the last case of juniper oil tried at that Court he considered that other tests than those of the B.P. had been applied.—The analyst's certificate was then put in, and the case adjourned for three weeks, defendant depositing a half-guinea for the Somerset House analysis.

Gregory's Powder.—John Naylor, chemist, of Menston, was summoned at the Otley Police Court on Friday, April 28, for an offence against the provisions of the Food and Drugs Act, in that he had sold, to the prejudice of the purchaser, Gregory's powder compounded with magnesium carbonate instead of calcined magnesia, as directed by the British Pharmacopœia.—Dr. Kaye, Medical Officer to the West Riding County Council, said the powder sold by the defendant was entirely different to that prescribed by the British Pharmacopœia, which authorised the use of calcined magnesia, whereas the defendant had used magnesium carbonate. The result of calcination was to reduce the bulk and also purify the magnesia for internal purposes. Calcined magnesia neutralised the acid, whereas magnesium carbonate had very little action and very little power in neutralising the acid in the stomach. Calcined magnesia was about three times the cost of the other.—In reply to Mr. Knowles, for the defence, Dr. Kaye admitted that magnesium carbonate was used in Gregory's powder in all other countries but England, but he thought England was right. Probably the stomachs of foreigners were not so delicate as the English.—Replying to questions by Mr. Humphris, Dr. Kaye said that magnesium carbonate to some extent corrected acidity, but was not so active as the calcined.—Mr. Knowles submitted that he had no case to meet. The article which his client sold was the article generally sold as Gregory's powder. In the B.P. they were told that the medical properties of the heavy and light magnesia were practically the same. The heavy magnesia was a mild aperient and suitable for children, and therefore was not prejudicial to the purchaser. The mere fact that one was cheaper than the other did not enter into the case.—The Chairman: Does your client make his own powder?—The Defendant: Yes.—In reply to his solicitor, the defendant further stated that magnesium carbonate was better, and did not cake like calcined magnesia.—Cross-examined, defendant said he was not aware that he was liable to a penalty under the Pharmacy Acts for not making articles according to the prescription in the B.P. He made them according to what he thought was best, but he did not put his opinion against the compilers of the B.P.—A fine of 5s. and costs was imposed.

Oil of Almonds.—Parke's Drug Stores, Limited, of 151, Kensington High Street, was summoned at the Clerkenwell Police Court, on April 26, for selling oil of almonds which did not conform to the requirements of the British Pharmacopœia.—Mr. Bramall prosecuted, and Mr. Hicks defended.—Mr. Bramall stated that the analyst had found the substance to be a mixture probably of cotton oil and other oils.—Mr. Hicks said his clients were summoned for a perfectly new offence. It was not for serving an article "not of the substance and quality demanded," but an article "not conforming to the requirements of the B.P." There was no such offence in any Act of Parliament.—Mr. Bramall said he accepted the responsibility for the form of the summons. They did not know what the substance was that had been sold to them. It was a curious conglomeration. He wanted a drug, and a drug should be according to the British Pharmacopœia. He contended, therefore, that his summons was good.—Mr. Horace Smith: You have gone a little too far, I think. That is all. The Magistrate added that he was, however, against the defendants on the point. —Mr. Hicks then pleaded guilty, having regard to the juniper oil case which had been decided against his client. The article sold here was a sweet almond oil made from peach kernels.—The defendants were fined 20s., with 12s. 6d. costs.

PROCEEDINGS UNDER THE PHARMACY ACT, 1868.

PHARMACEUTICAL SOCIETY v. KERSHAW.

His Honour Judge Bacon, in the Bloomsbury County Court, on the 2nd instant, had before him the summons of the Council of the Pharmaceutical Society v. Kershaw, by which the plaintiffs took proceedings to recover a penalty from the defendant under the Pharmacy Act of 1868 for keeping open a shop for the sale of poisons contrary to Section 15.

Mr. Vaughan Williams (instructed by Messrs. Flux, Thompson, and Flux) was counsel for the Pharmaceutical Society; the defendant appeared in person.

Mr. Vaughan Williams said he should prove that the article sold by the defendant was a poisonous preparation within the Section of the Act. The defendant acknowledged that, but denied that the sale was a retail sale. The usual letters were written to the defendant informing him that he had incurred a penalty, and ultimately a letter was written to him asking whether the plaintiffs should bring an analyst to the Court. The defendant admitted that the oxalic acid sold by him was a poison, and therefore there had not been any necessity for an analyst to attend before His Honour. The defendant stated that he was not contesting the question of a fine, but it was a question of future trading. He said he traded amongst wholesale users of the commodity, and he could prove that the trade was wholesale and not retail. All he (the learned counsel) had to show was that the purchase was made, and to give evidence of the kind of shop that it was sold at. His Honour would see that the quantity was sold to such a person that the sale could not come within the saving proviso of Section 16 of the Act of 1868—"nothing hereinbefore contained shall extend to or interfere with the business of wholesale dealers in supplying persons in the ordinary course of wholesale dealing." Of course, if the defendant could show that he was a wholesale dealer, supplying a quantity of poison in the ordinary course of wholesale dealing, then the penalty had not been incurred; but he should submit, after His Honour had heard the evidence, that beyond all doubt there had been a retail sale. The poison purchased was oxalic acid, and the amount paid for it was 1½d.

His Honour asked what was the weight.

Mr. Vaughan Williams said the quantity was four ounces, and it was a sufficient quantity to kill several persons if improperly applied.

Mr. John Partridge gave evidence to the effect that he received the oxalic acid produced from the defendant's shop, 129, Curtain Road, E.C., on February 18 last in response to an order for a quarter of a pound of oxalic acid. The defendant's name and the words "White lead and colour merchant" were over the shop door. In the front window of the shop there was exhibited a bottle with the words "oxalic acid" on the label.

The Defendant said he did not dispute any of this evidence, but he wished to say it was a common practice in his trade. The sales of this nature in his firm were about half a ton a month. The oxalic acid was used legitimately in his neighbourhood for bleaching marble. If the poor consumers were denied the right of buying the material as they had been in the habit of doing, it would be a very serious thing, as they had to pay in his neighbourhood 6d. for a quarter of a lb., and chemists charged more for the same quantity. Defendant asked what was the ordinary course of wholesale dealing.

His Honour said it was not selling 1½d. worth across the counter to a person who might leave it on his dresser for his children or his maid-servant to put into the teapot instead of soda. The man who purchased the oxalic acid might have meant to have used it for some nefarious purpose for all the defendant knew.

Defendant said his firm did not have a retail shop in the ordinary sense of the word. They had a counter, and it was true they did not question everyone who came in.

His Honour said they must. The Pharmaceutical Society was protecting the public.

The Defendant thought he might have had an opportunity of discussing the matter. He did not know that he was transgressing the law until they got the summons asking to have a penalty inflicted.

His Honour did not think the Society ought to have given the defendant any notice. There must be judgment for the plaintiffs.

Mr. Vaughan Williams said it was the only way the Society could interfere.

The Defendant asked His Honour to rule what his position was in the future.

His Honour: You had better bring yourself within the exemption of the Act, and only sell to a wholesale purchaser.

The Defendant said that meant throwing over the trade entirely.

His Honour: Possibly; but you have other things to fall back upon.

Judgment was then given against the defendant with the costs of the summons, including the costs of counsel.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

In Their Report for 1898, the Pharmacy Board of Victoria refers regretfully to the unsuccessful issue of the efforts made last session to obtain what would be considered an adequate amendment of the present Poisons Act. It is admitted that the amending Act introduced by the Chief Secretary would have remedied the defect particularly disclosed by the pink pills judgment, but as the Board were unsuccessful in inducing the Government to accept the view that to give a substantial security of safety to the public the exemption as to patent and proprietary preparations containing poisons should be removed, it was felt advisable to allow the Bill to lapse. The contention of the Board is that the safety of the public can only be adequately secured by restricting the sale and custody of all poisonous substances to those whose training may be considered to specially qualify them to exercise due care in their distribution, and a hope is expressed that Parliament will not long delay in adopting the amending Bill in this direction.

Another Matter of Regret is that little or no progress has been made during the year in the direction of intercolonial reciprocity. The Sydney Pharmaceutical Executive, it is complained, "would seem to regard the question with indifference, since no overtures have been made to induce an understanding on those points in dispute between the Victorian and N. S. W. Boards set out in last report." While, "South Australia deliberately included in her Pharmacy Act, the provision that persons to qualify by local examination must have served their apprenticeship locally, notwithstanding repeated warnings by the Victorian Board that intercolonial reciprocity would thereby be effectually barred. And though the South Australian Board has now the power to recognise Victorian certificates by regulation, no move has been made in that direction." This state of matters is deeply to be deplored, and it is to be hoped that some reasonable agreement may be arrived at ere long.

Most of the Other Matters referred to have already been dealt with in these notes, but the following figures, extracted from the various tables appended, may prove of interest. The number of candidates presenting themselves at the examinations held by the examiners appointed by the Board totalled 308, and included students from New Zealand, Tasmania, and New South Wales, who, after serving their indentures of apprenticeship in those colonies, came to Victoria to attend lectures at the Melbourne College of Pharmacy, and pass the qualifying examination. As against 87 in 1897, 168 candidates presented themselves for the Preliminary last year, the increase being traceable to the fact that a large number of schools and colleges are now adopting the examination as a practical educational test. The Board have resolved that a regulation be framed for the approval of the Governor in Council, providing for the addition of Algebra as far as simple equations, and Euclid as far as the first book, to the Examination, after January 1, 1900. For the Final examination 56 candidates entered, of whom, however, only 19 proved successful. Eighteen pharmaceutical chemists were registered during the year, making the total 1224. On December 31 the Register contained the names of 803 pharmaceutical chemists. The number of apprentices registered was smaller than for some years past, being only 29.

The Report Presented by the Council to the forty-second annual meeting of the Pharmaceutical Society of Australasia, held on March 23, agrees on general subjects with that of the Board. In both great satisfaction is expressed at the increasing value, as an aid to medical and State education, of the Melbourne College of Pharmacy, which now provides not only for the educational

curriculum of pharmaceutical chemists, but also for that of dentists, as well as the teaching of pharmacy to medical students for the Melbourne University. The statement of receipts and expenditure afford some idea of the scope of its work, the total of the fees received amounting to no less than £1015 7s. 6d., as follows: Pharmaceutical students, £521 17s. 6d.; medical students, £301 7s.; dental students, £27 6s.; examination fees, £164 17. The expenses for the year amounted to £1706 6s. 7d., the principal items being: Salaries of staff, £950; wages, £122 17s.; fees to examiners, £122 17s.; college apparatus, £77 14s.; and building and repairing account, £332 4s. 9d. Speaking generally, the statements presented showed the position of the Society to be very satisfactory from a financial point of view, although the Council have unfortunately to report a loss under the Benevolent Fund Account of £126 through the failure of a building society, with whom the Council were investing shareholders.

The Council of the New Registered Pharmacists Society of New South Wales has, in a letter to the Colonial Secretary, entered a very vigorous protest against the operations of the Sydney United Friendly Societies' Dispensary, which it declares to be "carried on as a co-operative store, accumulating assets and making profits which they distribute among certain societies or lodges at regular periods as a bonus dividend." The dispensary, it is alleged, confers no benefits or advantage on any person excepting its directors, who are paid out of the profits of the business, and, as before stated, to the lodges or societies who receive the bonus or dividends. The rules and regulations of the dispensary were, it is stated, registered under the Friendly Societies Act, which prohibits the carrying on of any business for profit by any society so registered, and the Council makes it clear that its object is that the registration of such societies should be disallowed and annulled, as they are "competing unfairly with the registered pharmacists who are compelled by law to undergo a proper education and training for their business."

The Latest Defection from the Pharmaceutical Society in favour of the new Society is that of Mr. I. R. Willows, who has been a member of the Council for many years past. In a letter announcing his resignation from the Council and the Society he regretted that the "ill-advised course pursued by a small section of the members of the Society in altering its constitution" necessitated his taking this step, and expressed his opinion that the Society, instead of continually tinkering at rule-making, required to be placed upon a more liberal and progressive basis.

Mr. H. W. Sadler, a member of the Pharmacy Board of New South Wales, died somewhat suddenly on March 5. Heart disease is the cause certified by his medical attendant. Mr. H. A. Rose, President of the Registered Pharmacists' Society, has been proposed to fill the vacancy on the Board.

The New Pharmacy Board of New Zealand is having a busy time of it dealing with applications for registration and other correspondence. June 25 has been gazetted as the date of the first examination under the Pharmacy Act, 1898, for the purposes of which the Board have decided to adhere to the British Pharmacopœia 1885, with additions. Mr. Bonnington, the President, whose health has not been satisfactory for some time past, is reported to have now made a complete recovery.

Mr. E. F. Turner, Customs Analyst of South Australia, and who, at one time, was actively connected with the educational work of the Pharmacy Board and Pharmaceutical Society, on March 12 accidentally drank some cyanide of potassium, and notwithstanding everything being done that medical skill could suggest, died within a couple of hours.

Toluidene Blue in Ophthalmic Practice.—A one per mille solution of toluidene blue is stated by Veasey to be a useful collyrium in the treatment of acute infectious conjunctivitis. It is perfectly free from any irritant action on the mucous membrane; the blue stain it produces on the skin is easily removed by simple washing with water; it is also a useful substitute for fluoresceine in determining the extent of a corneal ulcer, the affected portion of the cornea being stained an intense blue, while the healthy tissue is not coloured.—*L'Union Pharm.*, **39**, 450, after *Semaine Med.*

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION.

The best attended meeting ever held in connection with this Association was held on Monday night in the Dewsbury Town Hall, there being members present from Derby, Batley, Heckmondwike, Liversedge, Cleckheaton, Mirfield, Savile Town, Ossett, and Batley Carr. Mr. A. Foster presided.

The Secretary (Mr. R. Gledhill) read a letter from the Pharmaceutical Society, suggesting that no action should be taken regarding the Lord Chancellor's Bill at present. When it was deemed advisable to take action the Society would communicate with the Association.

The Chairman said he thought they ought to strengthen the hands of the Society in this matter if they could.

Reference was made to the Association's appeal, copies of which have been forwarded to members of the House of Lords, asking them to oppose the measures in their present form, and Mr. Foster suggested that they ought also to pass a resolution promising assistance to the Pharmaceutical Society in any action it might take. They certainly ought to do something, as the new Bills appeared to annul the Acts of 1852 and 1868.

Mr. W. Stead (Heckmondwike) remarked that if other local associations had done as the Dewsbury Association had done, they would have been able to make an impression on the House of Lords. If they allowed those Bills to be read a second time without protesting vigorously against them, they might as well dispense with the Dewsbury Association.

Mr. S. Ward (Batley Carr) said he thought it was time chemists asserted themselves. The new Pharmacy Bill, if passed, would not benefit them at all. He did not see why chemists should not be placed on the same footing as dentists, surgeons, or midwives, as the chemist was an important man. The public were in the hands of chemists, and the public and Parliament ought to know this. The Privy Council recognised the importance of their calling by controlling the Society's examinations, and they ought to recognise that the time had come when chemists should be protected.

Mr. J. W. Cussons (Ossett), who drew up the appeal, exp'ained that copies had been sent to 110 peers. He had received an acknowledgment from Lord Tweedmouth, who promised to look into the provisions of the Pharmacy Bill, about which he was at present quite uninformed.

Mr. Cussons having been thanked for his work in drawing up the appeal, Mr. R. Broadhead (Batley) spoke in favour of the Pharmacy Act being ended rather than amended.

The Chairman, however, said they would be satisfied if they could get the Act amended as they desired.

Mr. Cussons suggested that they might wait now until they were approached by the Pharmaceutical Society before taking further action,

But the Chairman was of opinion that a resolution should be passed that night.

Mr. Ward eventually moved the following resolution:—

> That we, the members of the Dewsbury and District Chemists' Assoc'ation, will support the Pharmaceutical Society in any action it may take to protect and further the interests of the chemists of the country.

Mr. C. Crook (Mirfield) seconded the resolution, which was passed unanimously.

A discussion next took place respecting the election of members of the Council of the Pharmaceutical Society, and it was ultimately decided to recommend chemists to vote for the following gentlemen:—Messrs. M. Carteighe (London), J. Rymer Young (Warrington), J. F. Harrington (London), and J. Harrison) Sunderland), retiring members; and Messrs. W. S. Glyn-Jones (London), J. Smith (Liverpool), and A. S. Campkin (Cambridge).

Cresamine a New Disinfectant and Antiseptic.—Cresamine, ethylene-diamine-cresol, is a mixture of tricresol with equal quantities of ethlene-diamine. According to Eckstein its bactericidal action is equal to that of sublimate, while its sedative properties render it extremely valuable for the treatment of eczema and inflammatory conditions of the skin. It is employed in the form of a 1:4000 solution, applied by means of compresses, or as a 10 to 15 per cent. ointment, combined with a wool fat basis; a plaster containing cresamine has given good results in cases where salicylates have failed.—*Nouv. Rem.*, **14**, 489, after *Ung. Med. Rund.*

LETTERS TO THE EDITOR.

Mechanical Pharmacists.

Sir,—I have cut the following advertisement from to-day's issue of the *Daily Telegraph* :—

> TWO INVENTORS.—WANTED, for the use of limited liability drug companies, a MECHANICAL ARRANGEMENT, incapable of qualification, to facilitate the delivery across the counter of articles subject to the obstructive provisions of the Pharmacy Act, so as to afford a convenient means of free trade distribution. Very liberal terms offered for a machine that would secure perfect immunity for companies. —Apply to Boots, care of Mr. John Smith, 123A, Dashwood House, Broad Street, E.C.

Truly this is an age of competition and trial for the pharmacist. Company pharmacy I am afraid it will be difficult to stop, as it has existed under certain conditions and therefore become a precedent. Now it will be absolutely necessary for a clause to be added to any draft Pharmacy Bill to prevent the practice of pharmacy by "automatic machines" unless qualified by examination of the appointed examiners of the Pharmaceutical Society. What a vista of the future—the School of Pharmacy and Examination Halls crowded with "automatic machines" thirsting for knowledge, becoming Pereira medallists, and finally members of Council!

Tring, Herts, May 1, 1899. JOHN W. T. MORRISON.

*** Copies of the advertisement have also been received from other readers and the matter is referred to at p. 420. [ED. *P. J.*]

The Forthcoming Council Election.

Sir,—We are drifting into this election in a very lackadaisical manner. True, we have six new candidates, but so far they only compel, by their inactivity, the wonder what on earth they came out for. It would be a graceless work to ask 1, 2, 3, and 4 for adequate reasons for voting for them; still, if they attempted to amplify the meagre and frail temptation to vote which they gave us in their addresses, it might put a little interest into the contest. There is a fifth candidate, however, whose pretensions need examination. I refer to Mr. Glyn-Jones, who will be an acquisition to the Council, in the minds of some; to others he appears an evil to be avoided. He claims our votes primarily on trade union principles, and he proposes to take these into the Council. Again, it is alleged that he is an organiser of proved ability. This must refer to his P.A.T.A. experience (which, by the way, is the last credential for the Council). Well, we will examine that experience. It may have been a mark of genius to have conceived the P.A.T.A. Certainly he has put into it much work and enthusiasm. The country has been stumped; an assistant "organiser" has been engaged in the work; we have been asked to join forces with all and sundry—drug stores, grocers, herbalists, and the rest—to keep up prices; with what result? A cry which appeals forcibly to the masses—"Pay 5s. per annum, and insure profits!" and 3000 respond after years of hard work. Many of these 3000 would be actuated by the same feeling which governed a number of us, viz., "Join; give them a fair chance." Never has Mr. Glyn-Jones touched anything yet but he has somehow managed to grasp the stick at the wrong end. Such a candidate, I submit, it is not desirable to take "in swop" when "crossing a stream" in place of men experienced in the work they will have to do, and whose views are perfectly sound. Pharmacy must aspire, if it achieves anything, to be an honourable calling as distinguished from a trade, for as a trade it has no standing whatsoever before the Legislature.

Blackburn, May 2, 1899. R. L. GIFFORD.

Sir,—May we, through the medium of your Journal, ask all dispensers to use every means in their power to ensure the election of Messrs. Campkin, Druce, Glyn-Jones, Morrison, and J. Smith, who have promised, if elected members of the Pharmaceutical Council, to take vigorous steps to improve the standard of qualification and the position of public dispensers.

R. WELFORD, M.P.S. (Chairman).
W. E. MILLER, M.P.S. (Vice-Chairman).
G. F. FORSTER, M.P.S. (Hon. Secretary).
(*Public Dispensers' Association*).

46, Clarendon Square, N. W., May 3, 1899.

Company Trading in Pharmacy.

Sir,—"Ought we to be satisfied with an enactment requiring that no company shall use the title or carry on the business of a chemist unless all the directors are qualified?" This is the question asked last week by your correspondent, Mr. E. F. Harrison, who seems to have imbibed his ideas from a trade journal which for years has been vilifying the official organ of the Society, and opposing every measure brought forward for the advancement of the Society and for the benefit of our craft. My answer is emphatically, No! By doing so we shall be giving ourselves away entirely, as it would be an easy matter for the large limited companies to get their qualified managers to become directors, even if they were only nominally so, as would doubtless be the case. Thus they would be able to evade the law just as easily as they do at present. Mr. Harrison's letter is in marked contrast to the delightful and forcible address of our versatile councillor, Mr. J. Rymer Young, printed in the same issue. There is a breezy sharpness and crispness in his speech which is quite refreshing to the weary pill-roller. Speaking for myself and also for others with whom I am acquainted, nothing less than the demands formulated by that excellent new member of the Council, Mr. Harrington, and elaborated by Mr. Young, will be acceptable to us. They represent the irreducible minimum. There is only one commonsense way of looking at this matter. The qualification is a personal one, and no company of shareholders has any right to trade on a personal qualification, or to derive any pecuniary benefit from it. The mere borrowing and lending of capital to carry on such business can be satisfactorily arranged without any partnership, in the usual way such moneys are borrowed and lent. The three reasons urged by Mr. Harrison are by no means conclusive. He says, "We have no right to demand more." I think we have every reason on our side for doing so. The mere fact that chemists are general dealers, more or less, is no reason why they should not protect their diplomas. Some doctors keep open shop for the sale of all and sundry things, but this would hardly be accepted as a reason for chemists practising medicine. He asks, in the second place, whether we are likely to get more; When we have tried to get more, and exhausted all our resources, then it will be soon enough to accept a lesser measure of justice. As regards the third reason he advances, chemists have sufficient capital, as a rule, without borrowing money or converting their business into a limited company. In short, we want no company pharmacy of any sort, either limited or unlimited.

Liverpool, May 1, 1899. WALTER A. GRACE.

Dispensing by Unqualified Persons.

Sir,—I have to-day given notice of my intention to move the following resolution at the forthcoming Annual Meeting of the Pharmaceutical Society :—

> That the members of the Pharmaceutical Society assembled in Annual Meeting respectfully express the opinion that the reply sent by the Executive of the General Medical Council to the Privy Council on the question of dispensing by unqualified persons is illogical and disastrous, as it undermines the principle which requires a legal qualification from those who undertake responsible duties involving the public safety; and that the General Medical Council be respectfully invited to co-operate with the Pharmaceutical Society to secure that medicines shall only be dispensed by those holding a medical or pharmaceutical qualification.

The Privy Council has already moved in the matter, and, as a result, the question has to be considered by the General Medical Council, which meets at the end of this month. I think it is of vital importance that the Pharmaceutical Society should seriously deal with the question at this juncture, and my object in calling the attention of your readers to the proposed resolution is to urge every member of the Society who has been trained and qualified to dispense, but finds little dispensing to do, to make an effort to be present and support the motion.

London, May 4, 1899. W. S. GLYN-JONES.

Lithium Carbonate.

Sir,—The statement that lithium carbonate loses its carbonic acid (its *carbonica*, as Professor Andrews wished us to say) at a temperature of 40° C. (see *ante*, p. 368) is not correct. It is quite possible that traces of CO_2 might be evolved at that temperature, due to the presence of bicarbonate in minute quantity, but Li_2CO_3 requires a much higher temperature, probably a "low red heat," for its decomposition. We found that lithium carbonate (commercially pure) lost 0 3 per cent. at 60° C., and there was no further loss of weight even at 150° C.

Edinburgh, May 2, 1899. D. B. DOTT

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Students' Columns (G. C. R.—27/26).—The matter is already in hand for the purpose you kindly suggest.

Botanical (J. W. H.—27/31).—The flower is that of *Stellaria holostea*; the mosses are (A) *Hylocomium triquetrum* and (B) *Thuidium tamariscinum.*

Materia Medica (L. D. E. L.—27/25).—There is no thoroughly up-to-date book on the subject at present, but a new one, by Professor Greenish, is in the press.

Dispensing Mixture (S. H.—27/19).—If half a pint of the mixture is ordered you must send 10 fluid ounces. Indicate the division of the ten-ounce bottle into eight parts by means of a strip of ruled paper attached to it.

Softening Hard Rubber (L. E.—27/16).—Treatment with solution of ammonia and glycerin is often useful, but there is, unfortunately, no means of restoring elasticity to rubber and vulcanite articles which have become hard by exposure to sunlight and air.

"Snowstorms" (J. H.—26/32).—A solution containing suspended scales of lead bromide answers very well for this for filling the toys you refer to. Add an excess of solution of potassium bromide to some solution of lead acetate, dilute freely, boil, and filter while boiling; on cooling, the snow-like scales will fall. Lead chloride similarly prepared gives almost as good a result.

Chromium Compound (C. F. J.—26/18).—The precipitate consists of a basic carbonate of chromium. A definite formula for it cannot be given, since its actual composition varies with the conditions of the experiment. It becomes more and more basic by loss of carbonic anhydride when washed and dried, and hence the dried precipitate only effervesces *slightly* (by comparison with normal carbonates) when dissolved in mineral acids.

Liquid Starch Gloss (L. E.—27/16).—The separation of the spermaceti which you mention is probably due to the mixture not being stirred continuously until it is thoroughly cold. If that be done, the spermaceti will be so finely sub-divided that, even if separation takes place, a shake will again diffuse it through the mixture. Another recipe is: Saturated solution of borax, 2; mucilage of tragacanth, 1; mucilage of acacia, 1. Mix.

Heller's Test (C. F. J.—26/21).—The test known as "Heller's" consists in pouring urine carefully upon the surface of strong nitric acid contained in a test glass, mixing of the two fluids being avoided as much as possible. If albumin be present a white opalescence or precipitate is formed at the junction of the two liquids. You will find the test described fully in Allen's 'Urine Analysis,' Stirling's 'Practical Physiology,' and Halliburton's 'Physiological Chemistry.'

Elixirs of Valerian (L. E.—27/16).—In America both simple and compound elixir of valerian are prescribed. As you do not specify which you require, we give the formula for both:—*Simple Elixir of Valerian.*—Fluid extract of valerian, U.S.P., 1 fluid part; aromatic elixir, U.S.P., 7 fluid parts. Mix and filter. Dose, from a teaspoonful to a tablespoonful. *Compound Elixir of Valerian.*—Valerian root, 2 oz.; cinnamon bark, 1 oz.; anise seeds, ½ oz.; prickly ash berries, ½ oz.; nutmegs, ¼ oz.; oil of sassafras, 1 fl. drachm; essence of vanilla, ½ oz.; alcohol, 90 per cent., 6 fl. oz.; aromatic elixir to make 16 fl. ozs. Macerate the powdered drugs for three days in the alcohol, then percolate, and to the liquid obtained add the other ingredients.

"Limpet" Air-Tight Covers (W. W.—28/7).—Messrs. Day and Co., of Weston-super-Mare, used to advertise the covers, but we do not know whether the firm is still in existence.

Acetylene Gas Generators (H. B. L.—28/8).—You will find a list of the more important firms, with particulars of the apparatus they manufacture, in the *Pharmaceutical Journal* for June 25 last.

Liquor Ferri Phosph. Magnetic (T. S. D.—28/2).—Add a little more citric acid to the solution, followed by the cautious and gradual addition of ammonia. The precipitate you notice will then be dissolved and a green solution obtained.

Shampoo Powder (A. H. P.—27/21).—We cannot make analyses for correspondents. Probably the following will meet your requirements:—Powdered yellow soap, 4; powdered borax, 1; powdered dried washing soda, 1. Mix.

Apomorphine Hydrochloride Solutions (C. F. J.—26/20).—The nature of the decomposition which takes place in the solutions, on keeping, is not known. It is stated, however, that the coloured solutions do not show any appreciable loss of potency.

Tinctura Kolæ (L. E.—27/16).—This is official in the Codex; probably the formula there given is what you require. It is prepared from kola nuts in coarse powder, 1; alcohol, 60 per cent., 10. Macerate for ten days, strain, and press. Dose, 1 to 2 fluid drachms.

Maceration Process of B.P. (W. A.—27/22).—It is not intended that the tinctures should be made up to any definite volume, and no menstruum must be added at the end of the process. The idea underlying the modification is presumably to secure greater uniformity in the finished products.

Dry-cell Battery (E. D.—28/1).—Powdered graphite, 75; black oxide of manganese in coarse powder, 10; zinc sulphate, 5; sal ammoniac, 15; glycerin, 2; water, *q.s.* to mass. Pack the paste made with these ingredients between the zinc and carbon elements.

Mist. Bismuthi et Pepsina (J. T. B.—27/29).—The deposit is unavoidable; it is probably due to the mucus which accompanies the pepsin, and is less if an equivalent quantity of the glycerole of pepsin be employed. In actual practice it is customary to allow the mixture to stand for a week and then to filter it through powdered pumice stone.

The Use of Bromides (J. R. S. C.—27/33).—According to Dr. Lauder Brunton, there is no danger from the use of large doses, or, as he expresses it, from "pushing bromide of potassium," as "even when it is pushed so far that the patient is quite unable to keep awake, and even when this condition is continued for a length of time, no permanent injury follows."

Salicyl-sulphonic Acid (C. F. J.—26/22).—The solution of this acid is used as a test for proteids in urine. It is further useful for discriminating between albumin and globulin on the one hand and between peptone and albumose on the other. The precipitates given by the former become flocculent when the fluid is heated, while those yielded by peptone and albumose partially or entirely dissolve and reappear on cooling.

Composition of Polish for Shoe Soles (A. D.—27/9).—We cannot undertake the analysis of this substance; to obtain for you any information worth having would occupy more time than we can spare. You should send your sample to an analytical chemist. Possibly a solution of egg albumin in water with a little mucilage of acacia, and enough salicylic acid to keep it, will answer your purpose. The darkening of the leather is occasioned by the alkali of the soap solution you have used.

Gold Paint Medium (R. S. L.—27/28).—A dilute solution of guttapercha in benzene (or a mixture of benzene, 3, and chloroform, 1) is used. Another good medium for the purpose is prepared by fusing mastic or dammar resin with sodium carbonate until effervescence ceases, crushing the mass after cooling, and subsequently digesting the coarse powder with benzene. A very small proportion of resin suffices. Alcohol, acetone, or petroleum spirit (benzoline), may also be used, instead of benzene. Experiment with a little of each.

ROYAL COLLEGE OF SURGEONS OF ENGLAND
12 MAY 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Victorium. The new element associated with yttrium, to which reference was made last week in the report of the Royal Society's conversazione, is found in victoria—an earth characterised by a group of lines in the neighbourhood of λ3110. In chemical characters this earth differs from yttria in many respects. Sir William Crookes states that from hot nitric acid solution victorium oxalate precipitates before yttrium oxalate and after terbium oxalate. On fractional precipitation with potassium sulphate the double sulphate of victorium and potassium is found to be less soluble than the corresponding yttrium salt, and more soluble than the double sulphates of potassium with metals of the terbium and cerium groups. Victorium nitrate is a little more easily decomposed by heat than yttrium nitrate, but the difference is not sufficient to make this reaction a good means of separating victorium and yttrium. Fusing the nitrates can, however, be employed advantageously to separate mixed victoria and yttria from the bulk of their associated earths. Tested by its position in a series of earths obtained by fractional precipitation with dilute ammonia, victoria is found to be less basic than yttria and more basic than most of the earths of the terbia group. The atomic weight of victorium is probably near 117. In the purest state in which it has yet been prepared victoria is of a pale brown colour.—*Chem. News*, 79, 212.

Cocainæ Hydrochloras. E. Merck refers to Günther's criticisms (*Pharm. Centralhalle*, 1898, Nos. 1, 22, and 33) of Maclagan's well-known test, and points out that Günther's conclusions have been justly refuted by Messrs. Zimmer and Co. and Messrs. Boehringer and Sons (*Pharm. Centralhalle*, 1898, Nos. 9 and 28), since they were only calculated to place upon the market an inferior preparation, containing the poisonous secondary alkaloid satropyl-cocaine. Paul and Cownley (*Pharm. Journ.* [4], 6, 586) have also urged that any cocaine which does not satisfy Macaglan's test should not be regarded as sufficiently pure for pharmaceutical purposes, and E. Merck's own experience, extending through many years, compels him unconditionally to endorse the conclusions of Günther's opponents. Moreover, it appears to him that in testing cocaine hydrochloride it is also necessary that attention should always be paid to the permanganate test, so as to guard against the presence of another secondary base, viz., cinnamyl-cocaine.—*Merck's Report*, 1898, 51.

Tropacocaine Solutions. E. Merck states that neutral aqueous solutions of tropacocaine keep apparently unchanged for an indefinite period without any special precautions. On June 6, 1897, he prepared a solution of tropacocaine according to Vamossy's prescription:—℞: Tropacocainæ hydrochloratis, 0·3; sodii chloridi, 0·06; aq. dest., 10·0. This solution was kept in an ordinary stoppered bottle, without previous sterilisation, and an examination of its contents was made on December 3 last, *i.e.*, nearly eighteen months later. It proved to be absolutely unchanged. By means of dilute soda solution an oily precipitate of tropacocaine was obtained, which within but a few minutes crystallised out in beautiful colourless needles. This was in itself a proof of its purity, since a slight impurity suffices either to keep the precipitated tropacocaine in solution or to cause it to pass into the crystalline state very slowly. The alkaline fluid was liberated from its last traces of tropacocaine by means of ether, it was then acidulated with hydrochloric acid and again shaken out with ether. The latter, after evaporation, yielded no residue. Benzoic acid was, therefore, not split off, *i.e.*, decomposition had not taken place. The solutions proved equally permanent when heated. Not only did they act perfectly satisfactory when sterilised in flowing steam, but it was also possible to keep them vigorously on the boil in a reflux condenser for some considerable time without altering their constitution. Thus 1 Gm. of tropacocainæ hydrochloras was boiled in 10 C.c. of water for a quarter of an hour. After cooling, a quickly solidifying precipitate of pure tropacocaine was obtained by means of soda solution, and no benzoic acid could be extracted from the acidulated filtrate by means of ether. Even after violently boiling a 10 per cent. solution for a whole hour only unchanged tropacocaine was identified on examination, no products indicative of decomposition being detected. It was only when the boiling water had been allowed to act for two hours that decomposition was noticeable in a slight measure, inasmuch as the ether from the last shaking out of the acid solution yielded, after evaporation, an extremely small residue of benzoic acid. The permanency of tropacocaine is accordingly so great that its solutions may be boiled for an indefinite length of time for purposes of sterilisation. By way of comparison, cocaine hydrochlorate was treated in the same manner, but it proved far less resisting. After boiling a 10 per cent. solution for a quarter of an hour and allowing the solution to cool it was precipitated again with soda and the unchanged cocaine shaken out with ether. Any benzoyl-ecgonine which might have formed by boiling, being insoluble in ether, would necessarily remain behind in the aqueous solution. This was therefore diluted with soda lye in excess and heated so as to isolate the benzoic acid. When cool the solution was acidulated with hydrochloric acid and shaken with ether, which was found, after evaporation, to contain a little benzoic acid, demonstrating the partial decomposition of the cocaine.—*Merck's Report*, 1898, 25.

Eucalyptus Oil. Messrs. Schimmel and Co. point out that there are but few plant genera whose essential oils present such a striking variety in their composition as that of eucalyptus. Cineol, citral, citronellal, cuminaldehyde, and the hydrocarbons cymol, pinene, phellandrene, and some other compounds have been recognised as constituents of the various eucalyptus oils, and further researches on the oils of this interesting genus may bring about the discovery of new constituents. It is thought, also, that it may be possible to succeed in ascertaining whether there exists an organic relationship in the composition of the various oils corresponding to their botanical relations, so that a more adequate classification of the species may become possible. Attention was at first drawn to the oils containing cineol, and they soon found extended application for medication, to the exclusion of other eucalyptus oils. As cineol is the only efficient constituent the quality of these oils depends upon the percentage of cineol present. It has recently been shown that the eucalyptus oils richest in cineol mostly are deficient in pinene and void of phellandrene, while the oils containing phellandrene are proportionately deficient in cineol and of inferior value. For medicinal purposes only those oils can come into consideration which are rich in cineol and void of phellandrene. The qualitative proof of the presence of cineol can be distinctly effected by means of the iodol and hydrogen bromide test, while, unfortunately, no reliable method has as yet been advanced for a quantitative assay; the phosphoric acid method gives incorrect results. Phellandrene can be readily determined by the well-known reaction with sodium nitrite and acetic acid. All oils rendering this reaction are unfit for medicinal

application. It is suggested that all difficulties might be obviated by introducing pure cineol or eucalyptol in place of oils with an ever-changing amount of cineol.—*Bericht*, April, 1899, 23.

Cumarin.

In order to avoid any separation of cumarin from its solutions in consequence of a decrease of the temperature, it is advisable in the preparation of the solutions not fully to apply the maximum quantities of cumarin. If the quantity of cumarin soluble at 0° is taken as a standard, the possibility of any separation at common temperatures is excluded. The solubilities of cumarin, according to Messrs. Schimmel and Co., are given in the following table:—

100 parts of alcohol.	at 0° C.	at 16 to 17° C.	at 29 to 30° C.
of 90 volume per cent. dissolve	7·1 parts	13·7 parts	42 5 parts
,, 80 ,, ,, ,, ,,	6 0 ,,	12·3 ,,	38·3 ,,
,, 70 ,, ,, ,, ,,	4·4 ,,	9·1 ,,	26·0 ,,
,, 60 ,, ,, ,, ,,	3·2 ,,	6 0 ,,	16 0 ,,
,, 50 ,, ,, ,, ,,	1·7 ,,	3·4 ,,	8·9 ,,
,, 40 ,, ,, ,, ,,	0·7 ,,	1·5 ,,	3·9 ,,
,, 30 ,, ,, ,, ,,	0·3 ,,	0·6 ,,	1·7 ,,
,, 20 ,, ,, ,, ,,	0·2 ,,	0·4 ,,	0·8 ,,
,, 10 ,, ,, ,, ,,	0·15 ,,	0·25 ,,	0·5 ,,
100 parts of water dissolve	0·12 part	0·18 part	0·28 part

In place of the old-fashioned tonka beans infusion, an alcoholic solution of cumarin should be employed. While the former infusion was prepared by employing 250 Gm. of tonka beans to 1 kilo of 90 per cent. alcohol, it is completely and better replaced by a solution of 4 Gm. of cumarin in 1 kilo of 90 per cent. alcohol. The amount of cumarin contained in the best grades of tonka beans is generally considered to be 1½ per cent.—*Schimmel's Bericht*, April, 1899, 74.

Citral.

Natural lemon oil contains on the average 7½ per cent. of citral. If for instance 75 Gm. of citral be added to 925 Gm. of oil of lemon, the resulting 1 kilo of oil has double the strength of normal oil of lemon. It is advisable to make oil of lemon the basis of these concentrated citral preparations, because they thereby receive a fresher aroma; such mixtures are specially adapted for making syrup for lemonades, for soda water, etc., because a smaller quantity of the flavour is used and a clearer syrup is obtained. Of the mixture made in the proportions just stated, 20 to 25 Gm. would be sufficient to flavour 100 kilos of syrup, and 10 to 15 Gm., when the mixture is made with double the quantity of citral.—*Schimmel's Bericht*, April, 1899, 73.

Scabiosa succisa as a Cattle Poison.

According to J. Moir, the popular attributes of the "devil's bit" as a poison are well founded. He states that he finds by actual experiment that when the fresh plant is chewed by cattle it causes violent inflammation of the mouth and tongue. Attention was called to this from the inspection of some cattle at first suspected of suffering from foot and mouth disease, but which were ultimately proved to have eaten devil's bit.—*Vet. Record*, **11**, 524.

Absorption of Nutrient Substances by Roots.

According to Herr L. Kny, the absorption of nutrient substances by roots is not effected through the root-hairs alone, but also through the epiderm of the root, in a zone of varying length beyond the region of root-hairs. The evidence was furnished by the absorption of methyl-violet and of nitrates, the latter demonstrated by the di-phenylamin-sulphuric-acid test. The best results were obtained with *Pisum sativum*, *Hydrocharis morsus-ranæ*, and *Zea mays*.—*Ber. Deutsch. Bot. Gesell.*, **16**, 216.

LIQUID EXTRACT OF BELLADONNA.

Notes on the Official Assay Process

BY F. C. J. BIRD.

It is generally admitted that the most troublesome feature of the method of assay prescribed in the British Pharmacopœia for the determination of the alkaloidal strength of liquid extract of belladonna is the emulsification which takes place on shaking the alkaline liquid with chloroform; an emulsification which unduly prolongs the time necessary for the separation of the solvent, and which extends more or less throughout the whole of the subsequent stages of the process.

The cause of this behaviour is not far to seek. Belladonna root amongst other constituents, contains fatty and resinous bodies, and these becoming partially saponified by the alkali, furnish the conditions necessary for the formation of a difficultly separable emulsion. Naturally, the remedy which suggests itself is the removal of the fat and resin. This is easily and quickly accomplished by a preliminary extraction of the acidified liquid with chloroform, a procedure recommended by Dragendorff in his general scheme for the extraction of alkaloids by immiscible solvents, and subsequently in this particular connection by Farr and Wright, and other authorities. A fair amount of acid is necessary, and the contents of the separator should be heated over a steam bath or low temperature gas burner until as hot as the hand can bear, when complete separation takes place almost immediately. The advantages of this preliminary treatment of the acidified liquor with chloroform are that emulsification is entirely prevented, there is rarely a film of fat to interfere with the final solution of the alkaloid, and the alkaloidal residue is frequently so pure that it is obtained in white silky crystals. The following quantities have been found to work well in conjunction with those given in the B.P. process:—

Liquid Extract of Belladonna	10 C.c.
Water	40 C.c.
Diluted Sulphuric Acid	10 C.c.
Chloroform	20 C.c.

Agitate thoroughly, warm, and separate. Wash a second time with

Chloroform	10 C.c.

and again separate. Transfer the mixed chloroforms to another separator and wash with

Diluted Sulphuric Acid	1 C.c.
Water	4 C.c.

Warm, separate, and return washings to the first separator. Reject the washed chloroform. To the aqueous liquid add

Chloroform	10 C.c.
Ammonia	a decided excess.

and continue the process as detailed in the Pharmacopœia, assisting the separation of the chloroformic layer at every stage by the application of heat.

The quantity of acid present in the aqueous layer and the absence of an excessive proportion of dissolved substances in the chloroform are two important factors in promoting the prompt separation of the latter during the preliminary treatment. Less than 10 C.c. of acid is apparently insufficient, separation being sluggish and the chloroform remaining cloudy, whilst nothing is gained by using a larger proportion such as 15 or 20 C.c. The chloroform solution of the resinous and other bodies also must not be too concentrated or emulsification is unavoidable even in acid solution. 20 C.c. and 10 C.c. of chloroform will generally be found sufficient, but more should be added if necessary. Thorough agitation of the contents of the separator for at least half a minute is important, and is much more effective in completely removing alkaloid than the gentle rotation sometimes advocated. It is necessary to wash the chloroform with a little dilute acid, both to remove any

mechanically adhering aqueous liquid and also on account of the tendency which fatty bodies have of carrying small quantities of alkaloid into solution with them.

When working the strict process of the Pharmacopœia the alkaloidal residue (on account of the accompanying traces of fatty impurities) is sometimes found to be slow of solution in the decinormal acid. It is advantageous in such a case to take up the residue with a few drops of chloroform before adding the acid, the solution being gently warmed before titration until all odour of chloroform has disappeared.

The results of several experiments made with the view of comparing the official method of assay, carried out with strict adherence to the instructions of the Pharmacopœia, with the modified process indicated above, show that by the latter a higher percentage of alkaloid is extracted, the difference varying from 0·02 to 0 04 per cent. The B.P. method, as it stands, is open to an additional possibility of error to those hitherto pointed out, viz., that a small amount of alkaloid may be lost through failure to obtain an absolutely sharp separation of the immiscible solvent. With some liquid extracts complete separation may take several days, and as with such samples there is always a temptation to hurry the operation, a fourth treatment with chloroform will almost invariably remove a further small quantity of alkaloid. Hence it is apparent that the removal of those substances which interfere with extraction by the solvent and favour emulsification will generally be attended by a slightly higher percentage yield, especially as under these circumstances the presence of alcohol is hardly likely to affect the result. Whether or not the figures obtained in the determination of the alkaloidal strength of a galenical preparation by any process known to give higher or lower figures than the official one should be corrected to correspond with those of the latter, is a matter which is open to discussion, but it is evident that greater uniformity would have been secured by the insertion in the Pharmacopœia of the words "as indicated by the following method of assay" after the statement of the percentage of alkaloid required in the preparation.

Centinormal soda and decinormal hydrochloric acid are the solutions officially prescribed for the titration. N/50 soda is, however, more useful in practice, as it allows of a titration being completed without refilling a 50 C.c. burette, even if the residue under assay be small, and also keeps the solution from becoming excessively dilute, which is important for exact working, as will be shown later on. The most suitable form of burette is one with a dark enamelled line at the back, and furnished with an Erdmann's float; such an instrument can easily be read to 0·05 C.c., and should be employed with the N/50 solution. Decinormal sulphuric acid, so frequently in requisition for opium assays, etc., will more often be found ready to hand in the laboratory, and may be used in place of decinormal hydrochloric acid.

When the weight of alkaloidal residue is anything below 143 5 milligrammes, 5 C.c. only of decinormal acid need be taken to dissolve it. Of course, if above that amount, 10 C.c. must be employed, as officially directed. The following formula is convenient for ascertaining the weight of alkaloid indicated by the titration when using an N/50 soda solution, or indeed any solution which does not exactly balance decinormal acid:—

$$\frac{\left(\begin{array}{c}\text{No. of C.c. Soda}\\ \text{Equivalent}\\ \text{to 5 C.c. Acid}\end{array}\right) - \left(\begin{array}{c}\text{No. of}\\ \text{C.c. Soda}\\ \text{Used.}\end{array}\right)}{\left(\begin{array}{c}\text{No of C.c. Soda}\\ \text{Equivalent}\\ \text{to 5 C.c. Acid.}\end{array}\right)} \times 0{\cdot}1435 = \text{Required Weight of Alkaloid.}$$

Should the weight of residue exceed 143 5 milligrammes, then 10 C.c. must be substituted for 5 C.c. throughout the formula, and 0·1435 replaced by 0·287. To save separate calculations the figures 0·1435 should be corrected if necessary, both for inaccuracy of the burette or pipette, and also for any deviation of the N/10 acid from standard strength.

The titration of small quantities of alkaloid is an operation demanding accurately standardised and balanced solutions, a sensitive indicator, correctly graduated apparatus and careful working in order to ensure concordant results. The discrepancy often noticed between the weight of alkaloid indicated gravimetrically and volumetrically is more likely to be due to failure in the three first conditions than to impurities in the alkaloidal residue itself. H. Wilson (*P.J.* **60**, 450 has pointed out that the Pharmacopœia makes no reference to any connection which should exist between the two figures, nor does it state what the difference should be. He suggests that the maximum difference should be fixed at 10 milligrammes. This, however, appears excessive, for by attention to the conditions mentioned above, the two results will almost always be found to agree within from 1 to 3 or 4 milligrammes.

The decinormal acid for dissolving the alkaloidal residue may either be measured with a 5 or 10 C.c. pipette or run directly from a burette. In either case the measuring instrument employed should be carefully tested to ascertain if the actual fluid contents correspond with the graduation marked upon it. This is easily done by filling a pipette to the graduation mark with distilled water at 15°·5 C., allowing it to drain in contact with the moistened interior of a light tared flask for thirty seconds, and weighing the water. Burettes are calibrated in a similar manner, the weight of distilled water delivered by each 5 C.c. being taken and any error divided in correct proportion between the intermediate C.c. The corrections should be tabulated and affixed to the burette for reference. The burettes ordinarily supplied, unless specially guaranteed, are rarely accurate, and if not corrected are unfitted for delicate alkaloidal determinations. A common variation in a 5 or 10 C.c. pipette is 0·1 or 0·15 C.c from the truth, which in a determination of 75 milligrammes of alkaloid would mean a deficiency or excess of from 1 to 2 milligrammes.

Cochineal and methyl orange are the indicators usually chosen for alkaloidal work. The qualities desirable for this purpose are great sensitiveness, together with indifference to carbonic acid, soda solution absolutely free from carbonic acid being troublesome to prepare and difficult to keep. Cochineal, the official selection, at first sight would appear to fulfil these conditions, for whilst it lacks nothing on the score of sensitiveness, being decidedly more delicate in its indications than methyl orange, it is stated by Allen (*P.J.*, **51**, 752) to be unaffected by carbonic acid, and by Cripps (*P.J.*, **51**, 512) to possess the great advantage of not being affected by CO_2. But although this may be practically true under ordinary conditions, it is found that when working with highly dilute solutions such as are used in the titration of small amounts of alkaloid, this indicator is distinctly sensible to carbonic acid, which not only interferes with its sensitiveness, but also introduces an appreciable error into the final result. In contradistinction to the foregoing generally accepted statements Sutton mentions ('Vol. Anal.,' p. 35) that cochineal is not so much modified by the presence of CO_2 as litmus, and this well expresses the relation existing between the two indicators. The influence which the presence of carbonic acid has on the sensitiveness of cochineal may easily be demonstrated in the following manner. Take 60 C.c. of distilled water which has absorbed carbonic acid by standing in the laboratory, and tint it with tincture of cochineal. Divide equally between three small beakers. To the

first add two drops of centinormal soda, and to the third two drops of centinormal acid. The distinction in colour between the contents of the three beakers will be barely perceptible, nor will the change in the first and third be sufficiently definite to accurately indicate the end-point in a titration. Repeat the experiment, first removing carbonic acid by well boiling the water, and adding the same quantities of acid and alkali as before. The change in colour is now found to be perfectly sharp and distinct, a marked contrast to the result of the first trial. Another example may serve to show the amount of error which may arise through the presence of carbonate in the centinormal solution of soda.

With Cochineal.		
5 C.c. N/10 acid boiled required	48·7 C.c. soda	approximately N/100 and containing carbonate.
5 C.c. N/10 acid in the cold required	50·9 C.c. soda	
This solution, on boiling, became purple.		
Titrated back with N/100 acid, reduced to	48·8 C.c. soda	
With Methyl Orange.		
5 C.c. N/10 acid required	48·7 C.c. soda	

From the above it appears that the results obtained with cochineal (in the absence of carbonic acid) and methyl orange are identical, which has been fully confirmed by several alkaloidal determinations in which the one indicator has been used as a check upon the other. The error introduced by the interference of carbonic acid has occasionally amounted to as much as 3 or 4 milligrammes in a determination of 75 milligrammes of alkaloid. Barium hydroxide, being always free from carbonate, gives a particularly sharp reading with cochineal, but when soda is employed as directed in the B.P., and it has absorbed any considerable amount of CO_2, the following procedure is recommended in preference to the official directions :—

Ascertain by calculation from the weight of the residue the volume of soda solution likely to be required. Run in about nine-tenths of this, heat to boiling for a few seconds and complete the titration, boiling again if necessary.

Soda solution perfectly free from carbonate can be prepared by precipitating with barium hydroxide, but in practice it is easier to use ordinary solution, and adopt the method mentioned above.

Methyl orange, although not so sensitive as cochineal, possesses the advantage of being unaffected by CO_2, and is undoubtedly the more convenient indicator for belladonna assay. Several points, however, demand attention if absolutely concordant results be desired. Its sensitiveness depends (1) on the neutrality of the salt itself, (2) on the amount of indicator used, and (3) on the degree of dilution of the free acid or alkali present. With reference to the first point, methyl orange, which is the sodium or ammonium salt of the sulphonic acid of para-di-methyl-aniline-azo-benzene, generally the former, is often slightly alkaline. To test this, tint 60 C.c. distilled water with about 4 drops of the B.P. solution of methyl orange, and divide equally between three beakers. Add to the first and third 1 drop of N/50 acid and soda respectively. This should produce a marked difference between the three beakers, the contrast between Nos. 1 and 2 being perfectly distinct, although not so marked as that between Nos. 2 and 3. If this is not the case, decinormal acid must be added drop by drop to 100 C.c. of the methyl orange solution until, on trial, the contrast between the three beakers is seen to be sufficiently great. The indicator is then at its maximum sensitiveness. The degree of dilution has an important bearing on sensitiveness. If, for instance, several quantities of 10 C.c. of water—containing respectively 1, 2, 3, 4, 5, and 6, and so on, drops of indicator respectively—be each treated with one drop of N/50 acid, a point will be found at which the contrast to the tint of the neutral solution is most marked, The amount used should be noted and the indicator always used in the same proportion, whatever be the volume of solution, which can be approximately ascertained beforehand from the weight of the alkaloidal residue. For the B.P. solution 1 drop to each 15 C.c. is about right. Methyl orange in solution at its neutral point is of a pure yellow colour, inclining to orange ; a minute excess of alkali turns it to a lighter, clear yellow, with greenish tinge ; and a minute excess of acid changes it to a yellow, strongly inclining to brick-red, differences of shade rather than of actual colour marking the end of the reaction in delicate determinations.

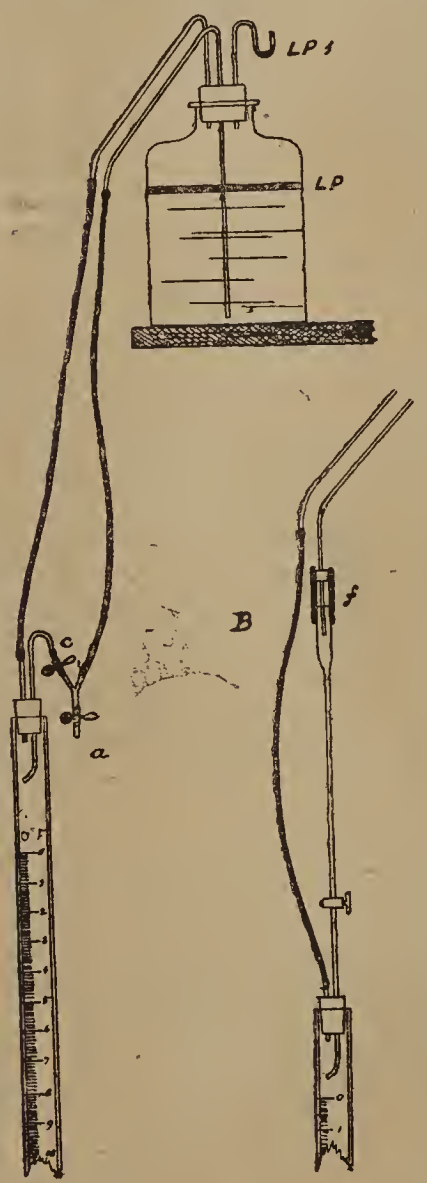
Solutions of pure atropine in chloroform were evaporated as in the B.P. process, weighed, and titrated as follows, the soda solution containing carbonate,

Weight of Residue.	Found by Titration.
66 Mgms. with methyl orange as indicator	66 Mgms.
62 Mgms. with cochineal in the cold	58 Mgms.
65 Mgms. with cochineal boiled.....	64·8 Mgms

Sensitiveness is largely dependent on the proportion of free acid present. The volume of solution should, therefore, be kept as small as possible. On drop of centinormal acid added to varying volumes of liquid tinted with methyl orange, produced the following effects when compared with the neutral solution :—

Volume of liquid	1 C.c.....	Intense contrast, deep pink colour.
,, ,,	5 C.c.....	Faint contrast.
,, ,,	10 C.c.....	Difference only just distinguishable.
,, ,,	20 C.c.....	Doubtful.
,, ,,	40 C.c.....	Quite inappreciable.

Methyl orange is capable of giving extremely accurate results if attention be paid to the points already mentioned, viz., neutrality in the salt itself, a strength of 1 drop to each 15 C.c. of liquid, and as great a concentration as possible of the solution under titration. Precision in determining the end-point of the reaction is facilitated by working side by side with two beakers, each containing water tinted with methyl orange equal in volume to the final volume of the solution being titrated, the one beaker neutral and the other acidified with 1 drop of N/50 acid.



The accompanying diagram illustrates a simple continuous supply arrangement, which can be adapted to any ordinary burette and which will well repay the trouble of fitting up. It is similar to that recommended by Sutton, but in this modification the supply tube enters at the top of the burette, its end being curved so as to direct the stream of liquid against the side of the burette and preven the formation of air bubbles. This is preferable, as it leaves the lower end of the burette free, and any leakage through the supply pinch-cock *c* is easily seen. The storage bottle is of green glass, if for soda, and a little liquid paraffin is placed in the tube LP1 to form an air valve, a layer of liquid paraffin being also poured on the contents of the bottle. N/50 soda kept for any length of time in contact

with a rubber tube becomes coloured and alters in strength; whenever, therefore, the apparatus has stood a day or two without being used, the rubber tube is emptied by the pinch-cock *a* attached to the glass Y tube. For the N/10 acid burette the layer of liquid paraffin LP and the pinch-cock *a* may be dispensed with. The flexibility of the rubber tubing is a great advantage, but if it be desired to avoid contact with rubber the method of connection shown at B, which is sufficiently flexible to prevent breakage, may be adopted. The extremity of the supply tube dips into the enlarged extremity of another tube furnished with a glass stop-cock (which should be well lubricated with soft paraffin) communicating with the burette, and a short piece of wide rubber tubing connects the extremity of the enlarged tube with a cork carried by the supply tube, the ends being secured air-tight. The imprisoned air prevents the liquid rising above the orifice of the supply tube.

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

(*Continued from page 363.*)

CONVOLVULACEÆ.

Convolvulus.—Latin, *convolvo*; to entwine. The name indicates the twining character of most of the plants of this genus. *C. scammonia*, Linn. Σκαμμονία (scammonia) was the Greek name for the plant.

Ipomæa.—Greek, ἴψ (ips), a worm particularly destructive to the vine, is used by Linnæus for the convolvulus. The word ἶψος (ipsos), ivy, may have some connection. ὅμοιος (homoios), like, the genus being very similar to convolvulus in habit and appearance. *I. purga*, Hayne. *Purga*, the Spanish name of jalap, is derived from Latin *purgo*, to purge, indicating the medicinal action of the drug. Jalap receives its name from Jalapa, a city in the Mexican state of Vera Cruz, where the root is collected.—*I. simulans*, Hanbury. So named from its close resemblance to the plant yielding the true jalap, *I. purga*. It is the source of Tampico jalap, so called from the seaport of Tampico, in Mexico, whence it is exported.—*I. orizabensis*, Ledanois. This plant, yielding another variety of jalap, is found in the neighbourhood of Orizaba, a city in the midst of a very fertile district to the S.E. of Mexico.

SOLANACEÆ.

Solanum.—The origin is doubtful; by some it is attributed to the Latin *solor*, to soothe, on account of the sedative action of some species. *S. dulcamara*, Linn. Latin, *dulcis*, sweet; *amara*, bitter. It was formerly called *Amara dulcis*, and a common English name of the plant is bitter-sweet. The dried young branches, of which the drug consists, have at first a rather bitter taste, which afterwards becomes sweet.

Capsicum.—Latin, *capsa*, a box, in allusion to the conspicuous pods forming the fruits of these plants. *C. minimum*, Roxb. Latin, smallest. The pods are smaller than those of other species. —*C. annuum*, Linn. Latin, annual. This herbaceous plant is usually an annual.

Nicotiana.—Nicotiane was the name first given to the tobacco plant in France in honour of Jean Nicot, the French ambassador at Lisbon, who in 1560 introduced the plant into France. *N. tabacum*, Linn.—A latinised form of *tobaco* the name originally employed by the American Indians for the pipe used by them for smoking.

Datura.—A latinised form of an Arabic name for some plant of this genus. *D. stramonium*, Linn. The origin of the name is doubtful; it was originally applied to another species of Datura. The English synonym, thorn-apple, indicates the peculiar character of the fruit, which is covered with spines ¼ inch or more in length.

Atropa.—From its very poisonous character it was named after Atropos, one of the three fates, whose duty it was to cut the thread of life. *A. belladonna*, Linn. Italian, beautiful lady. The plant has the property of dilating the pupil, and has been used for that purpose by Italian ladies in the middle ages to give an increased brilliancy to their eyes.

Hyoscyamus.—The Greek name for the plant was ὑοσκύαμος (hyoscyamus), derived from ὗς (hus), a pig, and κύαμος (kuamos) a bean. The fruit was said to be eaten by pigs with impunity. *H. niger*, Linn. Latin, black. The corolla is reticulated with dark purple veins, which distinguish this from other species. Henbane indicates the poisonous effect of the seed upon poultry.

Duboisia.—The genus is named after Louis Dubois, the author of various botanical works. *D. myoporoides*, R. Brown. The plant is somewhat similar in appearance to another Australian shrub, the myoporum.

SCROPHULARIACEÆ.

Digitalis.—Latin, *digitus*, a finger. The tubular, bell-shaped corolla bears some resemblance to the finger of a glove. The *digitabulum* was a finger-cap used in gathering olives, and may have suggested the name to Fuchs, the German botanist who named the genus. *D. purpurea*, Linn. The corolla is of a purplish-crimson colour. Foxglove, formerly folksglove, indicates that the flowers were supposed to be used by the "folks" or fairies, who occupied so important a place in mediæval lore. In Germany it is known as *fingerput* (finger-hat), in France *gants de Notre Dame* (gloves of Our Lady). In the north of Scotland it is known as "Deadman's bells," while in the lowlands it is called "bloody fingers."

Veronica.—The genus is said to be named in honour of St. Veronica (*vera icon*, the true image), who it supposed to have suffered martyrdom under Nero. *V. virginica*, Linn. This plant, the source of Leptandra, or Culvers Root, is a native of Virginia and others of the eastern United States.

PEDALIACEÆ.

Sesamum.—The following plant has been cultivated for the sake of its oily seeds from the earliest times, and was known by the Egyptians as *Semsent*, the Arabic name being *Simsim*. *S. indicum*, D.C. This annual herb is indigenous to India.

LABIATÆ.

Lavandula.—Latin, *lavo*, to wash. Lavender water has long been used as a perfume for baths. *L. vera*, D.C. Latin, true. The species has for long been cultivated as the source of true lavender. By Linnæus it was considered a variety of *L. spica*.—*L. spica*, D.C. French *aspic*, from Latin *spica*, an ear of corn, and hence a head or tuft of flowers. The inflorescence of lavender is a spike.

Mentha.—The Greek μίνθη (minthe) is the classical name for the mints. It is said to be derived from the nymph Menthe, whom Proserpine in jealousy transformed into this plant. *M. pulegium*, Linn. *Pulegium*, or *Puleium* of the ancient Romans, is believed to have been this species. It is derived from *pulex*, a flea, as according to Pliny the blossom "fresh gathered and burnt kills fleas by its smell." The English name, pennyroyal, is the "Pulioll-royall" of the old herbalists.—*M. viridis*, Linn. Latin, green. The common garden mint used as a condiment. Spearmint probably indicates the narrow, elongated shape of the spikes which form the inflorescence.—*M. piperita*, Smith. From Latin, *piper*, pepper. This and the common English name, peppermint,

indicate the hot aromatic taste which is first produced by the oil which is found in all parts of the plant. This hot taste is followed by a sensation of coldness.—*M. arvensis*, D.C. Latin, pertaining to fields. The plant is found both in cultivated fields and in wild places. The varieties *piperascens* (becoming hot) and *glabrata* (smooth) are the sources of Japanese oil of peppermint, from which menthol is chiefly obtained.

Origanum.—The Greek ὀρίγανον (origanon) probably referred to some plant of this genus. It is supposed to be derived from ὄρος (oros), a mountain, and γάνος (ganos), beauty. Some species are found in mountainous districts, where their graceful flowers and aromatic perfume add to the charm of the district. *O. vulgare*, Linn. Latin, common. The English name, marjoram, is derived from the Latin, *amaracus*, the origin of which is doubtful.

Thymus.—Greek, θύμος (thumos), thyme. It is generally supposed to be derived from θυμος (thumos), the soul, hence courage; the aromatic odour is supposed to revive the spirits. It may be connected with θύω (thuo), to offer sacrifice, and applied to this or some other aromatic plant used in sacrificial rites. *T. vulgaris*, Linn. Latin, common.

Salvia.—This is the old Latin name for sage, and is derived from *salveo*, to be well. In ancient times the medicinal virtues of the plant were more esteemed than in the present day. *S. officinalis*, Linn. Latin, officinal. The common sage has long been used for culinary and medicinal purposes.

Rosmarinus.—Latin, *ros*, dew; *mare*, the sea. The plant is a native of the Mediterranean district, and is usually found in warm situations near the coast. *R. officinalis*, Linn. Latin, officinal. Rosemary is much used as a perfume.

Monarda.—Nicolas Monardes was a distinguished physician of Seville, who published in 1569 an important work on the then known medicinal products of the recently discovered continent. The Monardas, being plants found exclusively in North America, were named in honour of him. *M. punctata*, Linn. Latin, *punctum*, a point. The under surface of the leaf is dotted with glands containing the essential oil.

Marrubium.—This is the Latin name for horehound used by Pliny. Its origin is uncertain, but it is supposed to be derived from the town of Marrubium, in Latium, in the neighbourhood of which the plant is plentiful. *M. vulgare*, Linn. Latin, common. Horehound is probably a corruption of its Anglo-Saxon name, *hâra hune*. The prefix *hâra* means grey, and refers to the white downy hairs with which the plant is covered. *Hune* implies strong-scented.

Leonurus.—From the Greek λέων (leon), a lion, and οὐρά (oura), a tail. The spikes of flowers were supposed to bear some resemblance to a lion's tail. *L. cardiaca*, Linn. Latin, pertaining to the stomach. The plant is used to promote digestion. Motherwort, the common English name, is said by Parkinson to be so called from being "of wonderful helpe to women in the risings of the mother," or hysterics.

BORAGINACEÆ.

Borago.—Borago is said to have been altered from Corago; Latin, *cor*, the heart; *ago*, to move. Pliny says that wine in which borage has been infused cheers the heart. A more probable derivation is from the Low Latin *borra*, rough hair, the leaves being furnished with bristly hairs. *B. officinalis*, Linn. Latin, officinal. This is the source of medicinal borage.

Anchusa.—Greek ἀνχούσα (anchousa), the anchusa, hence the dye prepared from it. The following species has long been used as a dye, and was at one time esteemed as a paint for the face. Alkanet is the Spanish *alcaña*, from the Arabic "*al henna*," the henna. *A. tinctoria*, Linn. Latin, *tingo*, to dye. The source of the dye alkanet.

POLYGONACEÆ.

Polygonum.—Greek, πολύς (polus), many; γόνυ (gonu), a knee or joint. The numerous joints or knots in the stem are characteristic of many species of this genus. *P. bistorta*, Linn. Latin, *bis*, twice; *tortus*, twisted. The rhizome, which has long been known as bistort, is twice-bent.

Rheum.—The origin of rheum and rhubarb is Ῥά (rha), the classical name for the River Volga, on the banks of which the plant may have been indigenous; more probably the fact of the trade route from Southern Siberia crossing the Volga, or Rha, is responsible for the name. *R. officinale*, Baillon. Latin, officinal. One of the sources of medicinal rhubarb.—*R. palmatum*, Linn. The leaves of this species are distinctly palmate in shape. *R. rhaponticum*, Linn. *Rha-ponticum*, the Pontic rhubarb. The plant is a native of Southern Siberia, but was probably brought *via* the Black (Pontic) Sea. Dioscorides describes rhubarb as *Rha ponticum*. Rhubarb appears to mean the barbarian Rha-plant.

MYRISTICACEÆ.

Myristica.—Greek μύρον (muron), a distilled perfume, referring to the aromatic volatile oil yielded by species of this genus. *M. fragans*, Houttuyn. Latin, fragrant. The volatile oil is here referred to. Nutmeg means the "musk nut" from early French *muge*. Latin *muscum*, musk.

LAURACEÆ.

Nectandra.—Schomburgk, who first describes the following species, mentions that glandular bodies are found at the base of the three inner stamens, and the word is probably coined from the Greek νέκταρ (nectar), contained in the glands, and ἀνήρ (aner), a man, hence stamen. *N. Rodiæi*, Schomburgk. Named in honour of Hugh Rodie, a naval surgeon, who settled in Demerara and discovered the medicinal virtues of the bark. Bebeern is the native name of the tree. The timber, known as greenheart, is largely used for shipbuilding, owing to its freedom from attack by the shipworm *Teredo navalis*.

Sassafras.—The name was given to the tree by Monardes, the Spanish botanist. It is derived from the Spanish *Salsafras*, saxifrage, presumably from reputed similarity in medicinal properties. Latin, *saxum*, a stone; *frango*, to break. This may refer to the habit of the saxifrages of growing in rocky situations, but the name is supposed to have been given originally to some plant which was used for breaking up stone in the bladder. *S. officinale*, Nees. Latin, officinal. The source of the medicinal sassafras bark.

Laurus.—This is the classical name for the bay laurel. It appears to be connected with the Celtic word, *blaur* (pronounced laur), green; the laurel being an evergreen shrub. *L. nobilis*, Linn. Latin, famous. The name indicates the use made of this, the true laurel in classical times, the leaves being employed to make wreaths, with which the victorious generals were crowned. The term bay, which is also applied to the plant, appears to be derived from the Latin, *Bacca*, a berry. The fruits are commonly known as bay berries.

Cinnamomum.—Theophrastus uses the Greek κινάμωμον (kinamomon) for cinnamom. It was introduced by the Phœnicians, who probably derived the word from the Arabic equivalent, *Kinamon*. *C. camphora*, Nees. Camphor is derived from the Arabic equivalent, *Kâfur*, which is said to have its origin in the Malay word Kápúr, meaning chalk.—*C. cassia*, Blume. The Greek κασία (kasia) was the name of an aromatic bark, probably derived from this tree. The word appears to be Phœnician in origin.—*C. zeylanicum*, Breyn. Latin, Ceylonese. The plant is a

native of and is also largely cultivated in Ceylon. It is the source of true cinnamon.

URTICACEÆ.

Ficus.—Latin, *ficus*; Anglo-Saxon, *fic*, the fig, have probably a common origin. *F. carica*, Linn. Latin, *carica*, a dried fig. They were produced in the province of Caria, in Asia Minor.

Morus.—Latin, *morus*, the mulberry tree; Greek, *μόρον* (moron), the black mulberry. *M. nigra*, Linn. Latin, black, from the nearly black colour of the ripe fruit.

Humulus.—The genus was named by Linnæus, who is supposed to have derived the word from Latin *humus*, the soil, because the plant, unless supported, remains prostrate on the ground. *H. lupulus*, Linn. *Lupulus* is a contraction of *Lupus salictarius* (Pliny), the wolf of the willows. Hops used to grow amongst the willows, which they are said to have killed by twining round them, and were thus supposed to be as destructive to them as the wolf to the flock. It may simply indicate that they were as tenacious of the willow as the wolf of its prey. Hop is believed to be derived from the Anglo-Saxon *hoppan*, to climb.

Urtica.—Latin, *uro*, to burn; indicating the burning sensation produced by the formic acid in the stings. *U. dioica*, Linn. The flowers are diœcious. (See *Bryonia dioica*).—*U. urens*, Linn. Latin, *uro*, to burn; being a repetition of Urtica.

Cannabis.—Greek, *κάννᾰβις* (cannabis), hemp. *κάννα* (canna) is the Greek word for reed, and was applied also to woven materials prepared from it. *C. sativa*, Linn. Latin, cultivated. The variety *indica* is produced in India.

Ulmus.—The Latin for an elm tree. It appears to be connected with the Saxon *elm* or *ulm* of the same meaning, the derivation of which is not known.—*U. campestris*, Linn. Latin, pertaining to a field. The common elm, so frequently seen in lanes and hedgerows between fields. *U. fulva*, Michaux. Latin, tawny. The under surfaces of the leaves and the young twigs are thickly pubescent with reddish-coloured hairs. It is known as the slippery elm on account of the sticky mucilaginous matter contained in the inner bark which is readily removed by water.

CUPULIFERÆ.

Quercus.—The Latin name for the oak-tree. Various improbable suggestions have been made as to the derivation of the word, but the etymology is unknown. *Q. robur*, Linn. The Latin for a species of very hard oak. It is probably connected with the Greek root *ῥω* (rho), indicating strength. *Q. lusitanica*, var. *infectoria*, A.DC. The species derives it name from Lusitania, the ancient name for the western part of the Spanish Peninsula, one of its many habitats. The variety *infectoria* (Latin, *infector*, dyeing) is spread over a wide area. The galls of commerce are obtained from trees growing in the province of Aleppo, in the north of Syria. They are largely used in the process of dyeing.

JUGLANDACEÆ.

Juglans.—Latin for a walnut. It is usually supposed to be a contraction of *Jovis glans*, the nut of Jupiter; but more probably it is derived from *jungo* (to join), and *glans*—*i.e.*, the joined nut, from the shell being divided into two parts. *J. regia*, Linn. Latin, royal, from the high esteem in which the walnut has long been held. Walnut is the Anglo-Saxon *Wealh-hnut*, the foreign nut.—*J. cinerea*, Linn. Latin, ashy-grey. Probably so-called from the downy hair on the leaves giving the foliage a grey appearance. It is the source of butternut bark. Butternut is so-called from the oily nature of its fruit.

(*To be continued.*)

THE EMPLOYMENT OF UNQUALIFIED DISPENSERS.

A question of considerable public importance was addressed by Major Rasch to Sir John Gorst, as the representative of the Privy Council, on Thursday last. It had reference to the employment of unqualified dispensers by medical practitioners, and was founded upon an inquest held at the beginning of the year at Heaton Norris, where it was proved that a patient had lost his (?her) life through a mistake on the part of the unqualified dispenser employed by his (?her) medical attendant. The mistake took the form of introducing 50 Gr. of morphia into a mixture in place of 1½ dr. of liquor morphinæ. In reply to Major Rasch's question, Sir John Gorst gave the following answer:—

> The Privy Council has been in communication with the General Medical Council on the subject. The Executive Committee of that body, while admitting that occasional accidents may arise from the employment by qualified medical practitioners of careless or incompetent dispensers, consider such cases to be very rare, and believe that the best protection is afforded to the public by the responsibility of the practitioner for the acts or defaults of the servants whom he employs. Instances of such mistakes are not confined to dispensers employed by medical practitioners.

Now, with all respect to the august body concerned, the opinions here attributed to the Executive Committee of the General Medical Council contain much matter for criticism. Nor does the Executive Committee itself appear to be entirely satisfied with its own pronouncement, for I understand that it has referred this question to the next general meeting of the Council. In this it has done well, and it is to be hoped that the profession will give serious and unbiassed consideration to the question. The Executive Committee "consider" that accidents in doctors' dispensaries are "very rare." It would be more reassuring if they could give some solid grounds for this belief, but as it is difficult to see how they can have any information on the subject, it seems more probable that the belief is a mere guess. There is only one way in which accidents of this character can become publicly known, and that is by a death and an inquest; and the chances are that any accident which stops short of fatal results would remain for ever a secret in the breast of the doctor concerned, even if he discovered it himself. Even where such an accident leads to fatal results, can we ever be sure of the truth becoming known? With whom does it rest to certify the cause of death? With the doctor himself, who is directly responsible for the accident. Doctors are, of course, a highly honourable body of men, and ready to make any sacrifice for the benefit of their patients; but when the patient is dead, and nobody but the doctor knows what caused his death, and the exposure of the facts will involve the doctor in a scandal which may have disastrous results on his practice, to hold that he may be possibly tempted to keep the secret to himself is only to say that human nature is as strong in doctors as in the rest of mankind. We cannot expect any man, even a member of an honourable profession, to voluntarily sign his own death warrant. For these reasons I do not think much weight can be attached to the opinion of the Executive Committee of the General Medical Council that such accidents are very rare. They may be rare or they may be frequent, but which it is neither the medical profession nor the public have any certain means of knowing.

That being so, it follows that equally little weight can be attached to the opinion of the Committee that "the best protection is afforded to the public by the responsibility of the practitioner for the acts or defaults of the servants whom he employs." As long as it rests with the practitioner himself to say whether the acts or defaults of his servants shall become known to the public, or even to his own patient, the responsibility of the medical practitioner counts for uncommonly little. Precisely the same argument might be applied to the druggist or pharmaceutical chemist. Both of them, like

the rest of us, are in the eye of the law responsible for the acts and defaults of their servants. Nevertheless, the law has thought it desirable in the interests of the public to impose a further safeguard, and has enacted that persons who act as pharmaceutical chemists and persons who dispense poisons in shops shall be possessed of certain professional qualification. As a matter of logic there can be no reason why the same qualifications should not be insisted upon in a doctor's dispensary. We all share the horror of Mr. Pickwick when he heard that the chemist had left his shop in charge of the very nice errand boy who believed that Epsom salts were oxalic acid. We may reasonably feel the same horror at the idea of draughts and pills being compounded in a doctor's dispensary by a youth whose knowledge of drugs is equally rudimentary. I do not mean to impute to the medical profession as a body that they take no proper precautions to see that their dispensers are up to their work. But we have got to remember the difficulties which beset the struggling members of the profession, more especially those who have large and unremunerative practices among the poorer classes. I have heard of a doctor of this class seeing a hundred or more poor patients in the course of an hour or so in the evening, writing a hurried prescription for each of them, and all these being made up by the dispenser while the patient waited. It needs a very smart and well-qualified man to do work like this without ever making a mistake, and yet it is the poor man's doctor who is the least likely to be able to afford a really smart and well-qualified man.

For another reason the General Medical Council will find it extremely difficult to resist a demand in this direction at the present moment. It will be remembered that only a few months back the Council issued a very sharp reminder to the profession generally on the impropriety of employing unqualified assistants. This order resulted—somewhat unjustly in my opinion—in large numbers of deserving men with a considerable knowledge of medicine, acquired by years of experience, although destitute of technical qualifications, being deprived of their means of livelihood. When it was suggested that the step taken by the Medical Council was prompted merely by "trade union" policy—that is to say, by the desire to protect the qualified practitioner from the competition of unqualified men—the organs of the profession retorted with asperity that the public interest, and the public interest alone, was what the profession had in view. If so, I would ask wherein lies the difference between the unqualified assistant and the unqualified dispenser. Common sense will tell anybody that the position is the same in the two cases — indeed, if anything, the unqualified dispenser is more likely to be dangerous to the public than the unqualified assistant, who, in the vast majority of cases, has always been restricted to work which he was perfectly competent to perform. It remains to be seen whether the General Medical Council, when this matter comes before them at their next general meeting, will look at it from the point of view of the public or from the point of view of their own pecuniary and professional interests. If they fail to take any action, then it will be the duty of the Government to consider whether the doctor's dispensary and the chemist's shop should not be placed on the same footing in the eye of the law.—*Truth.*

Lithium Formate in Rheumatism.—Hubner suggests the employment of lithium formate in gout and rheumatism. It has previously been stated that the stings of bees applied locally are effective remedies in these cases. This has suggested the less painful and more convenient method of administering the acid nternally as the lithium salt.—*Rev. Med. Pharm.*, 5, 260.

REVIEWS AND NOTICES OF BOOKS.

Practical Methods of Urine Analysis for Chemists and Druggists. Pp. 58. Price 1*s.* 6*d.* London: *Chemist and Druggist* Offices. 1899.

If a chemist and druggist is to obtain credit and profit from work in urine analysis, we would suggest that he should get his information and facts from some other source than the work under consideration. The author's name is not attached to the book, but he is stated on a fly-leaf to be "a pharmacist who has had nearly a quarter of a century's daily experience in the practical application of the methods described herein." He would have been well advised if he had confined his attention to developing the somewhat scanty and defective practical details of the methods described. He has, however, launched out into physiological and pathological theories, which in one instance carries us back to the time of Lavoisier and the discovery of oxygen. In fact he may be regarded as a pathological Rip van Winkle in his account of the cause and origin of the appearance of sugar in diabetic urine. Thus on page 14 we find the following grotesque statement: "In health the portal circulation carries off from the stomach starchy matters, which are taken to the liver and converted into glucose. This glucose, after elaboration in the hepatic cells, is then conveyed (as hepatin) through the hepatic vessels, the inferior vena cava, and the right side of the heart to the lungs, where, meeting with the oxygen of the air, it is consumed, carbon dioxide and water being given off. In diabetes mellitus this does not occur, for after exposure to the air, in the lungs, it passes on to the left side of the heart, containing some or all of the sugar which is subsequently found in the urine."

Such a statement as that quoted cannot be discussed: in the present state of knowledge it is simple nonsense. Again, on page 13, we are told that albumoses "are bodies closely related to albumen, and in urine may appear as peptones, globulin, etc." After being told that peptone and globulin are particular varieties of albumose, the "etc." is surely superfluous. Such statements as those just quoted, and others of a similar nature to be found elsewhere, are particularly harmful in a book offered to pharmacists whose training hardly fits them for criticising matters of this kind. Turning to the other side of the work—the "practical" processes—we regret to state that these show an absence of just those practical details and precautions which would be most useful to the tyro in urine analysis. Thus, under the determination of sugar by Fehling's solution, the conditions under which the process yields the results desired are not expounded, and the operator is told to dilute always, apparently without reference to its sugar contents, 10 C.c. of urine to 100 C.c. with water.

Under the fermentation test for sugar the operator is told to place the urine and yeast in a bottle, *to cork it well, and place it on the hob* for twenty-four hours. No directions as to wiring down the cork and standing clear while it bursts are, however, given, and no blank experiment with yeast is directed to be simultaneously carried out. Gerrard's useful cyanide modification of the Fehling method is not mentioned. No word of warning and no information is given regarding those samples of urine which reduce Fehling's solution and yet contain no sugar. The phenyl-hydrazine test is not even mentioned.

The author throughout the book uses the term "estimation" for quantitative processes which are really "determinations"; but that, perhaps, is a minor point in the present case.

The sections describing the polariscope and spectroscope are

worthless, and suggest the idea that the author, knowing little about either instrument, has incorrectly paraphrased a description from some text-book. The diagram on p. 51—apparently original—is very funny ; it shows a pencil of parallel rays of light entering the prism of a spectroscope and emerging from a *point* on the other face of the prism in the form of a sharply diverging cone. Moreover, no *practical* application of either polariscope or spectroscope is described.

We regret the appearance of such a book as this ; it cannot enhance the appreciation in which the physician holds the assistance of the pharmacist in such work as urine analysis. Whatever information of value it contains, the errors of omission and commission—only a few of which we have mentioned—are such as to unfit it altogether for its intended purpose.

Las Aguas de Mondariz Album-Guía. Published for the Proprietors of the Spa by Rivadeneyra. Madrid. 1899.

The virtues of the numerous mineral springs existing in Spain are practically unknown to English doctors, and are even by the Spanish themselves neglected for the more fashionable but by no means more efficacious continental spas of France or Germany. It is refreshing to learn, however, that the Spanish public is gradually having brought home to its notice the fact that, as regards a good bicarbonated effervescing water, there is now no necessity to travel to Vichy, for there exists at Mondariz, in Galicia, a spring, or rather springs, capable of rendering the same benefits as the justly celebrated French waters. From the book under notice we learn that in 1873 Enrique Peinador, the proprietor, founded a small establishment near the springs, and with the assistance of Dr. Pondal, who had made a careful study of hydrotherapeutics, set himself to demonstrate the value of the waters. His success has been such that in 1897 the present building was reared, complete in everything which goes to make an up-to-date hydropathic establishment, if one is to judge by the photographic illustrations in the 'Guide' and by the testimonials it contains from some of the best known political and literary celebrities of Spain. Señor Peinador in the publication of his guide has enlisted the collaboration of most of his literary guests, and has the pleasure of therein printing articles in prose and verse by Emilio Castelar, the Liberal—a friend of Gladstone's and one of Spain's greatest living orators ; Gaspar Nuñez de Arce, poet and patriot ; José Echegaray, the dramatist ; Estremera, Grilo, Vital Aza, and, lastly, the gifted authoress, Emilia Pardo Bazán, who, as a native of Galicia, is well qualified to describe its beauties. Doctors Pondal, Zancudo, Espina y Capo, and Fernández Osuna contribute several valuable papers on dietetics, indigestion, skin affections, and diabetes, showing the effect of the waters and advising as to their correct administration, both internally and as baths. The scenery of the country is picturesque, reminding one of the less mountainous parts of Switzerland, and the climate is warm but temperate, even in the middle of summer, thanks to the proximity of the Atlantic Ocean. We should say that it would be worth while for English visitors to try Mondariz ; the terms are moderate, it can easily be reached by steamer to Vigo, and in the season, June to September, it is the resort of a select but not excessively fashionable concourse of Spanish and Portuguese society. The general get-up of the guide does credit to the publishers, and the photographs by Compañy, of Madrid, convey a good idea of the beauties of the country and the sumptuous arrangement of the hydropathic establishment.

THE STUDENTS' COLUMNS.

FLORAL CALENDAR FOR MAY.

The majority of the plants in the April list are still in blossom, the chief exceptions being *Prunus amygdalus*, *Tussilaga farfara*, *Corydalis bulbosa*, and some species of *Salix*, of which the fruit is now ripening.

Amaryllidaceæ.—*Leucojum æstivum.*

Anacardiaceæ.—*Anacardium occidentale.* B.G. (*P.J.* [3], **10**, p. 953). *Mangifera indica.* B.G.

Araceæ.—*Arisarum vulgare*, B.G.

Berberidaceæ.—*Berberis dulcis.* F. *B. vulgaris*, *Leontice leontopetalum.* B.G.

Boraginaceæ.—*Myosotis sylvatica*, *Anchusa sempervirens*, *Symphytum caucasicum.* F. *Mertensia pulmonarioides.* F. *Pulmonaria angustifolia* (*P.J.* [3], **8**, p. 765).

Caprifoliaceæ.—*Sambucus racemosa.* F. *Adoxa moschatellina* (*P.J.* [3], **8**, p. 765). *Viburnum lantana* (*P.J.* [3], **10**, p. 869). *V. opulus.*

Cistaceæ.—*Cistus creticus.* B.G.

Compositæ (Asteraceæ).—*Doronicum caucasicum.* F. *D. plantagineum*, *Petasites vulgaris*, *Taraxacum officinale* (*P.J.* [3], **7**, p. 789).

Coniferæ.—*Pinus sylvestris* (*P.J.* [3], **7**, p. 957), *Larix europæa* (*P.J.* [3], **7**, p. 957).

Cruciferæ (Brassicaceæ).—*Cardamine amara*, *C. hirsuta*, *C. pratensis*, *Alyssum saxatile.* F. *Arabis stricta*, *Dentaria bulbifera* (*P.J.* [3], **10**, p. 953), *Cochlearia armoracia* (*P.J.* [3], **7**, p. 1058).

Cupuliferæ.—*Betula alba*, *Alnus glutinosa*, *Quercus robur* (*P.J.* [3], **7**, p. 957).

Cyperaceæ.—*Carex præcox*, *C. montana.*

Equisetaceæ.—*Equisetum maximum* (*P.J.* [3], **9**, p. 793).

Ericaceæ.—*Arctostaphylos uva-ursi* (*P.J.* [3], **8**, p. 933). *Azalea.* F. *Erica.* F. *Andromeda floribunda*, F., *A. tetragona*, F. (*P.J.* [3], **10**, p. 869).

Euphorbiaceæ.—*Euphorbia amygdaloides* (*P.J.* [3], **7**, p. 789). *E. splendens. F.*

Fumariaceæ.—*Corydalis lutea*, *C. glauca.* B.G.

Gentianaceæ.—*Gentiana verna*, *Menyanthes trifoliata.*

Geraniaceæ.—*Geranium maculatum.* B. G. *Pelargonium.* F. *Tropæolum.*

Graminaceæ.—*Poa bulbosa.*

Iridaceæ.—*Iris tuberosa*, *I. florentina*, *I. germanica*, *I. versicolor.* B.G.

Juglandaceæ.—*Juglans cinerea.* B.G.

Juncaceæ.—*Luzula pilosa.*

Labiatæ (Lamiaceæ).—*Lamium album*, *L. galeobdolon*, *Rosmarinus officinalis.* F.

Lauraceæ.—*Cinnamomum cassia.* B.G. *Laurus nobilis.* F.

Leguminosæ (Fabaceæ).—*Orobus vernus.* F. *Vicia sepium*, *Cytisus scoparius* (*P.J.* [3], **7**, p. 957), *C. laburnum.* F.

Liliaceæ.—*Allium ursinum*, *Paris quadrifolia* (*P.J.* [3], **20**, p. 934-935), *Convallaria majalis* (*P.J.* [3], **9**, p. 973), *Maianthemum bifolium*, *Polygonatum officinale*, *Scilla nutans*, *Tulipa sylvestris*, *Erythronium grandiflorum.* F. *Uvularia grandiflora.* B.G. *Aloe vulgaris.* B.G. (*P.J.* [3], **7**, p. 870).

Linaceæ.—*Erythroxylon coca* (*P.J.* [3], **7**, p. 870).

Magnoliaceæ.—*Magnolia conspicua.* F. *M. soulangeana.* F.

Menispermaceæ.—*Cissampelos pareira.*

Orchidaceæ.—*Cypripedium calceolus.* F. *C. spectabilis.* F. *C. pubescens.* B.G. (*P.J.* [3], **7**, p. 959). *Listera ovata, Neottia nidus-avis, Neotinea intacta, Ophrys muscifera, A. aranifera.*

Orobanchaceæ.—*Lathræa squamaria* (*P.J.* [3], **20**, p. 934 ; **10**, p. 869).

Papaveraceæ.—*Stylophorum diphyllum.* B.G. (*P.J.* [3], **10**, p. 869). *Chelidonium majus, Meconopsis cambrica.*

Polygonaceæ.—*Polygonum bistorta, Rheum officinale, R. tanguticum.* B.G. (*P.J.* [3], **7**, p. 959 ; **8**, p. 934).

Portulacaceæ.—*Claytonia perfoliata.* B.G. *C. virginica.* B G.

Primulaceæ.—*Cyclamen.* F. *Primula farinosa, P. elatior* (*P.J.* [3], **10**, p, 869).

Ranunculaceæ.—*Actæa spicata, Cimicifuga racemosa.* B.G. (*P.J.* [3], **7**, p. 957-99. *Coptis trifolia.* B.G.) *Clematis montana.* F. *Trollius europæus, Aconitum napellus, Podophyllum peltatum.* B.G. *P. emodi.* B.G. *Anemone ranunculoides, Adonis vernalis.* F. *Aquilegia vulgaris* (*P.J.* [4], **4**, p. 179).

Rosaceæ.—*Alchemilla vulgaris, A. arvensis, Poterium sanguisorba, Pyrus aucuparia, P. maulei.* F. *Prunus lauro-cerasus.* F. (*P.J.* [3], **20**, p. 850) *P. avium, Geum rivale, G. urbanum, Spiræa arguta.* F.

Rubiaceæ.—*Galium cruciata* (*P.J.* [3], **20**, p. 934).

Rutaceæ.—*Pilocarpus jaborandi.* B.G. *Citrus limetta.* B.G. (*P.J.* [3], **8**, p. 845).

Salicaceæ.—*Populus balsamifera.* F. (*P.J.* [3], **9**, p. 789). *Salix alba* (*P.J.* [3], **7**, p. 957).

Sapindaceæ.—*Æsculus hippocastanum.* F. *Staphylea colchica.* F.

Saxifragaceæ. — *Chrysosplenium oppositifolium, Saxifraga tridactylites. S. hypnoides.*

Scitaminaceæ.—*Curcuma longa.* B.G. *Zingiber officinale.* B.G. *Kæmpferia rotunda* (*P.J.* [3], **10**, p. 953).

Simarubaceæ.—*Quassia amara.* B.G.

Scrophulariaceæ.—*Veronica chamædrys* (*P.J.* [3], **20**, p. 934). *Scrophularia aquatica.*

Thymelæaceæ.—*Daphne cneorum, D. pontica.*

Umbelliferæ.—*Chærophyllum sylvestre, Coriandrum sativum.* B.G.

Urticaceæ.—*Morus nigra.* F.

Violaceæ.—*Viola pedata.* B.G. *V. tricolor.* F.

ZOOLOGICAL NOTES FOR PHARMACISTS.—XI.

Sauropsida.

Under this name reptiles and birds are frequently associated together. The reasons for such association do not appear at first sight, but a closer study reveals a remarkable similarity in several directions. The presence of an exo-skeleton of scales or feathers, or both, of epidermal origin, certain similarities in the structure of the skull and internal skeleton, the large yolked egg and development of the fœtal membranes amnion and allantois, not present in lower forms, all show a distinct relationship. Moreover, geology supplies sufficient evidence that birds are descended from reptiles, fossils of animals bearing a strong resemblance to both classes having been found.

The exo-skeleton in reptiles primarily consists of scales and plates of a horny not bony character. Such scales cover the bodies of lizards, snakes, the head and limbs of tortoises and the belly of the crocodile, as also the legs and feet of birds. The horny epidermal coat may cover a second bony dermal layer, as in the tortoise and crocodile. In the tortoise this bony shield or carapace is fused with the internal skeleton. Reptiles periodically cast off and renew the outer layers of the epidermis ; this process is called "ecdysis."

A feather is an epidermal structure peculiar to birds. It consists of a hollow stalk or "calamus," at the base of which is a small aperture into which fits the feather papilla, a hardened process of the skin. The calamus supports the expanded part of the feather, the "vexillum," which consists of a solid axis, the "rachis," bearing membranous "barbs," which in their turn bear delicate "barbules." These barbules are so constructed that the barbules of each barb interlock with those before and behind, and so form a continuous structure of considerable resisting power. In the ostrich and emu there are no hooked barbules and the barbs stand free. The small, soft, down-feathers of birds are also devoid of hooked barbules.

No existing bird possesses teeth, but in fossil forms teeth of a distinctly reptilian character are present. All reptiles except the tortoises and turtles possess a number of teeth. In the venomous snakes a few teeth are modified to form poison fangs, long grooved or channelled teeth connected with a poison sac situated on the roof of the mouth, the contents being ejected by the action of one of the jaw muscles.

Whilst reptiles are all cold-blooded, birds, owing to their elaborate respiratory system, which is necessary to their aerial condition, possess a temperature two or three degrees higher than that of any other animal. By means of extensions of the bronchial tubes into bladder-like air sacs, the whole body of the bird is brought into contact with the freshly inspired air, even the interior cavities of some bones.

All birds and most reptiles are oviparous, and internal impregnation occurs in both cases.

EXPLANATORY NOTES ON THE B.P. 1898.

Opium.—In the article on opium in the *P. J.* for April 22 last, p. 370, the molecular weight of morphine is given as 285. This figure is obtained by using the atomic weights, C=12, H=1, N=14, O=16, and is the value accepted in the official monograph. Using, however, the refined table of atomic weights given in the Appendix to the B.P., the molecular weight should be 283·05. This discrepancy has been noted in an official list of corrigenda issued since the publication of the Pharmacopœia, and copies of the book printed subsequent to that notice will contain the amended figure. Using also the official atomic weights for sulphuric acid (H_2SO_4=97·34), the figures given in the Students' Columns should read as follows :—

48·67 grammes H_2SO_4 ≡ 283·05 grammes morphine

∴ 0·004867 Gm. ,, ≡ 0·028305 Gm. ,,

Hence, each C.c. of N/10 H_2SO_4 (containing 0·004867 Gm. H_2SO_4) neutralised indicates 0 028305 Gm. morphine in the precipitate titrated." Note also that, through a printer's error, the figure 0·285 given in the Students' Columns for the morphine equivalent of 1 C.c. N/10 H_2SO_4 should have been 0·0285.

Paraffinum Molle.—This is obtained by purifying the residue left after the separation by distillation of the more volatile portions from crude petroleum. The chief sources of petroleum are America and Russia, smaller supplies being also obtained in India, Germany, and other countries. The composition of these earth oils varies considerably so far as regards the proportions of the various fractions obtained from them by distillation. The products obtained may be broadly divided into four fractions : (1) Mineral naphtha, (2) burning oils, (3) lubricating oils, (4) soft or semi-solid paraffins. The Pharmacopœia requires paraffinum molle to have a melting point between 35·5° C. and 38·9° C. It is purified by successive treatment with sulphuric acid and caustic soda and decolorised by filtration through charcoal. The test for fixed oils, fats, and resins should be readily understood by reference to the article on "Fixed Oils."

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THE FORTHCOMING COUNCIL ELECTION.

Last year there were but two more candidates than were necessary to fill the fourteen vacancies on the Council of the Pharmaceutical Society; this year there are six more than are requisite for the seven vacant seats. So far, therefore, as the supply of candidates is concerned, the voters have no lack of choice. On the other hand, there has been a large accession of fresh voters this year—the net increase exceeding seventeen hundred—so that the modest number of votes which sufficed to secure a place on the Council in years gone by will almost certainly have to be largely exceeded if a similar result is be attained on the present occasion. The voting papers issued at the last election numbered considerably less than four thousand, and of those less than two thousand were returned to headquarters, whilst nearly a hundred were wasted on account of informalities or delay in arrival. This year close upon five thousand five hundred voting papers have been issued, and it is sincerely to be hoped that more, rather than less, than four thousand may be returned. The greatest care should be taken to avoid informalities in filling up the papers and to return them in good time. Inasmuch, also, as the probable number of votes required to secure a seat for any given candidate will largely exceed three thousand, no one who takes a real interest in the result should rest content until, in addition to returning his own voting paper, properly filled up, he has also induced his neighbours and friends to do likewise.

The method of voting is simple in the extreme, all that the voter needs to do being to draw a line through each name he does not approve of. There are thirteen names printed on the voting paper, and of those at least six must be cancelled, or the paper will be void. At the same time, it should be remembered that seven representatives are to be elected, and that unless the voter leaves seven names untouched, he sacrifices his voting power to some extent. It is not uncommon to be asked to plump for a certain candidate, but to act on such a suggestion is neither wise nor creditable to the intelligence of the voter. As seven representatives are needed, seven candidates should be voted for by every member of the Society who wishes to feel that he has done his duty in the matter. The effect of plumping for one or more candidates may be to give them more votes proportionally than the rest, but as often as not those extra votes serve no other purpose than that of swelling certain totals to unnecessarily high figures. And though it is doubtless gratifying, as was pointed out in these columns twelve months ago, to have one's favourite candidate stand at the head of the poll—with perhaps five hundred more votes than were necessary to secure his return—it ought to be regarded as more satisfactory on the whole to exhaust one's voting power, and so help to return the seven most representative candidates in a body. What is obviously the best course to pursue, then, is to go carefully through the list of thirteen names and, after careful deliberation, to strike out six of them. No figures or other mark must be made on the voting paper, but the voter must authenticate his vote by writing his name and address in the space provided for that purpose at the back of the accompanying printed envelope in which the voting paper must be returned to headquarters.

The considerations influencing members of the Society in exercising their voting power are usually many and various, and the present occasion is not likely to be any exception to the general rule in that respect. Some—and no small proportion—may be expected to vote for the whole of the seven retiring members who are offering themselves for re-election, because they feel that they have been served worthily and well by them during the past year, and because they do not see that any advantage is likely to accrue from changing for the mere sake of change. Whether any will take the diametrically opposite course suggested by irresponsible advisers remains to be seen. An intermediate view will doubtless prevail with another large section—perhaps the largest of all—the voters carefully selecting from the entire list, with varying results, the names of the seven candidates who appear to them most suitable. As aids to the voters in making their choice, many of the candidates have published expressions of opinion on the matters of chief importance to the craft at the present time, and circulars are being freely issued by candidates and their friends. On the whole then there is the prospect of an interesting contest. What the result may be it is more than usually difficult to forecast, but in the course of another week we shall know which, in the opinion of the electors, are considered to be the seven best men, and the first Council constituted since the passing of the Pharmacy Act of 1898 will be duly authorised to take up the management of the Society's affairs. The task before the new Council is no light one, including as it may an attempt to remedy the defects of the Pharmacy Acts, in addition to carrying out the existing law and managing the affairs of a society which is more thoroughly representative of "the trade" and of greater importance as a public body than at any previous period of its existence. It seems only fitting, therefore, that those who are now offering their services to the craft, without hope of benefit accruing to them except such as may be shared by every registered chemist, should be encouraged to take up the burden that awaits them by a hearty and thoroughly representative vote. No greater compliment can be paid to an elected representative than to have recorded in his favour the largest possible number of votes, and such a compliment, we trust, will be paid to each of the seven members elected to serve on the Council next week.

ANNOTATIONS.

"Counter Prescribing Made Easy" is the misleading headline of an article in the *British Medical Journal*, for May 6, which is, on the contrary, devoted to broad enunciation of the doctrine that the practice referred to is "an abuse which ought not to exist," that it is "a fraud" upon the public, which may be "dangerous and even directly fatal" as well as "infringement of a prerogative which rightly belongs to the medical profession." With the sentiment expressed by our contemporary, from that doctrinal point of view, we anticipate that most of our readers will fully sympathise, and, indeed, the writer in the *British Medical Journal* candidly admits that "as a point of ethical theory" it would be shared by "every pharmacist of the better class." That remark appears to touch the crux of the matter by pointing to the fact that in dealing with this subject a sharp line of demarcation requires to be drawn between sentiment and business. What is spoken of as the prerogative of the medical profession lies on one side of that line, while the historic doctor's shop is on the other side. Due regard for the one has not yet been acquired by the general public; but the man in the street is quite familiar with the other and with the still more pernicious attractions of quack nostrums. From the complicated consequences of that antithesis between doctrine and fact both the medical profession and pharmacists have, equally, to work out their salvation and to secure more appropriate separation of their respective functions. In that sense we are disposed to agree with the general tenour of our contemporary's article condemnatory of "counter prescribing," though it does seem too much pervaded by the ghost of the defunct apothecary holding on to the material trade of the shop while aspiring to the professional practice of medicine. That duplicate position is largely responsible for popular "barbarous ignorance" as to what is necessary for the treatment of disease, for the consequent disregard of medical prerogative, and for the vulgar belief that "remedies," obtainable as an article of trade, can take the place of medical skill.

A Question that Suggests Itself in connection with the article in the *British Medical Journal*, which is commented on above, is Why our contemporary deferred its review of the book attacked in that article until the present time? The work was published nearly seven months ago, and in a brief notice concerning it, which appeared in the *Pharmaceutical Journal* for September 24 last, the statement was made that it could be wished there was no necessity for the publication of such a book. If the views now expressed by the *British Medical Journal* prevailed then, why were they not expressed more promptly? One reason that suggests itself is that it was not originally intended to notice the book, and that but for the somewhat equivocal position taken up by the organ of the British Medical Association at the present time, with regard to the claims of pharmacists to be protected from unjust competition, the display of literary fireworks witnessed last week would have been indefinitely postponed. In fact, the whole thing savours strongly of the traditional red herring, and we must strongly deprecate the raising of the vexed question of counter-prescribing in so prominent a fashion at the present moment. It is neither decent nor expedient, whilst the issue is being raised between unqualified joint-stock companies and various professions, to suggest that only pharmacists of "the better class" admit that counter-prescribing is an abuse—"as a point of ethical theory." Nor is it fitting to publish, without full and conclusive evidence, vague statements about the harm alleged to result from counter-prescribing, or about "chemists who do not mean to let it perish if they can prevent that consummation." For the present time is a critical one in the history of both medical practitioners and pharmacists, and as we have previously had occasion to remark, neither class can expect to attain anything like an ideal position without the fullest sympathy with and most generous support of the other.

The Propriety of Claiming that the principle of the Pharmacy Act relating to qualification should be fully upheld receives useful support from the argument applied by the *British Medical Journal* to the analogous case of medical qualification. Speaking of the Isle of Man Medical Bill as being largely an enactment of the penal clauses of the Medical Acts, and of the repeated indication that they are too weak, belief is expressed that the medical profession in the island might well have striven for all that they avowedly hold to be desirable, and might have faced the risk of failure to carry their measure, instead of being daunted by the fear that if they succeeded in getting through the Lower House a more stringent enactment, dealing with practice and not only with titles, it would be rejected by the Council which corresponds to an Upper House. So far as concerns improvement in medical education and establishment of a register of legally recognised practitioners, it is pointed out that the Isle of Man participates in the advantages arising from the Medical Acts, but that better means of preventing unqualified practice still require to be provided. That is precisely the position in regard to the practice of pharmacy, which has at length awakened registered chemists and druggists to a general perception of the need for amended legislation on the same line as that contended for by the medical profession.

The Registered Chemist's Qualification is defended by the *British Journal of Dental Science* in no uncertain terms. In a recent number of that paper it was stated that the Companies (Medical Profession) Bill must be regarded as the outcome of the labours of the joint committee of representatives of the medical, dental, veterinary, and pharmaceutical bodies, and satisfaction was expressed with the Bill so far as it referred to dentistry. The fact that pharmacy is proposed to be left out in the cold by the Lord Chancellor was apparently not noticed at first, but in a subsequent issue of our contemporary it is specially referred to. The text of the Pharmacy Bill, 1899, is quoted and the following comment made thereon:—"We consider that the Bill does a grave injustice to an honourable calling, and we can see no reason for the exclusion of pharmacists from the benefits to be conferred upon their medical and surgical brethren." This is well and handsomely said, and added to what the leading medical organs have already stated, goes far to prove that—as we have always contended—only a section of the medical and dental professions is indisposed to recognise the justice of the claims of registered chemists in regard to the matter of company trading.

Support and Sympathy for registered chemists come from an unexpected quarter when they appear in the pages of *Truth*, but they are all the more welcome on that account. In last week's issue the question was asked, "Which is the more dangerous, to have a tooth drawn by the unqualified servant of a limited liability company carrying on the business of a dentist, or to take a mixture containing aconite or strychnine compounded by the unqualified employé of a drug company?" The two Bills introduced by Lord Halsbury, and now before the House of Lords, are said to supply the answer, since the first Bill prohibits the profession or business of a physician, surgeon, dentist, or midwife being carried on by a company, whilst the other explicitly legalises the assumption of the titles and functions of pharmaceutical chemists and chemists and drug-

gists by a company. It is true, it is remarked, that there is a proviso in the Pharmacy Bill, 1899, to the effect that the business of the company shall be conducted by a duly qualified manager or assistant, but the editor of *Truth* fails to see that the public is thereby afforded any real protection, and, he continues "As at present drawn, there is nothing in the Bill to prevent a company with one qualified manager dispensing poisons at a hundred branches by means of unqualified assistants. To amend the Pharmacy Acts in this manner is simply to open the door to the dangers which they were intended to provide against." It is pointed out, by the way, that the Lord Chancellor is himself in business in a small way as a chemist and druggist, the name of "Halsbury, Lord, Peer" figuring on the register of shareholders in "Lewis and Burrows' Drug Stores, Limited," as the owner of one hundred Preference shares. As one personally interested, therefore, *Truth* imagines that he would be only too glad to adopt means to make it impossible for any druggist's shop to be left in charge of a boy possessed with a firm conviction that Epsom salts is oxalic acid.

IN REPLY TO 'TRUTH'S' REMARKS the managing director of a leading drug company has written to correct the statement made, "that there is nothing in the Bill to prevent a company with one qualified manager dispensing poisons at a hundred branches by means of unqualified assistants." After quoting the Bill he proceeds, "You will note that the business, wherever it is carried on, must be *bonâ fide* conducted by a duly registered chemist." But that, observes *Truth*, is just the point, since the Bill does not provide that the business must be so conducted "wherever it is carried on," and the manager of the drug company in so interpreting its provisions, and in further stating that there is "no room for doubt as to the obligation of companies under the proposed Bill to employ a registered chemist at every place of business," reads into its clauses a meaning which it is most desirable should be stated in so many words, instead of being left as a matter of inference only. Even supposing however, that the Bill may be so construed, it is no answer to the query as to "why the Lord Chancellor considers it, on the one hand, inadvisable for teeth to be drawn by a limited liability company, and on the other hand, consistent with the public interest that strychnine should be dispensed by a similar body?"

MR. JESSE BOOT, who assumes to be "the greatest chemist in the world," though his name does not appear on the official Register, seems to be displeased with a very pertinent suggestion made in the *Lancet* that, if the Lord Chancellor's Pharmacy Bill should become law, a company could run a hundred shops, though retaining the services of only one single qualified man to satisfy the requirements of the law, and that consequently "medicines could be dispensed and poisons sold in ninety-nine of those shops by the unqualified, the inexperienced, and the ignorant." That remark is considered by Mr. Boot to indicate an erroneous impression of the effect the Lord Chancellor's Bill would have, and he naturally desires to prevent its circulation by offering his own interpretation of the Lord Chancellor's Bill, as being intended to refer to every place in which a company may carry on business. That is an ingenious mode of representing Mr. Boot's position as being that of a public benefactor. The ingenuity extends to confining the reference to the "sale" of poison, as being necessarily made—even for a company—by a registered chemist, and to representing that "as the only equitable solution of the matter" in contrast with the claim of chemists (for the suppression of all companies trading as chemists and druggists) which the Lord Chancellor has not thought fit to adopt. The work of dispensing medicine is not mentioned, and the significance of that ingenious omission will be apparent when it is remembered that the dispensing of medicine could be carried on in the ninety-nine shops—out of sight, and by unqualified persons—without any possibility of ascertaining that fact so far as the provisions of the Pharmacy Act are concerned. It is, however, in regard to that work of dispensing that the necessity of qualification of the proprietor of a pharmacy is important from the point of view of public interest and the more plausible aspect presented by companies from the trade point of view of mere sales—to which Mr. Boot adroitly confines his remarks—is another illustration of the disadvantage chemists and druggists suffer when their claim to consideration is regarded only as a matter of trade interest, and when they fail to keep in view the fact that their occupation in something more than a mere trade.

THE LORD CHANCELLOR'S BILLS are discussed by the editor of *Health*, who cordially approves of the spirit of the Medical Bill but regrets that Lord Halsbury has not adopted a broader view with regard to pharmacy. Unfortunately for pharmacists, it is stated, he has not looked upon them as a profession, but as a trading community having important relations with the public and the State, inasmuch as they are the licencees of the State for the dispensing and retailing of poisons. It is urged that if Parliament admits the principle that companies, which cannot pass an examination, should be permitted to carry on business as chemists and druggists, there seems no valid reason for preventing a company carrying on a medical practice, since the principle cannot be wrong in one case and right in another. There is no doubt, it is remarked, that great interests are at stake in connection with companies trading as pharmacists or as chemists and druggists, but if those interests have been vested contrary to the spirit of the Pharmacy Act, 1868, a law should be passed to make companies as liable under existing laws as individuals are.

MR. HENRY'S EXPLANATION of the position taken up by himself and other members of the Edinburgh Chemists' Association (see p. 449) ignores the consideration that if a company, which cannot be examined, is outside the scope of the Pharmacy Act, it will be equally outside the Act in regard to the use of titles as in other respects. What is the good of objecting to the use of pharmaceutical titles by companies if we are to acquiesce in their practical enjoyment of the realities represented by those titles? In other words, what value is the title "chemist and druggist" to its legitimate holder, if the practice of pharmacy is free to anyone—qualified or unqualified? Of what value is that title to the public but as a means of distinguishing the establishment of the qualified individual from that of the unqualified pretender? And if the use of the distinctive title "chemist and druggist" is to be surrendered, that of "pharmaceutical chemist" will become of equally little account, so that virtually nothing will be left of the advantages the Pharmacy Acts were supposed to have secured to the public and to duly qualified persons. The practice of pharmacy and the qualifications and titles of registered chemists are inseparably connected in the public mind, and unless registered chemists are prepared to fight for the exclusive right to keep open shop, in addition to the right to assume titles implying qualification, they may as well reconcile themselves to the idea of losing everything but their capacity as business men and, in such an event, even that would be sadly tarnished. To say that it is not proposed to give companies anything which they have not already got is quite beside the question, for the fact that companies have been judicially held to be outside the scope of laws affecting individuals, has not conferred upon companies a right to do what individuals are prohibited from doing because

it has been held to be contrary to the interest of the public. The point is—as the Lord Chancellor himself has admitted—that there is a glaring anomaly in prohibiting a natural person from doing, as an individual, what he is able to do without let or hindrance if he associates with himself six other persons. That anomalous state of affairs cannot be remedied by granting companies legal recognition on condition that they employ duly qualified persons as managers or assistants, and we do not hesitate to say that the possibility of any compromise of the character suggested by Mr. Henry and his friends, ought not for a moment to be entertained by registered chemists who have any respect for the general interests of their craft.

The Question of Motive is introduced unnecessarily by Mr. Henry, in the second paragraph of his letter, for we quite fail to comprehend why he should assume that unworthy motives were imputed to him or his friends. If the Scotch correspondent of the *Medical Press* and the chemists who have been writing to the *Scotsman* about the alleged payment of commissions by registered chemists to medical practitioners have published inaccurate statements, let those statements be refuted by all means. But surely such matters may be commented upon in the *Pharmaceutical Journal* without persons whose names happen to be mentioned in the same number of the Journal assuming that unworthy motives are thereby imputed to them. Such susceptibility would afford cause for regret if it existed in the case of any ordinary mortal; when it is found to exist in the case of a presumably cool, hard-headed and logical Scotchman, the position is simply deplorable. However, if it will afford any satisfaction to Mr. Henry, he may take it that no one who knows him could ever imagine the possibility of commissions being paid to medical practitioners by him. We think his opinions are totally wrong on several points, but are quite content to say so without imputing unworthy motives. With regard to Mr. Henry's concluding remarks, it may be suggested that what the *British Medical Journal* quotes from price lists does not, as a matter of course, represent actualities, and that the opinion expressed as to the unworkable nature of the Medical Bill is an opinion only. Finally, we must protest against the unfairness of quoting from the President's speech a passage which it is essentially necessary to consider in conjunction with its context. When a speaker has done his utmost to urge upon his hearers the desirability of bringing an open mind to the consideration of a subject, it is neither fair nor courteous to charge him by implication with adopting a partisan view directly opposite to the policy recommended by the Council.

The New Influence Machine, referred to in our report of the Royal Society's conversazione, last week, consists, according to *Nature*, of a pair of glass discs rotating in opposite directions upon a spindle. The discs are partially covered on one face with narrow radial sectors of tinfoil, each provided with a small brass knob. This face of the disc, sectors included, is then coated with insulating wax, leaving only the knobs projecting through the wax. Two earthing brushes pass through two insulated fixed conductors, and support them. The inductors are kept charged by exploring-points connected to each, and placed so as to collect electricity from the revolving discs. By means of brushes, the sectors on each of the discs are successively earthed at the moment they pass the fixed inductors, *i.e.*, when their capacity is a maximum; and they deliver up their charge to the main collecting brushes at the moment when they are electrically farthest from the inductors, *i.e.*, when their capacity is a minimum. Hence, if there is no loss of electricity in the process, the potential at the collecting brushes is proportionately high. Each sector of a particular disc, as it moves away from its inductor with rising potential, induces a corresponding potential on the sectors opposed to it on the second disc; this action is cumulative. The thick coating of wax restricts leakage to the small area of the contact knobs, so that surface effects of dirt and moisture are minimised. The machine has not yet been put on the market by the inventor. A chat with Mr. Pidgeon, at the press view, elicited the statement that the output is so large that an X ray tube can be worked by a machine of ordinary size, which would cost about seven or eight pounds to make. Induction is set up almost immediately, and the shadow of the bones of the arm is rendered clearly visible.

The Annual Dinner of the Pharmaceutical Society will be held at the Whitehall Rooms, Hôtel Métropole, on Tuesday next, May 16, at 7 p.m., precisely. But few tickets remain unsold, and possibly by the time this week's Journal reaches the members none will be left. It has been found necessary, for the comfort of those attending the dinner, to limit the number of tickets issued very strictly, and those who apply in vain too late must needs console themselves with the reflection that the fault was entirely their own.

The Fifty-eighth Annual General Meeting of the members of the Pharmaceutical Society of Great Britain will be held at the house of the Society, 17, Bloomsbury Square, London, W.C., on Wednesday next, May 17, at 12 o'clock noon precisely, to receive the Report of the Council, and to elect the Council and Auditors for the ensuing year. The Report of the Council, which will be formally submitted to the Annual General Meeting, was printed in the *Pharmaceutical Journal* last week (see page 411), and voting papers for the Council election have been sent by post to all members of the Society qualified to vote. Full instructions are printed on the voting papers, but it may not be amiss to remind the members that they may either deliver the papers personally at the time of the election, or they may transmit them in advance to the Secretary. In the latter case, they must be received by Mr. Bremridge not later than the hour at which the annual meeting opens.

The Literature of Essential Oils is none too plentiful, and it is satisfactory, therefore, to read Messrs. Schimmel and Co.'s announcement of the impending publication of a comprehensive treatise on essential oils, elaborated at their initiative by well-known scholars and experts. It is stated that this work is the result of several years of labour, and of not less interest to general readers than to chemists, inasmuch as it is proposed to treat the subject matter not only from its chemical, botanical and commercial points of view, but also and more fully in its historical and practical aspects. "Being a thoroughly modern work, it will also meet with approval by discarding the accumulated vast mass of antiquated and untenable literory material still prevailing in the current literature of essential oils." The work is to be published by the firm of Julius Springer, in Berlin, in the course of this summer, and it is anticipated that it will creditably fill a long-standing void in this special domain of modern chemical literature.

The New Preliminary Regulations.—The Editor acknowledges the receipt from Mr. Maben of a letter on the subject of the new Preliminary Examination Regulations, which has been submitted to the President, who decides that its publication is undesirable. That being the case, any reply to Mr. Maben's remarks on the editorial article in last week's Journal would be out of place, but the opportunity may be taken of suggesting to him that administrative matters involving consideration of delicate points, such as representation of minorities and possibly conflicting opinions, may most usefully be dealt with in other ways than controversial correspondence in the Journal.

PHARMACEUTICAL SOCIETY.

DONATIONS TO THE LIBRARY AND MUSEUM.

At a meeting of the Library, Museum, School and House Committee, on Wednesday, May 10, the Librarian and Curator presented the following reports of donations:—

To the Library (London).

Middlesex Hospital:—Reports for 1897.

H. N. Ridley, Esq., Straits Settlements:—Annual Report of the Botanic Gardens for 1898.

Cassell and Co., Ltd., London:—Bruce's Materia Medica and Therapeutics, thirty-eighth thousand, 1899.

To the Museum (London).

Messrs. Hearon, Squire, and Francis:—Specimen of pure white wax in circular cakes.

To the Herbarium.

Mr. Ewell, Dover:—Specimens of *Laurus nobilis* in flower.

MIDLAND PHARMACEUTICAL ASSOCIATION.

The annual meeting of this Association was held at the Great Western Hotel, Birmingham, on May 4, when Mr. Jeffrey Poole (President) occupied the chair. The annual report was submitted, reference being made therein to the fact that Professor Hillhouse had attended one of the meetings of the Council to show the advantages which students of pharmacy might reap by attending systematic teaching of the kind obtainable at Mason University College. The Professor informed the Council of what provision the College authorities would be able to make to meet the requirements of students, and said that, supposing the Senate felt justified in taking the matter up, the fees fixed would be within the compass of the students' means. After discussing the matter, the Council left it in the hands of a Committee consisting of the President and Messrs. A. Southall, J. Barclay, and F. J. Gibson.

The President moved the adoption of the report, remarking that the new method of voting, which had taken the place of the system of territorial representation introduced by Mr. Thompson some years ago, had resulted in thirty replies having been received, whereas last year there were only twelve. As to the classes at Mason College, he said the scheme was not yet developed, but there could be no doubt that in the matter of terms the College was prepared to meet them most favourably. If the scheme was carried through, he expressed a hope that every member would use all his influence to induce his apprentices and assistants to take advantage of the facilities offered.

The motion was seconded by Mr. C. F. Jarvis, who spoke of £14 as rather a large amount for printing, and suggested that some economy might be effected in that direction.

Mr. C. Thompson spoke in complimentary terms of the excellent services rendered to the Society during the year by the President (Mr. Poole), and the Secretary (Mr. G. H. Brunt). Having been secretary himself once, he could say that the duties were arduous, and took up a good deal of time. As to the method of election, he was convinced that territorial representation was only lying dormant for a time, and that it was bound to be accepted in the long run.

Mr. F. H. Alcock mentioned that one member had used the post-card, sent to him for the purpose of voting, upon which to send in his resignation. He described this as a very mean act, especially as it was done at the end of the session. Referring to the list of voluntary subscribers he pointed out that as a rule those who contributed the larger amounts were also left to do all the work of the Association, and this was certainly unfair. The origin of these voluntary subscriptions was a desire to enlarge the library, but the money was now being devoted to carrying on the work of the Association. This ought not to be permitted, as books for the library were badly wanted, especially as they were about to take a very important step in conjunction with Mason College. This was, in his view, a step in the right direction, and was, in fact, the only thing that could be done in the absence of a curriculum. He suggested that the incoming Council should turn its attention to the question of these voluntary subscriptions—they should continue to be voluntary by all means—and see if they could not be devoted, say, to provide a physical museum, for there was nothing of the kind in the city.

Mr. John Barclay expressed a hope that more enthusiasm would be shown in the work of the Association, and said there would then be no necessity for grumbles about subscriptions.

The report was adopted.

Annual Dinner.

Subsequently the annual dinner of the Association was held, Mr. Poole again presiding. There were also present, amongst others, Mr. John Barclay, Dr. Paul, Dr. Felix Vinrace, Dr. Martin Young, Dr. Leedham-Green, Mr. A. Southall, Dr. Hall Edwards, Messrs. W. Jones, C. Thompson. A. W. Gerrard, Cuxson, F. H. Alcock, F. H. Prosser, A. C. Weaver (Wolverhampton), T. Wakefield, W. F. Southall, C. F. Jarvis, J. Spilsbury, P. C. Arblaster, G. H. Brunt (Hon. Secretary), G. E. Perry, T. W. Chapman, S. H. Shorthouse, Elliott, and J. C. Mackenzie.

After the loyal toasts had been honoured Dr. Leedham-Green proposed

The Pharmaceutical Society

in a brief speech. He remarked simply that the Society and the various branches throughout the country performed a most useful and valuable work regarded from either a scientific or social point of view. The toast was coupled with the names of Dr. Paul and Mr. A. Southall.

Dr. Paul remarked that he felt some slight difficulty in responding, not because he had nothing to say about the Pharmaceutical Society, but because those he was addressing really represented the Society, and he was only an officer in its service. Proceeding to touch upon some of the good work the Society had accomplished, the speaker claimed for it that originally it rescued pharmacy from the bog into which it descended when its legitimate practitioners, the old apothecaries, abandoned it in order to become medical men. The Pharmaceutical Society rescued the practice of pharmacy from that slough of despond where it was the prey of a very miscellaneous group of persons, and succeeded in establishing a qualification. At first that qualification was merely voluntary, but in process of time it came to be recognised by the medical profession generally, and was encouraged by the higher branches of the medical profession until its repute was such that the bulk of those who carried on the business of chemist and druggist desired to share in its advantages. In 1868 these advantages were extended to all who had been engaged in the business, but by an unfortunate compromise the qualification, instead of being kept to the standard of the pharmaceutical chemist—that was the individual engaged in the business on his own account—it was reduced to the standard of the assistant, and from that time there had been a very considerable retrogression in the position of those engaged in the practice of pharmacy as a body. One of the most striking instances of this retrogression was afforded by a decision of the House of Lords twenty years ago, when company pharmacy was first becoming a nuisance and a sore encroachment upon the practice of the qualified pharmacist. The Pharmacy Act has various defects, and some half-dozen learned lords were very much puzzled as to what it meant; but after a great deal of argument and discussion they came to this very strange conclusion: That the object of the Act was to make qualification necessary for carrying on the practice of pharmacy, but that, inasmuch as a company, consisting of seven persons, could not be qualified, they might practise as a company without a qualification. This extraordinary decision should have been fought at the time, and there had been a crying necessity ever since for amendment of the law, but the matter had been neglected. This neglect had been charged to the Pharmaceutical Society, but it should not be forgotten that the Society was not merely the institution located in London. It consisted of some thousands of qualified men carrying on business in different parts of the country, and it lay at the door of these that they had neglected to assert their rights and define the position they were entitled to. Matters had now come to a crisis, inasmuch that the Lord Chancellor had introduced into the House of Lords a Bill which would in time destroy any benefit that had resulted from the action of the Pharmaceutical Society or from the legislation of 1868 and 1852. It was proposed to allow a company of seven unqualified persons to carry out the functions for which it was said by the former Acts that the individual must be qualified. A more ridiculous proposal it was scarcely possible to conceive. The Bill must be fought and contested by the whole body engaged, more or less completely, in the practice of pharmacy and sometimes in conjunction with other branches of trade. Since 1868 there had been something like 10,000 individuals who had complied with the requirements of the Act, had gone through a course of education, passed examinations, and qualified themselves as the law demanded. The rights of these men, if the Lord Chancellor's Bill became law, would be entirely swept away, and the only necessity for qualification would be to

become a servant of seven unqualified persons. In the position in which the Bill stood now, he did not suppose much more could be done than to express opinion. The Lord Chancellor, as the representative of the law, had such influence in the House of Lords that probably no member would move against him if he proceeded with the Bill, but it was just possible that it would be dropped. Expressions of opinion as to its injustice were being heard in all parts of the country, and these might possibly induce the Lord Chancellor to drop it. It was unjust not only to the chemists who were qualified but also to the medical profession and to the public, who had a right to expect that their medicines should be prepared by qualified men. The Pharmaceutical Society ought certainly to oppose the Bill by every means in its power, and all registered persons should become members of the Society so that there might be united action. There were at present something like 15,000 individuals on the Register of Chemists and Druggists. Though the membership of the Society had been increased within the last few weeks to close upon 6000, this was not enough, and there would be need for further increase within the next few months.

Mr. A. Southall, who also replied to the toast, pointed out that the Pharmaceutical Society was becoming much stronger—it was half as powerful again as when the present President took office—and it surely ought to be able to do something. No doubt the 2000 fresh members would return to the Council representatives after their own heart. Hitherto there had been a good deal of grumbling, particularly on the part of those who had not been members, but now things were to be changed, and they would no doubt make greater progress than had been made by the old members. He hoped this would prove to be the case; whether it would was quite another matter. As to the suggestion that an effort should have been made to get some measures passed through Parliament this session, he could assure Dr. Paul that many ineffectual attempts had been made in this direction. Their Irish friends had been able to get measures through, but the Englishmen, up to the present, had been able to get only one passed, which was going to do wonders for them. The Bill introduced into the House of Lords had been talked of a good deal throughout the country, but little had been heard of it in Parliament since the first reading. Possibly it was that the Lord Chancellor had heard what the 2000 new members had to say, and had thought it unwise to bring his Bill forward for a second reading. For the present the Pharmaceutical Society might rest content with being prepared to fight the Bill when it came before the House of Commons, if it ever reached that assembly. In reply to those who thought that it should have been fought in the Lords, he wished to state that the Council was almost unanimously of opinion that this would not be a wise course to pursue. In the House of Commons they had friends with a good deal of influence, and when the Bill arrived there, there was every prospect of their being able to defeat it. In the provinces, as well as in London, hard work was necessary if this result was to be achieved. When the Pharmaceutical Conference visited Mr. Gladstone, at Hawarden, he gave them credit for being troublesome and persistent people. Personally, he hoped they would always merit this description. Referring, in conclusion, to the election of the Council, Mr. Southall appealed to members to seriously consider who were the best men to vote for; there was a considerable variety to choose from, and he sincerely hoped the choice would fall upon those best able to fight for the cause they had so much at heart.

Mr. J Spilsbury, in proposing

The Medical and Dental Professions,

said the sphere of work which these embraced approached very closely to that of the pharmacist, so closely indeed that it was sometimes difficult to find the line of demarcation. There was no doubt that the members of the medical profession endeavoured to uphold what distinction there was, and their efforts in this direction were fully reciprocated by the pharmacist. In conclusion Mr. Spilsbury expressed gratification at the presence of so many medical men at the Association dinner, and speaking in appreciatory terms of the scientific papers read during the session, made special mention of those contributed by Dr. Leedham-Green and Dr. Hall Edwards.

Dr. Felix Vinrace, in response, related some of his early experiences. His first introduction to medicine, he said, was in the pharmacy department twenty-two years ago. He was attached to an old practitioner at an establishment where they made their own tinctures; made their own pills in the old-fashioned method, by pounding up the mass in the mortar and rolling them out by hand; and spread their plasters after heating the irons. They were indebted to the pharmaceutical chemists for the refinements and developments in pharmacy, which had now given them standardised tinctures and pills made with exactitude by machinery. They were further indebted to the chemists for various means of making nauseous medicine palatable and acceptable to patients. An ideal relationship between the pharmacist and the doctor would be for the doctor to prescribe a particular drug, its dose, and how frequently it should be administered, and that it should then be left to the pharmaceutical chemist to exercise his ingenuity in devising means for putting the drug in the most palatable and assimilative form for the patient to take. Passing on to the co-operative drug stores, Dr. Vinrace said that, as the law now stood, if he had the ability and capital, he should support the co-operative system simply as a means of making money. On the other hand, he considered the system degrading and detrimental to the interests of the pharmaceutical profession, and if they did not exert themselves to the utmost, the time would come when the whole of pharmacy would be in the hands of capitalists, for whom the pharmaceutical chemists would be simply servants with their individuality destroyed. In his view it was better for the pharmacist to be master in his own establishment, free to develop the science as best he could. In this way pharmacy in general was much more likely to derive benefit from individual effort. Mention of quack remedies led the speaker to remark that the body had now been divided almost into microscopical proportions, and it seemed that in the future every disease which human ingenuity had been able to give a name to would have its remedy, sold for the purpose of making money, and without the guidance of the medical profession. In his opinion the public were too long in finding out whether these remedies were of any value. Before they had done so the proprietors had made their money, and the patients, having spent their money upon useless remedies, had to appeal to the hospitals. By this process neither the medical profession nor the chemist was able to derive any pecuniary benefit. Medical men were often asked whether they could recommend any particular chemist, but he approached this topic reluctantly, since the medical profession had to some extent been challenged by the London Chamber of Commerce at the instigation of a section of undertakers. Since the question was raised, however, the undertakers had gradually receded from the position they at first took up, and now they seemed to have actually buried themselves. The more the pharmaceutical chemist and the doctor became associated and the better they knew each other the less possibility would there be for any difficulty of this kind to arise. In prescribing an important and powerful remedy, a doctor did not feel that his responsibility had completely ended when the patient left his consulting room with the prescription. It was always a source of satisfaction to him to know that the patient would fall into the hands of a chemist in whom the utmost confidence could be placed, and happily for all concerned the vast majority of the pharmaceutical chemists were men of this description.

Mr. Elliott having also responded, Mr. G. E. Perry proposed "The Kindred Associations," to which Mr. Cox replied, and the proceedings ended.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, the 3rd instant, at the Society's House, 67, Lower Mount Street, Dublin, at 3 o'clock.—The President, Mr. R. J. Downes, was in the chair, and the other members who attended were Messrs. Grindley (Treasurer), W. J. Wells, Kelly, J. J. Bernard, Brittain (Drogheda), Michie, Ryan, Dr. Walsh, and Professor Tichborne.

A letter from the Director of the Missouri Botanical Garden acknowledged the receipt of a copy of the Society's Calendar, and intimated that the reports of the Botanical Garden would be forwarded regularly to the Society.

A letter from the Public Health Committee of the Corporation of Dublin enclosed the following report, which had been made to them by Sir Charles Cameron, Superintendent Medical Officer of Health and Executive Sanitary Officer:—

> Gentlemen —I have read over the paper on the subject of poisons and their sale, by Mr. R. J. Downes, President of the Pharmaceutical Society of Ireland. The subject is very important, but it is one which ought to be dealt with in a general and not a local Act. Mr. Downes' recommendations seem to be excellent ones. I think the only action which the Committee

could take in the matter is to express approval of the following recommendations of Mr. Downes, which approval might be communicated to the Premier for consideration should any new legislation in reference to the sale of poisons be introduced.—I am, etc., C. A. C.

The recommendations referred to above are :—

(*a*) That "wholesale dealing" should be defined as : (1) A sale to a person qualified to sell by retail. (2) A sale to a manufacturer for use in the process of his business. (3) A sale to public bodies who usually buy by contract.

(*b*) That the principles of qualification of the proprietor should not be departed from.

(*c*) That "poisonous substances" recognised to be poison should be added to the Poison Schedule.

(*d*) That potent and seductive poisons in prescriptions should not be repeated, except to the special directions of the prescriber.

(*e*) That poisons may not be kept or sold in the shop or room in which groceries and excisable liquors are sold or kept, or in bottles in common use for the containing of beverages.

(*f*) That a legal as well as a moral obligation should rest on the public as to storing and distributing poisons.

A member asked what was the obligation on the public referred to in clause *f*.

The PRESIDENT mentioned, as a case in point, that a man came to his establishent and, producing an ordinary whisky bottle, asked to have a lotion consisting of sugar of lead and vinegar put into it. He (the President) declined to comply with that demand, upon which the man purchased some sugar of lead, which was supplied to him, properly labelled ; and he also purchased a pint of vinegar, and then mixed them himself in the bottle. Such person should be legally responsible for any accident that followed.

Mr. BERNARD : In some public dispensaries they give them lotions in whisky bottles.

Mr. GRINDLEY : It is very hard to educate the public.

Letters were received from the clerks of the Coleraine and the Warrenpoint Urban District Councils intimating that the resolution as to company pharmacy, which the Council of the Society had suggested, had been adopted by those bodies.

A letter was received from a student asking for a new "preliminary" certificate. He stated that he had put the one which he had received on passing the examination into a drawer, but mice got at it and ate a considerable part of it.

The request of the writer was ordered to be complied with.

A letter was received from Mr. R. J. Savage, Honorary Secretary of the Irish Pharmacists' Assistants' Association, acknowledging the receipt of the last letter addressed to it by the Council, complaining of its assumption to the title "Irish Pharmacists' Association."

Mr. WELLS said he thought they should not pass over this letter. After the curt letters which had been received from the Assistants' Association the Council could not, with respect to itself, acquiesce in the Association using the title in question. Instead of showing the Council any sort of courtesy the Association had sent curt letters, and he did not think the Council could do anything else now than inform it that the Council could not any longer allow it to have the use of the rooms. The Association had applied to the Council for the use of the rooms, and it was granted, with free fire, light, and attendance ; and so far as he knew every member of the Council had been willing to help the Association in every way. The President had done so, and he (Mr. Wells) did so whilst he was in the chair. He was sorry that this matter had not come before a general meeting of the Association, because he believed that some of its members were not in favour of the course that was being pursued. He moved :

That the Council, with much regret, withdraw the use of its rooms from the Irish Pharmacists' Assistants' Association on account of the discourteous letters received from the President and Honorary Secretary of that Association in reference to the use by it of the title "Irish Pharmacists' Association.'

Mr. BERNARD said he noticed that the Assistants' Association seemed to think that the Council was trying to "pick holes," as was said there at the last meeting. On the contrary, the Pharmaceutical Society had always shown itself very willing and anxious to help it in every possible way. The members of the Assistants' Association did not seem to grasp the extent of the injury that might result from a body which included unqualified persons amongst its members being allowed to assume the title in question. The Council was not inclined to resort to harsh measures ; but it would be in its power to obtain an injunction to restrain the Association from using this title. A scurrilous and libellous post-card came under his notice as having issued from 67, Lower Mount Street. It would be painful to the Council if at any future time anything detrimental to the interests of the Society should appear as coming from the "Irish Pharmacists' Association" or from the house of the Society. If the members of that Association looked into the matter they would see that they ought not to do anything that was calculated to injure their own property. He did not go so far as Mr. Wells in thinking that the Association ought to be required to leave the Society's rooms, for he hoped that some method would be found of making it clear to the Association that it has no right to use the title. It was no doubt hard to approach the Association after the extraordinary letters that had been written on its behalf.

Dr. WALSH said that he had happened to hold the position of one of the Honorary Vice-Presidents of the Assistants' Association since it began ; but he had no sympathy with the members in their endeavour to change the name of their Association. He joined it as the "Pharmacists' Assistants' Association." He had tried to smooth matters by talking to one or two of the members, and was given to understand that they complained of the wording of a letter sent to them from the Council. They said they did not understand the attitude of the Council—that it seemed to command them. He knew that it had been the wish of the Pharmaceutical Society to assist the Assistants' Association in every way ; and he was grieved to think that anything should turn up to cause an estrangement between them.

At the request of Dr. WALSH, the correspondence which had already taken place between the Council and the Assistants' Association was read.

Dr. WALSH said he failed to see anything of an inflammatory character in the letters of the Council. He was sorry that the Association had taken up the attitude it had done in the matter, and would now leave the matter entirely in the hands of the Council. A proof that the assumed title was misleading was to be found in the fact that an invoice for something done for the Assistants' Association had come to the Society.

Mr. KELLY said he admitted having used the expression "picking holes," and he still thought that doing so would be injurious. They should recollect that these young men would be masters in the future.

Mr. BERNARD said he only referred to the post-card in order to show what a misleading title might lead to. He knew perfectly well that it was not by the Assistants' Association that that post-card was issued. He had not the slightest idea who did it, and he did not believe that any of its members would do it.

Mr. GRINDLEY said he seconded Mr. Wells' motion, and he did so with great regret. He wished there were some way out of it, but in the face of the letters that had been received from these gentlemen, the Council could not take any other course. In vindication of its own dignity it was obliged to take that course.

Mr. WELLS said that before he came to the meeting that day he spoke to an active member of the Assistants' Association, and he had thought that speaking to him might lead to some way of getting over the difficulty ; but he seemed to be quite satisfied that the Association had acted rightly in what it did. What the Council complained of was the mixing up of the Association with the Society. There was no doubt that the title in question was an illegal one for the Association to adopt. The title "pharmacist" was a protected one. He told the member of the Association to whom he spoke about the bill that had been wrongly sent to the Society under the title of "Irish Pharmacists' Association." He also understood that some of the entertainments of the Association had been put down as entertainments given by that Council.

The PRESIDENT then put Mr. Wells' motion, which was carried *nem. con.*

On the motion of Mr. GRINDLEY, seconded by Professor TICHBORNE, thanks were voted to the editor of the *Chemist and Druggist* for donations of copies of the 'Preliminary Examination (Great Britain) Guide,' and 'Practical Methods of Urine Analysis.'

Several reports were adopted, and in connection with one of these from the Law Committee,

On the motion of Mr. GRINDLEY, seconded by Mr. KELLY, the following resolution was adopted:—

That this Council approves of the principle embodied in the Bill entitled the Companies (Medical Profession) Bill, 1899, and urges that pharmacists and druggists be included, as a proper method of meeting the complaint of this Society that it is a scandal that persons unqualified and incriminated may open shop and transact the business and use the titles of pharmaceutical chemist, chemist and druggist, and druggist ; that would fulfil the promise of the Government that the matter would be dealt with as soon as it could be dealt with for the whole of the United Kingdom.

Other business having been disposed of, the Council adjourned.

GREAT YARMOUTH CHEMISTS' ASSOCIATION.

The monthly meeting of this Association was held at the Angel Hotel on Thursday, May 4, at 8 p.m. There was a good attendance of members, the President, Mr. W. S. Poll, occupying the chair. —After the minutes of the last meeting had been read and confirmed, the Chairman started a spirited discussion on the Lord Chancellor's Pharmacy Bill, condemning it in a stirring speech, which elicited frequent applause.—He was ably followed by Messrs. Shearman, Woodcock, Pechey, and Ebbage, and the following resolution was moved and unanimously adopted :—

> That this Association resolves to oppose most strenuously the Lord Chancellor's Pharmacy Bill of 1899 and to do all in its power to prevent the same becoming law.

CHEMICAL SOCIETY.

A meeting of this Society was held on Thursday, May 4, Professor Thorpe, F.R.S., in the chair. The attendance was exceptionally large and representative, most of the best known chemists in London being present. During the evening a ballot was taken, among those elected to the fellowship being Mr. H. M. Reade, a past student and research worker in the Society's laboratories.

As has been usual of late, a large number of papers were down for reading. Professor H. B. Dixon led the way with a paper by himself and F. J. Russell on the

Combustion of Carbon Disulphide.

The investigation had primarily for its object the determination of the combustion temperature of carbon disulphide. The authors find that it undergoes silent phosphorescence at first, and the lowest temperature at which they have succeeded in inducing inflammation is 232° C. Future experiments may possibly lower this by a few degrees. Among other minor points brought forward was the curious stability of carbon disulphide when it is exploded with oxygen, inasmuch as a portion of the former remains over.

An animated discussion ensued.

Professor Tilden asked whether it was really possible to determine the ignition point with exactness. "Was it not," he asked, "largely a question of circumstance, depending on the extent of surface of the igniting body, as well as on the amount of oxygen present?"

Mr. Vernon Harcourt remarked that as a general rule the compounds of sulphur suffer incomplete combustion.

Dr. Wynne suggested that the coloured substance formed on exposing carbon disulphide to bright sunlight is a subsulphide, C_2S_3.

The President made some interesting and humorous remarks. In the attempt, years ago, to prepare a lower sulphide of carbon he found that carbon disulphide could be exploded by detonation, the explosive shock resolving the compound into its elements. Though his hand was badly burned by the first explosion he was able to scrape away some of the products of combustion from the raw surface before procuring surgical assistance. This proved, on analysis, to contain a sulphide of carbon, probably C_2S_3.

Professor Dixon, in replying, created considerable amusement by asking the President whether the aforesaid sulphide was quite free from animal products.

The same author followed with an account of some work which he had done in conjunction with J. D. Peterkin, on the

Action of Nitric Oxide on Nitrogen Peroxide.

This communication was no doubt the cause of the unusually large muster of fellows, involving as it did the question of the existence of the compound nitrogen trioxide, N_2O_3; moreover this problem has in the past received experimental attention from, among others, Professor Dewar and Professor Ramsay. In order to prove whether nitrogen trioxide was formed by the interaction of nitric oxide and nitrogen peroxide, according to the equation

$$NO + NO_2 = N_2O_3,$$

Ramsay made some experiments, with a view to showing whether contraction took place. The authors, taking up a similar line of work, placed the gases in a tube with a diaphragm, and broke down this partition at a temperature of 27° C. After half an hour the apparatus was connected with a manometer. Contrary to expectation, instead of a considerable contraction there was observed a slight expansion. This result confirmed the results of Ramsay and others, there being no reason for supposing that nitrogen compounds so treated should behave abnormally. The experiments were repeated with the utmost possible care, without taps, in order to eliminate the chances of leakage. The authors conclude that when nitric oxide and nitrogen peroxide react some sort of combination occurs; there is no direct evidence that the compound formed is nitrogen trioxide.

At the conclusion of the paper Professor Ramsay said that there never was any doubt as to the existence of liquid nitrogen trioxide. —Professor Dewar, Mr. Groves, and Mr. Harcourt having spoken, Professor Armstrong suggested a spectroscopic examination as a means of identifying the gas produced.—Professor Tilden, in his customary orderly manner, said that, in his opinion, this latest information on the subject admitted of the conclusion that gaseous nitrogen trioxide may exist in small portions in presence of other gases.—The President agreed with Dr. Tilden, and thought that further evidence might be acquired by measuring the thermal disturbance set up when the before-mentioned gases were mixed.

Professor Dixon again engaged the attention of the meeting while he described experiments on

The Mode of Burning of Carbon.

It appears that however slow the combustion the product contains carbon monoxide in measurable quantity.—The paper drew a few remarks from Professor Clowes and Mr. Groves, and was followed by a note on

Crystalline Glycollic Aldehyde

by Henry J. H. Fenton and Henry Jackson. This substance, which is interesting as the first representative of the sugars, is obtained by warming dioxy-maleic acid with water. Its apparent molecular weight—112—must be halved, since the compound is bimolecular in the crystalline state. It is not optically active, nor does it ferment with yeast.—The President, in calling for a vote of thanks to the author, congratulated Mr. Fenton on being selected as a candidate for the Fellowship of the Royal Society.

Professor Ramsay read a brief abstract of the next paper, by Orme Masson and B. D. Steele, on "The Blue Salt of Fehling's Solution and Other Cupro-Tartrates." Another paper which was read dealt with "The Preparation of Acid Phenolic Salts of Dibasic Acid," by S. B. Schryver, D.Sc. The rest were taken as read, and included "The Maximum Pressure of Naphthalene Vapour," by R. W. Allen, M.A.; "Scoparin," by A. G. Perkin; "A New Compound of Arsenic and Tellurium" by E. C. Szarvasy, Ph.D., and C. Messinger; and "The Action of Hydrogen Peroxide on Secondary and Tertiary Aliphatic Amines. The Formation of Alkylated Hydroxylamines and Oxamines," by Wyndham R. Dunstan and Ernest Goulding, B.Sc.

The meeting then adjourned.

FOOD AND DRUGS ACT PROSECUTIONS.

Sal Volatile.—Joseph Topham Verity, of Pateley Bridge, whose name does not appear on the Register of Chemists and Druggists, was summoned at the Ripon Police Court, on April 21, for having sold spirits of sal volatile on March 9 which contained only three-eighths of the amount of active ingredients of ammonia and ammonium carbonate as required by the British Pharmacopœia. The county analyst's certificate to the above effect having been accepted as correct, the defendant was fined £2 6s. 5d., including costs.

Sweet Spirit of Nitre.—On Saturday, April 29, J. Dyson, grocer, of Washer Lane, King's Cross, was charged at the Halifax West Riding Police Court with selling, on March 23, sweet spirit of nitre containing 0·88 per cent. of nitrous ether only, instead of 1·75 per cent. as required by the British Pharmacopœia, 1898.—Mr. F. D. Wardle, solicitor, who prosecuted on behalf of the County Council, stated that no doubt the defendant would rely upon a warranty which, it was claimed, had been received from the wholesale house. If the magistrates were satisfied that a warranty had been given with the goods, the defendant was entitled to a dismissal, but the onus of proof remained entirely with the defendant.—Mr. K. W. Evans, solicitor for the defence, stated that the article was purchased from a Blackburn wholesale firm last June, and the bottle was labelled "Pure Sweet Spirits

of Nitre, Warranted," and the invoice was marked "B.P.," which was taken to represent British Pharmacopœia. He contended, therefore, that it was a sufficient protection for the retailer.—Mr. Wardle remarked that in the opinion of many the label was not sufficient warrant.—The Bench decided, however, that the retailer had exercised all possible care, and that the label was a warranty sufficient to protect the defendant.—The case was dismissed.——On May 2 at the West Riding Police Court, Caroline Vickers, grocer, of Kippax, was summoned for selling sweet spirit of nitre containing 1·19 per cent. of nitrous ether, as against the minimum of 1·75 per cent. required by the British Pharmacopœia, 1898.—The defendant stated that she purchased the article from Messrs. Brownhill and Sons, wholesale druggists, Leeds, and sold it in the same condition as received.—A member of the firm who was called said the nitre was purchased in the first instance from Messrs. Bleasdale (Limited), York. The decrease of nitrous ether must have been caused by evaporation whilst in the possession of the defendant. His firm made it a rule to warn small shopkeepers against purchasing large quantities of the spirit on account of its being so volatile.—Mr. Melmore, laboratory manager at Messrs. Bleasdale's, was also of opinion that the nitrous ether had evaporated while in the shop of the defendant, because they sent out the nitre at 2⅓ per cent.—The magistrates were satisfied that the defendant had not tampered with the nitre, but that it had evaporated. They desired to warn small shopkeepers not to keep the article in any but small quantities. No fine would be imposed, but defendant would have to pay costs, and the magistrates suggested that as defendant was a widow in a small way of business, perhaps the two firms connected with the case might see their way to assist her with the costs, which were somewhat heavy. ——A similar case was that of Samuel Sharper, grocer, of Kippax, which was tried at the same court, the percentage of nitrous ether being 1·03 instead of 1·75.—Evaporation was stated to be the cause of the deficiency, as in the previous case, defendant stating that the nitre was purchased from Messrs. Goodall, Backhouse, and Co.—Costs only were imposed.—The defendants in each case emphatically declared that they would never again sell sweet spirit of nitre.

Borax.—At Rugeley Petty Sessions on May 2, George Averill, pharmaceutical chemist, of Market Square, Rugeley, was summoned for selling powdered borax adulterated to the extent of 100 per cent. with sodium bicarbonate.—The defence was that an assistant had served sodium bicarbonate out of a new cask in mistake for the borax.—The magistrates accepted this view of the case, but at the same time thought that it was a very serious mistake, and fined defendant £3 7s., including costs.

NEW REMEDIES.

Ferric Chloride in Skin Diseases.—Ferric chloride in various forms has been employed with great success by E. Martin as a parasiticide in the treatment of affections of the skin caused by animal or vegetable parasites. Thus pityriasis versicolor is treated with the following application: Dried ferric chloride, 5; gutta percha, 2; chloroform, 20. Trichophytis is eradicated by the application of an ointment composed of ferric chloride, lanolin, and vaseline, equal parts. Where the parasite appears on the naked skin, it may be eradicated by the application of a solution of ferric chloride, 1, in tincture of benzoin, 3.—*Bull. Gen. de Therap.*, 136, 704, after *Sem. Med.*

Phenalgin is ammonium phenyl-acetamide. It forms a fine white powder of pungent odour, with very slight taste, and is insoluble in water. It is prescribed for neuralgia or rheumatic pains in doses of 40 to 75 centigrammes, in powder, tablets, or capsules. Phenalgin possesses hypnotic and anodyne properties, and is said to be available as a substitute for opium. It is also antipyretic, as would be expected from its chemical constitution. —*Pharm. Post*, 32, 54, after *Klin. Ther. Wochenschr.*

Hydragogine.—Under this name a mixture of digitalis and tincture of strophanthus with solutions of scillipicrin, scillitoxin, and oxysaponin has been introduced. The diuretic action of digitalis and strophanthus is greatly increased by the addition of oxysaponin.—*Pharm. Zeit.*, 44, 179.

LETTERS TO THE EDITOR.

Company Trading in Pharmacy.

Sir,—To judge from the Annotations in this week's Journal, and also from the short abstract of my paper, I think that you quite misunderstand, not only the position which I take up, but also the drift of the discussion by members of the Edinburgh Chemists', Assistants', and Apprentices' Association which followed. As I am sure that you have no desire to misrepresent anyone, permit me to say (1), That we are not inconsistent and illogical as you suppose. We object to the Lord Chancellor's Bill because it gives away the titles to other than qualified persons. We do not propose to give companies anything which they have not already got. For about fifteen years I have protested against companies being permitted to use the titles (*Pharm. Journ.* [3], 21, p. 680), and the suggestion made by me in my paper read before the above Association to the effect that the qualified manager (or qualified assistant, if the manager be not qualified) be allowed to use the titles in connection with his own name, and not the company's, as is done at present, is neither new nor original. It was put forward many years ago at a North British Branch meeting by one of our respected fathers of pharmacy, Mr. John Nesbit, and it is a solution of the difficulty which I venture to think will ultimately be adopted. (2) You suggest in your third annotation that the motive of those who say that it would be unwise to oppose the Medical Bill arises from the system of commissions between chemists and medical men, which you seem to think prevails in this part of the country. The local correspondent of the *Medical Press*, whose remarks you quote, rather disproves this, however, than otherwise. Chemists here are on good terms with medical men, but no system of commissions is the cause, nor have I ever heard of any cases of such. You may not agree with our opinion, but surely you should not impute to us an unworthy motive. (3) On page 425 you question my statement that certain limited liability companies in London have "an arrangement with doctors and dentists to attend patients for certain fees." My authority is the *British Medical Journal*, February 2, 1895, p. 269. It quotes from a price-list of the Civil Service Co-operative Supply Co., Ltd., London, "Names of professional men with whom beneficial arrangements have been made by the Society." These include the names of a F.R.C.S. and four dentists. There are other cases, and, as I pointed out, the Medical Bill now before the House of Lords could not prevent such arrangements being made. Would it do any good, therefore, for chemists either to be included in the Bill, or to oppose it if not included? In conclusion, I may point out that all that I urged in my paper and what the Association endorsed was entirely in accord with the suggestion made by our worthy President, Mr. Hills, who, in his speech at Nottingham on April 27, said: "It will be for the chemists of this country to consider whether, in the future, it will not be necessary in some way—while protecting in every possible way the interests of the qualified individual both to title and position—to regulate company trading in such a way as will be for the public interest and also at the same time entirely in the interests of the qualified individual."

Edinburgh, May 8, 1899. Claude F. Henry.

Paraffinum Liquidum.

Sir,—In looking through the admirably written notes which are appearing in the *Pharmaceutical Journal* in the Students' Columns, and from which I have myself derived no little instruction, I noticed a statement under "Paraffinum Liquidum" which hardly agrees with my own experience. It is stated in the Notes that "sulphur compounds, if present in the crude oil, are found in the various fractions." This, I think, is true of the lighter fractions, but not of the fractions from which the B.P. paraffinum liquidum is obtained. This oil in its unpurified state is free from sulphur, the only source of which appears to be the sulphuric acid used to bleach the oil. My theory is that the acid acts on the napthenes (unsaturated hydrocarbons), forming sulphonic compounds, which are reduced by the lead salt, sodium plumbite, to mercaptans or analogous bodies, and that these behave as sulphides with the excess of lead, giving an orange or black coloration. This as far as I know has not been proved experimentally, but everything points to it.

London, May 8, 1899. F. C. J. Bird.

How to Oppose the Lord Chancellor's Bill.

Sir,—I should like, through the medium of our Journal, to suggest a means of bringing the opinion of the trade in a united manner before the members of the House of Commons when the Bill introduced by the Lord Chancellor reaches them, if it ever does. Much as I admire the energy of the Dewsbury Association in petitioning each member of the House of Lords, I think this is a matter on which the trade, as a whole, whether members of the Pharmaceutical Society or of local associations, or not, should make its voice heard. I would suggest, therefore, that the Watch Committee of the Council should cause a circular to be sent to each local secretary, requesting him to summon a meeting of all qualified individuals in his district on a day to be fixed by the Watch Committee. These meetings should be held on the same day throughout the length and breadth of the land; identical resolutions, drafted by the Watch Committee, submitted and posted in the evening of the following day to their member of Parliament, so that each member would receive the resolutions at one and the same time. Of course, where local Associations exist these meetings should be called together by the local organisations. I hope this suggestion may commend itself to the members of the Watch Committee and that the resolutions may be carried in each case *nemine contradicente*.

Bradford, May 9, 1899. Alfred H. Waddington.

The Forthcoming Council Election.

Sir,—The dose of "Gifford" lecture administered in the Journal (Letter to the Editor) of 6th inst., intituled as above, disagrees with us. It is of bad taste, badly concocted, essentially weak, and turns the plain fact to the left about face. While sorry to hurt any man's feelings, if he has feelings, I am certain sure that such mental pabulum as is given in Mr. R. L. Gifford's letter makes the more sensible adherents of the Society doubt, not to say despair, of the Council over realising how it stands, or of ever having a definite conception of what is required of it, or of ever having a purpose firm. Mr. Gifford presumes to express the inner consciousness of the Council; and poses as an examiner of Mr. Glyn-Jones as a candidate for Council honours. He is, let us hope, suffering from optical delusion in his mind's eye in each pose. He refers to us as "crossing a stream," when wallowing in a slough would be a more accurate simile; and he makes mention of "men whose views are perfectly sound," oblivious seemingly of the fact that the Council has been made up of these men, whose views are perfectly sound, for over fifty years, while the welfare of the general body has enjoyed a partial decline for a generation past. The views may be perfectly sound, but they are dissolving. As for Mr. Glyn-Jones and his qualification for the Council, those characteristic traits are not unfavourable—viz., when he is reviled he reviles not again; when he has a definite purpose he moves towards it without deviation. He has united upwards of 3000 pharmacists in one common object, and he sinks personal feeling in pursuing his object and keeps a firm grip of the head line. Though not a member of the P.A.T.A., I have no little admiration for its secretary, and a vote for him in the coming election. Whether the business of a pharmacist is to be a trade, calling, or profession depends chiefly on circumstances and environment; it is for the individual concerned to decide, and that should be without the bounds of Council deliberations. We need now more than ever before men with resolution and determination, who will not be disconcerted by any sudden squall, whether from the Lord Chancellor or the Lord knows who—men who will boldly seek the legislative chamber, risking to lose what we now have (or are supposed to have) in a straightforward way that cannot be discreditable to us, rather than have it frittered away and filched from us till only a husk is left, and we with weeps and wails do nothing but hug the bare bones of our "honourable calling" and anathematise the degraded fellows of trade. Let us strike the iron till it gets hot.

Larbert, N.B., May 9, 1899. Alex. Laing.

Sir,—Allow me, through your valuable columns, to reply to your correspondent, "Enquirer." Mr. R. E. Wright, the assistants' candidate for a seat on the Council, was some time ago in the employ of "the Hull Drug Co., Ltd." To many who might be inclined to think the fact of having been in such employ may be detrimental to a candidate for Council honours, I would say that he is a fit and proper person to represent us, as, having been in the enemy's camp, and knowing something of company trading, his knowledge of such matters might prove to be of no little value when this important topic is discussed at Council meetings. I would ask all my fellow assistants to vote for Mr. Wright, as this is the first time in the history of the Society that we have had a chance of direct representation. I am proud to say that several assistants' associations in the provinces have promised to support him, and I trust all those who do not belong to Associations will do the same.

London, May 10, 1899. E. Whineray, M.P.S.
Chairman, Chemists' Assistants' Union.

ANSWERS TO QUERIES.

Chelsea Physic Garden (W. B.—27/34).—Fresh arrangements for admission to the garden have yet to be made, and we understand it is uncertain when the newly-appointed Committee will be in a position to make them.

Sensitising Solution for Post-cards, etc. (H. B. C.—27/32).—Several formulæ have been published (see *ante*, p. 106*d*), but the ordinary ferro-prussiate solution could be used, with the addition of about five per cent. of gum arabic to the solution.

One-Solution Metol-Hydro. Developer (S. J. E.—27/7, and others).—A less soluble preparation is now being supplied under the name of "metol," and the quantity of water stated in the formula published in our last Photographic Supplement must therefore be increased to 20 ozs.

Makers of Potash Alum (A. W.—28/16).—Try Harrington Bros., 4, Oliver's Yard, City Road, E.C.; Alfred White and Sons, Castle Street, Saffron Hill, E.C.; E. Bramwell and Son, St. Helens, Lancs.

Remedy for Corns (G. A. B.—28/9).—The substance which you state is lighted and then applied to corns is a mixture of sulphur with some resinous matter, probably shellac. No doubt it would be an effective remedy, but it would require careful application.

Ipecacuanha Wine (J. F. G.—26/23).—1. We have seen no published statements relating to the investigation of the deposit from this wine. Seeing, however, that the liquid extract is prepared with 90 per cent. alcohol, it is probably resin and associated colouring matter, which would be insoluble in the wine, as that is of much lower alcoholic strength than the liquid extract. 2. Refiltration will probably not affect the alkaloidal strength of the wine.

Poison for Bed Bugs (A. C.—28/11).—If the room is in an old house, with much woodwork, we fear your chance of thoroughly eliminating the pests. The paper should be removed from the walls, and these and the floor thoroughly washed over with a strong solution of naphthalin in paraffin oil, or in turpentine if the odour of paraffin is objected to. The bedstead should be taken to pieces and every part similarly treated, and then exposed to bright sunshine for a day. The bed bug detests light, and that alone is a good remedy. Solution of carbolic acid is also good, but not so effective as naphthalin.

Mouth Wash (H. W. 26/14).—You say you experience difficulty in preparing the following mouth wash, which you practically always get in the form of a jelly :—

℞	Tinct. Iridis	ʒix.
	P. Sapo Alb.	ʒvi.
	Acid Carbol.	ʒi.
	Ol. Caryophylli	gtt. xij.
	Tr. Krameriæ	ʒi.
	Glycerin.	ʒiss.
	Cocci Cacti	Gr. iij.
	Aq. Menth. Vir.	ad ʒxviij.

The tinctura krameriæ may be the cause of the trouble you experience, but it is rather difficult to advise you, as we do not know the composition of the tinctura iridis you are using. We would suggest that, as an experiment, you make up the prescription with an equal quantity of suitably diluted spirit substituted for the two tinctures. If the product is still gelatinous, try soft soap in place of hard soap. Note also whether the soap you have been using complies with the B.P. tests for solubility of sapo durus. If you still fail to solve the difficulty, send us a sample of the tinct. iridis and soap which you have been using, and we will endeavour to assist you further.

ROYAL COLLEGE OF SURGEONS ENGLAND
19 MAY 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Scoparin.

A. G. Perkin points out that scoparin, the colouring matter of broom (*Spartium scoparium*, L.), was discovered by Stenhouse (*Annalen*, 1851, 78, 17), who assigned to it the provisional formula $C_{21}H_{22}O_{10}$ (mean of analyses, C = 57·67 ; H = 5·34), and that Hlasiwetz (*Annalen*, 1866, 138, 190) included scoparin in the quercetin group, for, on fusion with alkali, it gave phloroglucinol and protocatechuic acid. The similarity of the dyeing properties of scoparin and vitexin pointed to their close relationship (*Trans. Chem. Soc.*, 1898, **73**, 1019). The results of Stenhouse and Hlasiwetz (*loc. cit.*) have been confirmed, as analysis gave C = 57·60, H = 5·09, and fusion with alkali at 220°, phloroglucinol and protocatechuic acid. Digested with hydriodic acid, one molecule of methylic iodide is evolved (found, CH_3 = 3·88), and a new colouring matter, *scoparein*, results, distinguished from scoparin by its strong tinctorial properties. With boiling potassium hydrate solution, scoparin gives phloroglucinol, vanillic acid, and a third substance, $C_9H_{10}O_3$ (found, C = 64·82 ; H = 6·17), colourless needles m. p. 114°. As this latter contains one methoxy-group (found, CH_3 = 9·65), reacts with semicarbazide, and on fusion with alkali gives protocatechuic acid, it is a *dihydroxyacetophenonemonomethyl ether* (probably $OH : OCH_3 : COCH_3 = 1 : 2 : 4$). Solutions of vitexin and scoparin in sulphuric acid, when heated, both develop a dull green coloration. The former by decomposition with alkali, gives *p*-hydroxyacetophenone and phloroglucinol, and it is thus very probable that scoparin is a *methoxy-vitexin*.—*Proceedings of the Chemical Society*, **15**, 123.

Nucleus of the Yeast-Plant.

Mr. H. Wager appears to have finally settled the vexed question of the presence of a nucleus in *Saccharomyces*. In all the species examined—*S. cerevisiæ*, *ludwigii*, and *pastorianus*—he finds what he calls "nuclear apparatus." This consists, in the earlier stages of fermentation, of a nucleole, in close contact with a vacuole containing a granular chromatin network, and probably the result of the fusion of smaller vacuoles. The nucleole is invariably present in all stages. In the process of budding the division of the nuclear apparatus does not exhibit any definite karyokinetic stages; the nucleole divides directly into two daughter-nuclei. This division takes place either in the neck which connects the bud with the mother-cell, or less often in the mother-cell itself.—*Annals of Botany*, **12**, 499.

Syrupus Pruni Virginianæ.

Professor Remington proposes a formula for this syrup, in which very dilute acetic acid is employed to exhaust the drug. Each 150 Gm. of the wild cherry bark, in No. 20 powder, is macerated with 50 C.c. of diluted acetic acid, U.S.P., for twenty-four hours, then allowed to percolate into a vessel containing 150 C.c. of glycerin, and percolation continued with more acid until the product measures 450 C.c. In this liquid 700 Gm. of sugar is dissolved by agitation, without heating, and, after straining, enough diluted acid is passed through the strainer to make the product measure 1000 C.c. The resulting light reddish-brown syrup is said to have the characteristic peach kernel flavour, with a decidedly agreeable acidulous taste; the astringency is greatly modified, and hydrocyanic acid is present in the syrup. The effect of placing the glycerin in the vessel receiving the percolate, instead of adding it to the menstruum before percolation, is to prevent the decomposition which takes place rapidly when a solely aqueous menstruum is employed. In addition, the syrup contains much less tannin, the solvent action of the glycerin not coming into play. With regard to this point, Professor Remington is of opinion that many fluid extracts and syrups, in the preparation of which glycerin is used, would be improved by adding the glycerin to the percolates rather than to the menstruum prior to percolation.—*Am. Journ. Pharm.*, **71**, 209.

Inulin.

Dr. H. Fischer finds inulin to be a more widely distributed substance in the vegetable kingdom than has generally been supposed. From its osmotic properties he regards the molecule as 300 times as large as that of fructose, and 150 times that of saccharose, giving the formula $333\ C_6H_{10}O_5 = C_{1998}H_{3330}O_{1665}$. Inulin gives no reaction with iodine, and the mode of swelling by absorption of water is quite different from that of starch or gelatin. The sphærites increase in volume on absorption of water, but do not pass gradually into the soluble condition ; they dissolve completely like crystals, or break up into granules. Sphærites of inulin also differ from those of other substances in their deep radial fissures. Inulin is especially characteristic of the Compositæ, occurring in most of the tribes, and in a large number of the genera. Dr. Fischer has also found it in the allied orders Campanulaceæ, Lobeliaceæ, Goodeniaceæ, and Stylidiaceæ ; occasionally in other orders, but very rarely in Monocotyledons. Inulin must undoubtedly be ranked among the reserve-food-materials.—*Cohn's Beitr. z. Biol. d. Pflanzen*, **8**, 53.

The Autumn Colouring of Leaves.

Mr. E. Overton classifies those leaves which turn red in autumn under two heads, the first comprising those which, formed during the later part of the summer, remain till the following spring or summer; the second including those which fall soon after attaining their red tint. The colour is due to the appearance of a red cell-sap in the palisade cells and in those which line the air-chambers of the leaf. The pigments are of the nature of glucosides, and are in most cases compounds o tannins and sugar. The author found that, by cultivating *Hydrocharis morsus-ranæ* in a weak solution of glucose, the leaves can be made to assume a rich reddish-brown tint ; and similar results were obtained with *Utricularia*, and with some, but not all, land plants.—*Pringsheim's Jahrbücher*, **33**, 171.

Japan Wax in Ointments.

R. C. Pursel recommends the substitution of Japan wax for beeswax in ointments, because it is much less expensive, less likely to be adulterated, and yields products which compare favourably with those prepared with beeswax. *Simple Ointment* and *Cerate* respectively are made by mixing lard, 85 or 80, and Japan wax, 15 or 10. *Oxide of Zinc Ointment* is prepared with benzoinated lard, to which 3 per cent. of Japan wax has been added, or 1·5 per cent. of white wax and 2·5 per cent. of Japan wax. For *Cold Cream* take of spermaceti, 12·5 Gm. ; Japan wax, 10 Gm. ; almond oil, 62 C.c. ; stronger rose water, 19 C.c. ; borax, 0·5 Gm. If a harder preparation be desired, replace the spermaceti with an equal weight of Japan wax. *Tar Ointment* is made by mixing tar, 50 Gm. ; Japan wax, 10 Gm. (or Japan wax and beeswax, each 5 Gm.); lard, 40 Gm. For *Camphor Cerate*, take of camphor liniment, 10 Gm. ; Japan wax, 20 Gm. ; lard, 70 Gm. *Resin Cerate* is made with resin, 35 Gm. ; Japan wax, 10 Gm. ; lard, 55 Gm. *Goulard's Cerate*, with Goulard's extract, 20 Gm. ; camphor cerate, 80 Gm. *Spermaceti Cerate*, with spermaceti, 10 Gm. ; Japan wax, 25 Gm. ; olive oil, 65 Gm. Finally, for *Cantharides Cerate*, mix cantharides in No. 60 powder, 32 Gm. ; Japan wax, 12 Gm. (or beeswax, 5 Gm. ; and Japan wax, 7 Gm.) ; resin, 18 Gm. ; lard, 28 Gm. ; turpentine, 15 C.c.—*Am. Journ. Pharm* , **71**, 217.

Improved Paregoric. T. S. Wiegand prepares a tinctura opii deodorata cum camphoræ by macerating a drachm of powdered opium with an ounce of ether for two days, then percolating with more ether until the percolate is nearly colourless and a few drops evaporated leave no opium odour. He then evaporates the percolate to half an ounce, adds it to sixteen ounces of water, and drives off the ether by warming gently. A drachm each of benzoic acid and anise oil, together with 40 grains of camphor, are then dissolved in an ounce of alcohol, the solution diluted with twelve ounces of alcohol and mixed with the aqueous solution, after which sufficient alcohol is added to make thirty-two fluid ounces. Stand for twenty-four hours, shaking frequently, then filter. If, in making the above preparation, 64 grains of opium be taken instead of a drachm, the product will correspond in strength with tinctura camphoræ composita, B.P.—*Am. Journ. Pharm.*, 71, 256.

Physiology of the Flower. According to M. G. Curtel, the respiratory power of the flower is, in general, higher than that of the leaves; even when the calyx is green, it exceeds the assimilating power; while in the bud assimilation preponderates over respiration. The respiratory power of coloured flowers is higher than that of white flowers in the same species. Transpiration is more energetic from petals than from leaves, sometimes as much as three or four times as great. All the parts of the flower—peduncle, calyx, and corolla—acquire a more vigorous development when growing in the sun than in the shade, and the tissues are more completely differentiated. In the shade the flowers appear more slowly, are smaller, less numerous, and less brightly coloured; the fruits are fewer, and contain fewer seeds.—*Ann. des Sci. Nat.* (*B t.*), 6, 221.

Syrup of Hydriodic Acid. E. H. Wells is of opinion that the coloration of syrup of hydriodic acid is not invariably due to liberation of iodine; in most cases it seems to result from the action of the acid on impurities in the sugar, or on the sugar itself. A syrup prepared with a light syrup (650 Gm. in 1 Litre) made from pure white rock candy crystals has been kept without change for months, in partly filled bottles exposed to light and opened from time to time. The syrup becomes coloured when heated, however, and it should not, therefore, be kept in a warm place. When heavy syrup is employed, a white crystalline deposit sometimes occurs, but a syrup carefully prepared from pure materials is perfectly colourless and limpid, and constitutes a permanent and satisfactory preparation.—*Am. Journ. Pharm.*, 71, 254.

Relation between Insects and Flowers. Professor F. Plateau pursues his adverse criticism of the theory that insects are attracted to flowers chiefly by the sense of sight when effecting cross-pollination. He removed the conspicuous coloured bracts from *Salvia horminum* and the conspicuous sterile flowers from the inflorescence of *Hydrangea opuloides*, and found that the pollinating insects still made their way at once to the flowers which contain the honey, the number of visiting insects not being materially affected.—*Mém. de la Soc. Zool. de France*, 11, 339.

Copper in Plants. According to Professor D. T. MacDougal, copper is an element of very wide distribution in plants, and, in very minute quantities, does not appear to have any injurious effect upon them. It occurs in the form of finely-divided, reddish-brown particles in the tracheids, vessels, and medullary parenchyma.—*Bot. Gazette*, 1899, 68.

PHARMACY IN GERMANY.*

BY RUDOLPH BREVES, PH.G., STUTTGART.

To enter the pharmaceutical profession in Germany, it is necessary for the would-be apprentice to come into possession of the so-called "Einjährig Freiwillig Zeugniss," which enables him to escape with one year's service in the army while other citizens have to serve two or three years. His studies must have included Latin, and he must hold a certificate nearly identical with that from an American high-school. His age must be between sixteen and eighteen years, and while an apprentice, the proprietor is bound to supply him with practical and theoretical information and experience. At the end of his apprenticeship he is required to pass an examination in the studies he has pursued as apprentice, and if he passes he can serve as assistant in any part of Germany. Before being permitted to enter the university to take his degree and to become a full-fledged pharmacist, he has to serve another three years as assistant. At the expiration of this time he is permitted to matriculate and serve another three years as student. During these three years he attends lectures twenty hours per week and is expected to work in the laboratory the balance of his time. As no record is kept of his coming or going, this "academic liberty" makes him master of his own movements to some extent.

The chemical laboratories are open on week-days from seven to twelve in the forenoon, and except on Saturdays, from two to five or six in the afternoon. As most of the students are anxious to quickly reach the honour of being full-fledged pharmacists they go directly from the lecture hall to the laboratory. When they feel that they are able to meet the requirements of the institution they voluntarily apply for examination. This consists in both oral and written questions in pharmacy, botany, microscopy, physics, sometimes mineralogy, and laboratory tests of skill in qualitative, gravimetric and volumetric analyses, toxicology, and practical pharmacy. In the oral examinations but four candidates at a time are admitted.

The practical pharmacy examination occurs in the presence of some proprietor of a pharmacy, and consists in the making of pharmacopœial preparations. This same pharmacist endeavours to ascertain how much the applicant knows about pharmaceutical science and the laws controlling pharmacy. These examinations are very strict, no one being able to pass unless thoroughly qualified; and if he receives his diploma with honourable mention, by studying three terms more he is permitted to apply for the degree of "doctor of philosophy." This is a special concession to pharmacists, as all other students seeking this degree must possess the "Maturum," that is, must have graduated from the "Gymnasium" or "Realschule" after attending nine to ten terms.

The German universities are very liberal to foreigners, permitting them to pass with much lower qualifications than they exact from their own people; but although the foreigners receive degrees upon such easy terms, they are not permitted to practise any profession to which a degree might entitle them unless they can supply evidence of a sufficient preliminary education at a German institution or of having passed an examination before a German board. No one can blame the German government for this, as it would be very unjust to their own citizens to force them to study for so many years and allow foreigners to pass and enter into competition with them without the same qualifications. Another concession granted to pharmacists who have received their diplomas with honourable mention, is that they are allowed to get a diploma as "Nahrungsmittel Chemiker" without having to pass the first examination. This diploma of food-analyst is

* Reprinted from 'Merck's Report.'

granted after six terms of study, one and a half years of practical experience at a royal or municipal institution where such analyses are performed, and two examinations.

Young pharmacists in Germany must bide their chance before they can become proprietors of a pharmacy. The number of pharmacies is limited by the government, and it is not easy to get hold of one. When a vacancy occurs the fact is advertised, and in the competition as to who shall be the next proprietor a full account has to be given of the applicant's education, apprenticeship, clerkship, and financial means. The chances are that they must wait many years before circumstances favour such an ambition. Many pharmacists, despairing of ever reaching the goal, become chemists or open stores where without a licence or concession they can sell drugs, but are not permitted to put up prescriptions. These druggeries, like American drug stores, sell brushes, sundries, paints, and even photographic goods or groceries, as well as drugs—things that cannot be found in any pharmacy. They are not allowed to sell cinchona, aloes, belladonna, henbane or other poisonous drugs; but they may sell for technical purposes potassium bromide, pyrogallic acid, silver nitrate, etc.

As the domain of the "druggist" infringes on that of the pharmacist, it is often the cause of much conflict and trouble. Pharmacists are jealous of their rights, and will not stand idly by and let the druggists wantonly infringe upon them. The latter have the public on their side, while the former have the name of being exorbitant in their charges, a thing the public cannot endure patiently. At present there is a merry war going on between the two factions, and the proposed cure for the evil is a reduction in the number of pharmacists, to be brought about by raising the standard for pharmacists still higher. The government is asked to compel all students in pharmacy to increase their terms of preliminary study and to take from them the privilege of a diploma unless they first possess the "Maturum." It is proposed, however, to reduce the apprenticeship to two years.

This is the burning question of the hour in Germany. There is no doubt but that the pharmacist would win by this change, as he would be first to fill the place of an analytical chemist; but it is asked on the other side why he should first study pharmacy instead of preparing himself directly for chemistry.

The ambitious student can never be content to work from 7 a.m. till 10 p.m., standing ready at the public call, because he is not fortunate enough to possess the small fortune necessary to buy a pharmacy when one happens to become available. With higher education the pharmacist will get better representation than he has at present. Inspection now lies in the hands of physicians and government officials having no idea of the wants of pharmacy. A great deal of bureaucratism is shown in the ordinances that control us. While potassium iodide, sodium salicylate, and iodoform are not allowed to be sold except on a physician's prescription, salicylic acid and sodium bicarbonate are free, and the buyer can thus make his own solution of sodium salicylate.

German pharmacies are inspected every year. The commissioner sees to it that all drugs are fully up to pharmacopœial requirements, that all containers are properly labelled, and that the different medicines are properly classified and cared for. Tabula B includes medicines generally called "poisonous," such as arsenous acid, phosphorus, strychnine, mercury salts, veratrum viride, etc. The labels on the containers must have white letters on a black ground, and the containers themselves kept in a poison closet. Tabula C represents the so-called "Separanda." This list contains the mineral acids, iodoform, chloral hydrate, silver nitrate, tincture of aconite, and some other preparations and chemicals. The labels for this class must have red letters on a white ground, and the containers must be kept by themselves.

The prices for prescriptions in Germany are uniform, being regulated by the 'Apotheke Taxe,' published by the government. The different manipulations, the making of pills, suppositories, and powders, the weighing, dissolving, and mixing of the diverse ingredients, and the prices of the containers, are all regulated by law.

Up to six years ago only "realconcessionen" were given out. Such pharmacies could after ten years be sold by the holder. Now this is changed, the concessions being declared personal and not saleable. As soon as a proprietor dies the business falls back into the hands of the government. If he has children under age a manager is put in charge till they reach their majority and qualify.

It is a pity that German pharmaceutical students are compelled to spend three months at work in toxicology in the laboratory, thus taking them during their three short terms away from more valuable work. The lectures on this subject should be enough to satisfy all requirements. There are plenty of qualified chemists to look after such work, and to perform the difficult examinations. More interest should be paid to bacteriology, which up to this time has not been made obligatory, and to technical chemistry, which is now dealt with in the "Technische Hochschule," but much neglected at the universities. What the Technische Hochschulen have done in the short time of their activity may be easily seen in their rapid growth. They turn out chemists who are always preferred in the chemical industries. Their matriculation requirements are the same as those at the universities.

The question of government protection or free trade in pharmacies is one not easy to dispose of. The writer does not believe the German pharmacist would ever have reached his present high standing under a system permitting the opening of stores anywhere. Too much competition is not elevating in its tendencies.

PICTURES PRODUCED ON PHOTOGRAPHIC PLATES IN THE DARK.*

BY DR. RUSSELL, F.R.S.

The method of taking photographic pictures in the dark has been worked out by Dr. Russell in the Davy-Faraday Laboratory. The plates are developed and fixed in the ordinary way. Zinc was the first substance to produce a picture on a photographic plate in the dark. A sheet of the metal was sand-papered and then placed on the film side of a sensitive plate in darkness. After an exposure of about half an hour, the plate, on development, showed a picture of the zinc.

Substances of all kinds were then treated in a similar manner, and it was found that only certain bodies have this power. They may be grouped into two classes: (1) Certain metals and alloys: (2) certain organic substances. Of the metals magnesium, cadmium, zinc, nickel, aluminium, lead, bismuth, tin, cobalt, and antimony are active; magnesium and zinc possessing the property in a greater degree than the other metals, antimony being the least active. The action does not take place when the metallic surface is smooth, and is in all cases slower than that of light on the sensitive plate. Temperature has a marked effect on the action; *e.g.*, a sheet of zinc at a temperature of 25° C. gave a picture in half an hour, while two days were required at 15° C. Contact is not necessary, since the action goes on through a certain distance. Beyond a particular point, however, the image becomes indistinct.

By placing a Japanese stencil between the zinc and the photographic plate, an image of the stencil was obtained. Dr. Russell

* Report of a lecture delivered at the Royal Institution on Friday, May 5.

proceeded to give an account of other interesting experiments. The elements nickel and cobalt differ in this respect, inasmuch as nickel is far more active towards a plate than cobalt. Brass gives curious results, since the activity varies according to the amount of zinc present, 50 per cent. of zinc giving a faint, and 70 per cent a good picture.

All the organic bodies that act on a plate are terpenes. Turpentine is very active; this is easily proved by pouring a small quantity into a shallow glass dish, such as is used in bacteriological work, and covering it with a sensitive plate. Dipentene is very active, at first it gives a dark picture, then a light one by reverse action. Eau de Cologne, powdered cinnamon, coffee, tea, and wines among other substances examined in like manner give a picture. Of fixed oils linseed is far more active than olive oil, but mineral oils are inactive.

These points were all illustrated by a series of lantern slides, the next two of which showed the effect of a butterfly's wing and a peacock's feather. Blues have no action on the plate, whereas reds are active. As a general rule optical colours are inactive and pigment colours active. Printers' ink is active, owing to the linseed oil which it contains, but not always to the same degree. Specimens of three papers were exhibited—the *Standard*, the *Evening News*, and the *Westminster Gazette*, illustrating this point. According to Dr. Russell, *Punch* uses an ink of very great activity.

The action is capable of taking place through certain materials; among those that are transparent to the action are gelatin, celluloid, goldbeaters' skin, gutta percha, and albuminised paper. Paraffin and ordinary writing ink are examples of bodies that are opaque to the action. This opacity is retained even in very old writing, samples of which were shown over a hundred years old. Of these the most interesting was one written in 1792, by Priestley, soon after the Birmingham riots. The action works its way through porous bodies, *e.g.*, paper and parchment.

Speaking of the nature of the action, the lecturer drew attention to the work of Moser, a German professor, some fifty years ago, who experimented with brilliant metallic plates. He had a theory that there existed a suble something which he termed "dark light." Later investigators have attributed the action to the vapour of zinc. Dr. Russell himself considers it due to the formation of hydrogen peroxide. Though there is no physical proof of this theory, yet there is ample evidence in its favour. First, the metals before enumerated all have the power of giving off hydrogen peroxide in a moist atmosphere; secondly, the terpenes, as is well known, oxidise in moist air, with the production of hydrogen peroxide; thirdly, all the foregoing experiments can be imitated by using hydrogen peroxide. This substance is active in minute quantities, thus, when present in water to the extent of 1 part per million it acts in a few seconds.

As a large amount of aqueous vapour is inconvenient, better results are obtained by damping white blotting-paper with the solution and hanging it in the air till dry. The paper will then be active. A better method consists in making plaster of Paris into a slab by means of the solution of hydrogen peroxide. With these materials the experiments may be repeated, and it is found that the same substances are transparent or opaque to hydrogen peroxide as to the metallic and organic substances previously mentioned.

The clue which led to the theory that hydrogen peroxide caused the action was given by a varnish which was used to protect a plate from the zinc. In this case the action was the more intense, and it was attributed to the turpentine in the varnish because it was remembered that the substances found to be active, metallic and organic, are all capable of giving off hydrogen peroxide as the result of oxidation in a moist atmosphere.

Anyone can perform these experiments by taking a piece of Bristol board charged with hydrogen peroxide, in the same way as the blotting-paper, and placing it upon, say, a piece of lace, which in its turn rests upon a photographic plate. The whole must then be left in the dark for about half an hour. The plate, on development, will show an accurate reproduction of the lace design.

MAGNETIC PERTURBATIONS OF THE SPECTRAL LINES.*

BY PROFESSOR THOMAS PRESTON, M.A., D.SC., F.R.S.

In introducing this subject, the lecturer first proceeded on historical linos, showing that the inquiry concerning the possibility of magnetism exerting any action on light is an old one. Michael Faraday was the first to study the question, many of his experiments being on record. Thus, he passed a beam of ordinary light across the magnetic field, without result. He then tried plane polarised light in the same way, and failed repeatedly to establish the fact that the magnetic field does act upon light, though he finally, and this was his very last experiment, placed the source of light within the magnetic field, a method that has since given good results in the hands of other investigators.

In the year 1885 it was seen that the spectral lines became broadened. The scientific world refused to accept the proof until 1897, when other investigators amply confirmed the proposition that the broadening was a magnetic effect.

Extreme care must be taken in reproducing the effect by photographic means, since by varying the exposure the lines may be made broad or narrow at will. Professor Lawrence and Dr. Larmor worked out the problem mathematically, and came to the conclusion, not only that the lines are broadened, but that each is a triplet. Just as theory in the first place led Faraday to take up the subject so now theory again became helpful. Dr. Preston thought that the middle line might be polarised in a different plane from the two outer lines of the triplet. He therefore introduced a Nicol's prism, and so cut off the outer edge; next he turned the prism through a right angle, and cut out the middle of the broadened spectral line.

By means of a model the lecturer went on to explain how he arrived at the theory which helped to solve the problem. It is assumed that each particle of matter in the magnetic field is an ion, *i e*, is electrically charged. It moves in its own orbit, and the orbit in its turn revolves round the magnetic lines of force. From this the theory of it is argued out not only that each spectral line is converted into a triplet by the magnetic field, but that each constituent line of a triplet may in its turn become a triplet. The theoretical explanation has been worked out and put before the Royal Society of Dublin by Dr. Stoney.

Abstruse and uninteresting as this subject may at first appear it nevertheless leads up to what is perhaps the second greatest problem that tasks the human mind, viz, the ultimate composition of matter. The old idea of Proust that all matter is made up of one fundamental substance has been upset time after time; nevertheless it recurs again and again to the minds not only of ignorant, but also of scientific men. The latest support is derived from the study of the magnetic action on the spectral lines. A law has been enunciated that the speed with which the orbit revolves in a magnetic field is the same for all spectra. In other words the distance between two lines is inversely as the square of the wavelength. Though this law does not hold good in all cases it does for some sets of lines. It follows from these considerations that the chemical relations of the elements may be reproduced in their

* Report of a lecture delivered at the Royal Institution on Friday, May 12.

spectra, and the lecturer ventured the thought that this line of work may ultimately prove that all matter can be reduced to one or very few elementary types.

In his concluding remarks the lecturer said that it matters not if this speculation as to the ultimate composition of matter prove baseless. Already it has done good service to mankind, for the earlier alchemists were imbued with it when they endeavoured to transmute the baser metals into gold and find the philosopher's stone. They did not succeed in their enterprise, but instead they helped to build up the foundations of the chemical and physical sciences of to-day. There is yet no sufficient reason for abandoning the hope that all matter may be found to be composed of one fundamental substance. The spectroscope, on the other hand, lends it some support, as in Sir Norman Lockyer's recent experiments on the spectra of the fixed stars. Though the direct results may be negative and obscure, they may lead to knowledge of the highest importance, just as Lord Rayleigh's ultra-refined methods of dealing with atmospheric nitrogen led him unexpectedly to the discovery of argon.

ANALYTICAL NOTES.

Detection of Horseflesh in Sausages.—T. Bastien, not having found satisfactory the published methods for the detection of horseflesh mixed with other meats in dietetic articles, advocates the following method for obtaining the well-known iodine glycogen reaction. Twenty grammes of the material are boiled for thirty to sixty minutes with 100 C.c. of water until the volume of the liquid is reduced to 30 C.c. It is then cooled and filtered through a moistened paper. To the filtrate, a few drops of a solution of iodine, 1; potassium iodide, 2; in water, 100, are added. A reddish violet colour indicates the presence of glycogen, which is characteristic of horseflesh. In the presence of starch, the cooled aqueous extract is decanted and one or two volumes of acetic acid added; after standing for five minutes the mixture is filtered and the test applied as before.—*Journ. de Pharm* [6], 8, 540.

Separation of Peptones from Albumoses.—A solution of albumoses and peptones, free from coagulable albumin, may be, according to Duppum, fractionally precipitated from neutral solution by means of ferric chloride, care being taken to avoid an excess of the precipitant. In this manner all the albumoses may be thrown out, while peptones will remain in solution.—*Pharm. Centralh.*, 39, 557.

Testing Sodium Bicarbonate.—Skubich tests for monocarbonate in sodium bicarbonate thus: 1 Gm. of the salt is dissolved by gentle agitation in 20 C.c. of decinormal potash solution, 40 C.c. of barium chloride (10 per cent.) solution are then added; after standing a little phenolphthalein solution is added, and the amount of free alkali determined by titration with decinormal HCl solution; not more than 8 3 C c. should be required. This test will indicate the presence of 2 per cent. of monocarbonate.—*Repert.* [3], 11, 75, after *Apoth. Zeit.*

Telluric Acid a Reagent for Solanine.—A solution of telluric acid in diluted sulphuric acid affords a ready means for the detection of minute traces of solanine. On gentle heating on the water bath, the reagent gives with solanine a pronounced raspberry red colour, lasting for two to three hours. This reaction is not produced by any other ordinary alkaloids.—*Pharm. Cent.*, 40, 156, after *Ztsch. f. angew. Chem.*

PHARMACEUTICAL SOCIETY.

THE ANNUAL MEETING.

The fifty-eighth annual meeting of the Pharmaceutical Society of Great Britain was held on Wednesday, May 17, the chair being taken at 12 o'clock by Mr. Walter Hills, President.

The Secretary read the notice convening the meeting, and the annual report (see *ante*, p. 411) was taken as read.

The President, in moving that the report be received, adopted, and entered on the transactions of the Society, said: I do not intend to speak at any length this morning or to go into matters of detail, but I propose to speak on one or two paragraphs in the report which are, perhaps, at the present time of special interest to the members. We are here, gentlemen, to give an account of our stewardship during the last twelve months, and I take it that you, as business men, do not wish to hear too much talk, but are rather here to say "yes" or "no" as to whether we have on the whole merited your approval and done to the best of our ability what was for the interests of this Society and its members. There are, of course, various criticisms from time to time on the work for the Council. Those criticisms are very often hostile—uniformly hostile in some quarters—and they are not always consistent, but the question is whether, under the circumstances of the time, we have generally done well and our conclusions have been generally wise.

First of all I should like to recall the fact to you that we have during the last year lost from the Council one of our most active members, in the person of Mr. Hampson, who was for some time Treasurer. I am sure that you, like his colleagues on the Council, very much regretted that he was obliged to retire through ill-health, and we sincerely trust that in the quiet of his retirement good health may be restored to him. I am sorry to say that, from the latest reports, his health is still somewhat unsatisfactory, but we live in hopes that his strength will be restored to him before long.

The Society's Financial Position.

The first paragraph to which I should like to call your attention for a moment is that on finance. You will notice that the financial statement this year has been drawn up in a different form from that in which it has hitherto been presented to you, and I think you will all agree with me that the accounts so presented appear in a more satisfactory form than they have hitherto done. I would ask you in looking at these accounts to bear in mind that such is the case, and to wait until next year, when the accounts will be presented in the same form, before you come to any conclusion as to the exact position of affairs, because the accounts which are now presented are not strictly comparable with those which have appeared before. Of course it will be seen that there is apparently a considerable adverse balance, but I have to call your attention to the fact that there have been peculiar circumstances during the past year. We have spent a considerable amount of money on the expenses connected with the passing of the Pharmacy Acts Amendment Bill of last year, and we have also spent some more on what I think is a very wise scheme—on the redemption of the leases of our property. I should also mention that there is still a considerable adverse balance on the Journal. Now, I am bound to say, with reference to the Journal, that, although in many respects it is satisfactory, still I should like to see that adverse balance reduced, and I have reason to believe that in the course of the next twelve months, under the

arrangements which we are now contemplating, and which are practically made, my successor next year will be able to show to you that the adverse balance has been very much reduced. But it must always be borne in mind that the Journal is now sent to an increasingly large number of members, both actual, honorary, and corresponding members, and, moreover, that the Journal itself has been considerably enlarged from time to time. There has been a good deal more matter printed during the past twelve months than in previous years, and of course we have to pay for that increase of matter. I am not myself very much exercised about this adverse balance. I think that while we are doing good work, while we are spending money well—and I hope, gentlemen, you will agree that on the whole the money has been well spent—we may look at the revenue account this year without any feeling of anxiety. I am glad to think that during the present year we have had a large accession of members, and to that extent we shall profit financially; and I think from that point of view, and also from the fact that I believe we shall have a considerable saving on the Journal account, that next year we shall find the financial statement will present a different appearance.

The New Poison Regulations.

The next paragraph to which I would call your attention for a moment is that of the Poison Regulations. I do not think it is necessary for me to speak at any length upon this point now, because it was only quite recently that a special meeting was convened here on that subject. I, personally, am pleased to think that at that meeting the Poison Recommendations were approved and made compulsory regulations unanimously. I think, gentleman, as I said at the end of that meeting, that a wise action was taken by the Society on that occasion, and I have no reason to think that up to the present time any serious inconvenience from the resolution then arrived at has been experienced by our members.

British Pharmacopœia Revision.

The Pharmacopœia revision is a subject in which I have taken considerable interest, and I am glad to think that new arrangements have been made respecting the future revision of the British Pharmacopœia. You are all aware that the General Medical Council has the duty imposed upon it of preparing, producing and publishing the British Pharmacopœia. In past time the assistance of pharmacists has been given in various ways, but none of those ways have been altogether satisfactory, although the work that has been done has been recognised as exceedingly advantageous by those who represent the General Medical Council, and by others. I am sure that you will all agree that the work which was done by the Pharmacopœia Committee and the Pharmaceutical Society during the past few years, in the production of the British Pharmacopœia which was published last year, was exceedingly valuable; but the method by which that help was given was not at all satisfactory. I am glad to think that under the new arrangements those who represent us and those who represent the General Medical Council will be brought into direct personal conference, and that the work will be commenced almost at once for the production of the next Pharmacopœia; in fact, the first meeting is convened for next week. Our members will meet, as I have said before, in conference with the Sub-Committee of the Pharmacopœia Committee of the General Medical Council, and they will arrange what work is to be done, and they will also consider the various criticisms that have appeared from time to time with reference to the 1898 Pharmacopœia, and I believe in this way we shall have a representation which, if not altogether ideal from our point of view, is one which we can accept at the present time as the very best under the circumstances.

The Chelsea Physic Garden.

The Chelsea Physic Garden I need not say much about, but I think it is very satisfactory to find that the Charity Commission has recognised the importance of having a member representing the pharmaceutical calling as one of the body of management, and I am glad to think that Mr. Carteighe, my illustrious predecessor, has been appointed to represent the Pharmaceutical Society on that important body.

The Pharmacy Acts Amendment Act 1898.

It is natural, perhaps, that I should say a little about the Pharmacy Acts Amendment Act of 1898. When I spoke to you twelve months ago, we were then in the throes of the conflict. I forget which stage we were in just at that particular moment, but I believe things looked a bit gloomy. But, gentlemen, you all know that by continually putting our shoulders to the wheel, by leaving no stone unturned in Parliament to disable opposition, we were enabled to get that Bill through the two Houses, and I am glad to think, as far as we have been able to judge of results, that the Act has met with general approval.

We have had a very large accession of members. I am bound to say that I am not satisfied with the numbers, still I am glad to think that we have had a large addition to our roll of membership. When I tell you that up to the present moment we have within six or seven of 2000 new members, I think you will agree with me that is fairly satisfactory. Of the associates not in business who have become members there are 675 out of a total number of 1017, thus showing that about two out of three have joined the Society as members. This leaves us with a net balance of more than 1000 new members, irrespective of those who were associated with us before as associates not in business. The result of the work that I did at the Houses of Parliament in connection with the Pharmacy Acts Amendment Bill at that time showed me what a very large amount of influence the chemists and druggists of this country have if they would only work together. That feeling, of course, was very much strengthened, and I should say that that opinion with reference to the large amount of influence which we have in the country was brought home to me more, when the Bill reached the stage of the House of Lords. There, of course, one feels that one has not that element of strength behind one, but the Bill having got safely through the House of Commons, we had to deal with it and try to get it through the House of Lords. You all know what happened at the stage of the third reading. The Council has been taken to task because they did not willingly accept the amendment which was moved at the third reading of the Bill in the House of Lords, by the Lord Chancellor, dealing with limited companies. Well, gentlemen, I believe, notwithstanding what has been said from the hostile point of view, that we carried out what was the general wish of the members of the Society at that particular juncture.

The amendment of the Lord Chancellor at that time was one which we could not accept. It would very likely have stopped the passing of the Bill altogether if it had been once admitted, and it did not meet our requirements at all, and therefore I think we were wise under the circumstances to use all our influence to induce the Lord Chancellor to withdraw that amendment, of which so very much has been said. With reference to the Poisonous Substances Bill, which was brought into the House of Lords and introduced by the Duke of Devonshire as President of the Council, I do not think it is necessary for me to say anything except that it afforded me, as your President, another proof of the considerable and very large influence which we have and can bring to bear upon members of the House of

Commons. It is wonderful to think that a few letters from the headquarters of this Society can do so much to influence, indirectly, Members of Parliament in any direction which we think desirable, but always, of course, in a direction which we consider not antagonistic to the public interests.

The Company Question.

The company question is, of course, one which I might talk about for a long time, and I have had opportunities of giving my opinions with respect to it on various occasions during the past twelve months, but I think that the action of the Council during the last few months has been a wise one, and I hope that you, gentlemen, will also agree that we have acted wisely. I have seen somewhere certain criticisms with regard to the statement that though "the exertions of the Council to secure an amendment of the law under which incorporated companies are permitted to evade the Pharmacy Acts, have continued without intermission for the past four years; it is to be regretted that no successful issue can be reported." I beg to say, gentlemen, that that is perfectly correct. I have been on the Council for a good deal longer than four years, and I may say, as a matter of fact, that the efforts of the Council have been continuous to promote the objects which we have in view, for more than four years. It is not always that the action which we have taken has been published in all details, but I say unhesitatingly that we have, during that time, had this subject constantly under our consideration, and that we have, to the best of our ability, done all we could to get an alteration of the law in the direction in which most of us wish to see the law amended.

I may remind you that there was a Departmental Committee of the Board of Trade appointed in the month of November, 1894. That Committee was appointed to consider any desirable alteration of the Companies Acts, especially in relation to the financial aspects of the question. There was a report of that Committee, and on that report a Bill was drafted which did not contain a clause dealing with the question at issue; that is to say, the question we were particularly interested in. But I may remind you—this has been stated before—that my predecessor drew up a considerable amount of information with reference to this subject of company trading, especially as regards what we call "bogus-company," or "one-man-company" trading; and that he supplied this information to the Committee of the Board of Trade, and it was afterwards published with the report. That report, although generally sympathetic with the aims we had in view, stated that the Committee considered the matter which we wished it to consider was not within its reference. The question was, whether a company should be allowed to act in a certain way, and to carry on a business which, in the case of an individual, would require a personal qualification. As the draft Bill did not contain a paragraph dealing with the question which had so much interest for us, we had subsequent conferences with other professional bodies interested in the question, and there were several meetings of that Conference held on these premises, at some of which I was present. The information, as I have already hinted, which appeared in that Blue Book was given by the Society and was made use of subsequently by the other professional bodies with whom we were acting. I may also mention that there was a deputation to Mr. Ritchie, the President of the Board of Trade, in February, 1896—a deputation consisting of representatives of our own Society and representatives of medical and dental bodies as well. Mr. Ritchie received us at the time with a considerable amount of sympathy, but he also doubted whether any Companies Act could be amended in the direction which we thought desirable.

The Lord Chancellor's Bills.

Now, gentlemen, you all know that at present there are two Bills before the House of Lords which have been read for the first time, introduced by the Lord Chancellor. Speaking for myself, I have no complaint to make against our medical friends, because they are treated differently from ourselves. I do not think they wish it should be so, but it has appeared to the Lord Chancellor evidently that the conditions affecting medical and dental practice and those affecting our own practice are somewhat different. I am ready to believe that to a certain point there is a difference; but, speaking generally, I think we stand on all-fours, and I think that the Legislature, having declared in 1868 that it was for the safety of the public that persons keeping open shops for the sale and dispensing of certain poisons, and calling themselves pharmaceutical chemists or chemists and druggists, should be trained and educated and examined men, it is only reasonable to ask that the Legislature should as far as possible defend those men in carrying on their calling, in so far as it is not antagonistic to the public interest. I believe that the argument has been used that capital is not necessary for the profession of a medical man, or of a dentist, or possibly of a midwife. I am not prepared to say that any large amount of capital is necessary for the carrying on of the strictly professional duties of a pharmacist. Of course, I am quite willing to admit that the general business of a chemist throughout the country is of a very mixed nature; but we have no desire, and have no right at all, to ask that we shall have protection for the general business which we do. We consider we have some reason to ask for privileges in that portion of our business which deals with pharmacy proper.

I cannot help thinking that these companies which are formed—I am speaking now of the one-man companies, distinctly non-pharmaceutical companies — that they are naturally being formed to do as much dispensing as they can, and to carry on the general business of chemists and druggists. Well, there is no objection to their carrying on all the etcetera business of the chemist and druggist, but there is an objection to their forming themselves into companies to use the distinctive titles of pharmaceutical chemists and chemists and druggists, and so induce the public to come to them for dispensing as well as for the other articles which they are quite at liberty to sell as well as a qualified individual. I think that the line which has been taken by the Council in sending the suggestions to the Lord Chancellor, the suggestions which are referred to in the paragraph dealing with the companies question, was quite a wise one. We have taken the view that if a company of persons cannot be qualified, therefore a company should not be allowed to call itself chemists and druggists or to do what an unqualified person is not allowed to do. There is some principle in that at all events. It may be considered in some quarters to be not very practical, and I am bound to say, speaking for myself and not for the Council, that if the Lord Chancellor had seen his way to send some suggestions to us they would, at least by myself, and I feel sure also by my colleagues, have been considered very carefully indeed. If the Lord Chancellor had said "Gentlemen, I have sympathy with you in your aims, but there are certain reasons why I cannot draft a Bill exactly on the lines which you submit to me, but here are some suggestions from me which are for your consideration," I am sure that we should have considered them very carefully, and that something of a constructive nature might possibly have arisen from such a course of action. But, as you are all aware, the Lord Chancellor has not in any way approached us after the interview which I had with

him in the month of August last year, and in reply to the suggestions we sent to him he has introduced into the House of Lords two Bills side by side. If our Bill had appeared alone that would have been bad enough, but when we find it is read side by side for the first time with a Bill which deals in such a totally different way with other bodies, who are in very many respects in the same difficulties as ourselves, and who are carrying on professional duties very similar to those which we carry on, it is only natural that we should feel almost angry. I hope, gentlemen, you will do all you can to assist the Council in opposing the measure affecting pharmacy as it now stands before the House of Lords. I am sure we can rely on you—if it should come to the House of Commons—you will all help us to stop that Bill from further progress. I am myself inclined to think that those Bills will not go farther this session. Of course, that is only my opinion, and I do not think we shall be called upon either to squash, if I may use such an expression, or to stop our own Bill, or the Bill affecting the medical and dental professions.

Proceedings under the Pharmacy Acts.

The only other paragraph to which I would refer now is that which is headed "Legal." I have recently expressed a view that our prosecutions are in many cases very unsatisfactory, and it was suggested that I should perhaps give at a little more length my reasons for making such a statement. I have had a great deal to do with prosecutions during the last three years, and I must confess that the results of them are to me highly unsatisfactory. I find, owing to recent judicial decisions, that we have to prosecute the less offending person by having to take action against unqualified assistants who are in the employ sometimes of companies and sometimes of qualified persons, but in sole charge of branch shops. All this is very unsatisfactory to me, and I will just mention that although last year we did not lose one case, still there were several cases in which we obtained judgment and yet the result was very unsatisfactory, certainly from a financial point of view. Just let me give you one or two typical instances. Here is a case in which an unqualified assistant to a limited company sold a poison. We got judgment for penalty and costs, but nothing was received. I suppose the assistant had no money to pay. The next case I have before me was this: There were two youths in the service of a qualified man, and they sold poisons in the absence of their employers. We got judgment and costs and yet there was not a halfpenny paid. There was no money to get. Then there was a lady, the wife of a qualified manager of a branch shop; she sold poisons. We got judgment for two penalties and costs—nothing paid. Then there was one case with which I was dissatisfied; it was the case of a youth who sold laudanum in a beer bottle in a travelling van, and judgment was obtained for two penalties. We got nothing from the youth, who had only a small amount of pocket money and could not possibly pay the penalty, and his employer also declined to pay it. Gentlemen, all I can hope is that these persons against whom we have obtained judgment are no longer breaking the law. But how do we know they are not breaking the law? How do we know that they have not gone elsewhere, and are carrying on the same unlawful practices? I would appeal to all my friends throughout the country to assist the Council in every possible way to stop this practice of carrying on branch businesses and leaving them in the sole control of unqualified persons. As long as such a system continues we certainly cannot go to any other body and ask that body to assist us to prevent medicines being dispensed by unqualified persons in surgeries or establishments other than those of chemists and druggists. I have said this because I think it is very important that we should try and make our own house clean before we look at the uncleanliness of other people's houses; and I do hope that the words I have said with reference to this matter will induce some of our friends in the country to see that the business they conduct shall always be under the sole control in their absence of a duly qualified assistant.

Election of the New Council.

Well, gentlemen, I have detained you long enough with these discursive remarks, but I hope that the work which the Council of the Pharmaceutical Society has done during the past year will meet with your general approval. You are about to vote for a new Council, and you have an extended franchise, and we little know the result of the election which is now taking place; but the voice of the scrutineers will decide that point to-morrow. I hope, whoever is returned to the Council, that the Council will carry on the traditions of the Society, which I think have been, on the whole, for the advancement of the Society and the public welfare. I have now been for many years connected with the Council of the Pharmaceutical Society owing to the confidence you have shown in me. I have seen a good many new members of Council, and I have seen many men come on that Council who were going to set us all straight, and I am bound to say I have found that when once they have come on the Council and have known the work that has been done in committees and otherwise by the members of the Council, and the care that is taken at all times to preserve as far as possible the rights of members and uphold their interests, they came to the conclusion that the policy which had hitherto obtained was a wise one, and they saw that everything possible was being done to uphold the interests of the pharmaceutical calling, and they have, as a rule, fallen into line with those who had been on the Council a long time before them. They have come to the conclusion that the work carried on according to the traditions to which I have already alluded was for the interest of all those who belonged to the Society, and even of those who are not connected with the Society, but who are on the Register of Chemists and Druggists. I will now simply move the resolution.

The Vice-President formally seconded the resolution, saying that he reserved any remarks till later.

Mr. Mackenzie: As one who has never had any hesitation in stating what I thought was correct with regard to the reports submitted to the annual meetings, and who has always had great pleasure in attending these meetings, I may say that on this occasion I have great pleasure in supporting heartily the many reforms that are exhibited in this report. I think it augurs well for the future of that contest on which you have entered, that the friction which you have had in the contest is bringing out qualities which have been latent if they have been resident in the Pharmaceutical Council. I am glad also to see that the financial statement has now been submitted to a member of the Institute of Chartered Accountants, and then submitted to the auditors. This is a step essentially in the right direction. I presume also that the balance sheet has been put on the same lines. I hope it has. There are points in the balance sheet which some of us in the north do not quite understand as regards the terms on which the property is held. We do not quite understand it, but it looks as if you were attempting to ensure that the property shall not fall into the hands of the superior landlord at some future date, but continue the absolute property of this Society. I hope that is the right interpretation.

The Chairman: It is a redemption, Mr. Mackenzie; it means that at the end of the lease we get a certain sum of money, and we may or may not go on with this property, having it on a new lease.

Mr. Mackenzie: The system of property is so different in Scotland that we do not quite understand it. There once you pay your feu—you may pay a penny or twopence, or possibly £10 or £50, but as long as you pay that small amount it is yours. It is a remnant of the feudal system, a smaller remnant, fortunately, than you have in England. I come now to the question of the Pharmacopœia. That Pharmacopœia, I believe I am right in saying, is not quite what we expected, neither is it what it should be.

I was surprised very much to find that pharmacy proper—I speak of high-class pharmacy—is to a certain extent ignored, and I will tell you how. I hope that the Council, in connection with the Conferences they anticipate, will not lose sight of the fact that the present system plays into the hands of the lowest possible pharmacy in the country, and more especially of cheap jacks in stores, because they say in the lists they issue that the articles are made according to the British Pharmacopœia; and what more can the best pharmacist in the country say? Yet we all know how differently tincture of opium and hyoscyamus and other things can be made, and how much better they are made in one shop than another. Hence the medical profession have great interest in having these medicines properly prepared and in their best state, and I hope in future the Pharmacopœia will distinguish between any kind of thing and a special something that shall be expressed as being in the eyes of pharmacists of a quality that stands first in pharmacy and first as a therapeutic remedy. I think the wholesale druggists have had too much interest in this Pharmacopœia. We have a Pharmacopœia that is called Squire's 'Companion,' but I call this the wholesale réflection. With regard to the Medical Council, I am glad to think that we have Sir William Turner at the head of it now, and I expect great things from him, as I know that he is thorough in all he undertakes or superintends. I think also that we ought, in selecting our new Council, whoever they are, to impress upon them that they should endeavour to act more in regard to the requirements of the members generally than they have succeeded in doing hitherto. If you are imposing a large amount of restriction, and insisting upon chemists passing competent examinations, they ought to have something for it afterwards. If this is done, and these new members who are coming in are not coming in for nothing, I hope that the Council will be beforehand with them. I advocated many years ago, and I am still of the same opinion, that we should go to Parliament for a Bill, however small, which must contain a clause that all we are working for is for the benefit and safety of the public. If the Government says a medical man should be qualified to prescribe a right prescription, the man who dispenses it should also be qualified in every sense. If that was the clause—as I should like—we should be in the same position in pharmacy as we are in surgery, or in the profession of a physician, that no man shall have a pecuniary interest in the calling unless his name is on the Register, and that no man's name should be on the Register unless he is properly qualified. That is where our weak point has been all through, in getting a pecuniary interest out of pharmacy proper. If the Lord Chancellor could only look at it properly I think he would agree that our position is entirely on all fours with the other professions, if law business were undertaken by companies, and if the legal profession were to follow the same line, the Lord Chancellor would very soon find what he had at his back. In Scotland there is a very good principle, and I wish it applied to England. I wish to speak guardedly, but I think it is an excellent practice. When we have a case before the Court of Sessions, or the Judge, or Sheriff, it is competent for the counsel to say to the gentlemen on the Bench, "Are you connected with this company, are you interested in such a class of stores as is now before us?" In the Court of Sessions, I am sorry to say, we had a case not long ago where that had to be done, and it was found, I believe, that out of thirteen or fourteen judges on the Bench there was only one who could say he was entirely free from any connection with the stores, and could try the case, which he did, all the rest being set aside. What a nice thing it would be if all judges in England were in the same position! I think there is fairness in it. No judges can try a case in Scotland that they have any pecuniary interest in. Whether it is the law in England I do not know, but if it is, it is not put in force. Lastly, I have great pleasure in saying that as regards the new Pharmacopœia I think what has been done is a step in the right direction, and I hope, sir, it will be continued. It is a very great satisfaction to the members generally to know that their interests are now in the hands of gentlemen who will act resolutely, and who will bring up their advantages and make them co extensive with their restrictions.

Mr. Hyslop: I think, sir, that we should be unanimous in asserting that the question you have brought before us and so lucidly gone into this morning—the company question—is the great burning question of the time, and is likely to be, whatever minor matters may be brought before us in time to come. And, sir, I think it is very important indeed that in view of the fight which most likely we shall have to face on this question we should simplify our ideas and modes of expression, so as to be able to fight—I was going to say with cleaner weapons; anyhow, with brighter and with sharper swords. I thank you very much, sir, for the expression you made use of this morning—"pharmacy proper." I hope, sir, from the present time there will be an absolute death and burial of such vague and nonsensical expressions as trade pharmacy, professional pharmacy, high-class pharmacy, or other epithets alluding to pharmacy, and that we may be enabled to go forward straight, and speak of that which is pharmacy proper, and that which is pharmacy improper. It is clear, I think, that the Lord Chancellor has got into a muddle about this. It is said, and it has not been denied, that there is a branch of a high-class pharmacy within half a mile of me—a certain limited liability company—in which his Lordship has shares, and this branch establishment issues pamphlets, and is carried out in the most objectionable style that has ever been done in connection with the sale of physic ever since the dirty old man of Romeo and Juliet took off his smock and put on the modern varnish of outside refinement and decency. But, sir, there is a very serious side to this question—a more serious side than what I have touched on last, and that is serious enough for me. It seems to me that future history will speak of the decadence of the nineteenth century as the time when slavery, and corruption, and bribery assumed new guises, and attained their height in commercial and professional circles. I had the misery of being present on this sphere of action in the year that saw the blacks freed by the voting of twenty millions of money to English owners of slaves in Jamaica. Since that time it has appeared to me as if this money had been put out at compound interest on purpose to enslave and degrade, and bring into ignorance the masses of Britons themselves, who used to sing that Britons never, never, never would be slaves. I do not want to pursue this topic, politically, but only so far as it concerns our individual calling. What is more disgraceful, and what more subversive of British industry and the arts which have made Britain what it is (which caused an eminent Frenchman to say originally that we were a nation of shopkeepers, tradesmen, and artisans) than that rich men should have the power to put their money into one common stock, and carry on business that they know nothing at all about, as the head and the soul and the centre of a business of which they understand not one jot. It is certainly illogical and wrong, and dishonest all round, but anyhow, when we come to see that this vile system is ready to invade the practice of those arts which do good to all, rather than fill the pockets of all—the arts of surgery, medicine, and pharmacy; if we could bring our arguments, derived as they can be and must be from the practical side of things, before intelligent men and practical men of business, such as those who form the Houses of Parliament, surely we shall be able to make an impression upon them, and do some good for those who are coming after us. I think, sir, that the Council will be doing us an enormous service if it will maintain the lines laid down in the draft which it has had the honour of presenting to the Lord Chancellor, and be content with nothing short of that. The fact of it is that this Council, for the last fifty or sixty years has been working on continuous lines, as you have well put it, and those lines have been of such a beneficent nature that they tend now, when most needed, to place pharmacy proper on an assured and proper foundation, and it will be found before long that not only is pharmacy proper a part of the great domain of medicine, but that it is becoming more and more in every year essentially a distinct branch of study as the pioneer and also the rear-guard of that important living branch of knowledge. Speaking of the multitude around us that we have to deal with, and putting the classes for the present out of the question, so far as the multitude are concerned chemists and pharmacists proper will attain more and more in the future the position which has been aimed at in years past, the people to whom the multitude comes to consult about the beginning of their ailments, and in this way it clears the way for the doctor and the medical profession. Pharmacy is becoming so complex in the present day, as well as those accretions of trade which have been growing and have tried to tighten on to it and to throttle it, that we must bring home to the Lord Chancellor and to those concerned in the Legislature the fact that the chemist—the pharmacist proper—in pursuance of his own proper business is a man who for the benefit of the public at large turns away in a day very often as much custom as he gets; he does not ask any favours, but he claims that, Parliament having put him in this position, and having given him these onerous

duties to perform, he should be like other caterers for the benefit of humanity, and should have corresponding privileges secured to him by the Legislature.

Mr. Barrett: I am not going to say for one moment that I echo the wishes or believe in the same things that Mr. Hyslop does. On the contrary, I believe that his views are certainly, as far as present day pharmacy is concerned, something antediluvian. Pure pharmacy is certainly known in London, but it is known as a rule to but one shop in every town in England. Pure pharmacy does not maintain one fiftieth part of the chemists of this country, and as a Society we have to cater and to adjudicate upon the living that is to be made by those that we pass through our examinations, and pass off into the world. If the Pharmaceutical Society and Council can, through pure pharmacy, give to all that it passes through its examinations year by year a living such as every chemist is entitled through his education and his training to expect, then I say by all means let us adhere to pure pharmacy and pure pharmacy only. I am not altogether on all-fours with the President of the Council, or with the Council itself. I believe that occasionally it is better that we should discuss and put the other side of the question to the Council rather than we should come up and say, "Well done, good and faithful servants! we will pat you on the back. Go on and do likewise for the future." My connection with the Society is not very long, certainly not much more than a quarter of a century; but I think about a quarter of a century ago the examiners were pleased on these premises to give me my pharmaceutical degree. During the whole of my career in pharmacy, at any rate, I have noticed one fact, and that is, that the Pharmaceutical Society as a Society have played up to the professional side, and they have played up to the medical men of the country, and, more particularly, the medical men of London. Now, gentlemen, they admit that we are on all-fours with them as far as education is concerned. What do we find at the present moment? That although they have gone on those lines from my point of view we are to-day even by the President's own words, counted absolutely a failure. Why? Because we are in Parliament at the present time with a Bill which the Medical Council does not do anything whatever to assist us in as far as I can see. The whole consideration of the Dental Council is for themselves. That is my idea, but I think the Pharmaceutical Council has made mistakes in times gone by, and to a great extent I admit during the last few years it has partially corrected that fault. When I say partially corrected that fault I am going to refer to a line which I see in the paragraph headed "Parliamentary." "The loyal support and prompt action of the local officers and members of the Society constituted a gratifying feature of the session." So far so good. Now we had recently as local secretaries a circular sent to us, which was the first, I believe, I have received since I have been a local secretary. At the present moment the Council do not think it desirable that they should appeal to the officers throughout the country for the assistance they might be ablo to give in connection with interviewing their local members of Parliament or otherwise. The Council may know more about the question, because they have more of the details before them than I have, but certainly, from an outsider's point of view, I think it is a grievous mistake. The Lord Chancellor can himself be influenced by members of the Cabinet resident in the district of Birmingham, and probably chemists in the country can interview their members of Parliament and get our case thoroughly put before them. I demand again, as I did last year, that the Council should be in more intimate touch with the local secretaries; that they should place before the local secretaries every single thing that they are striving for; that they should not have simply the report of the Council's meetings to read, but they should know something of what takes place at the Committee meetings, and that they should then bring pressure to bear upon their members of Parliament for the benefit of the profession throughout the country. I am going to advocate this improvement, and I trust the Society will see their way to consider it. We cannot live only by pure pharmacy, sometimes we have to develop a trade, and the trade as well as the professional side must be looked after, and I do enforce upon the Society that they will consider the trade element a little more than they have done in times gone by.

Mr. Campkin: I confess I did receive with an amount of surprise from the secretary of our local association the circular the last speaker, Mr. Barrett, has alluded to, and I think, sir, if ever there was a case in which the co-operation of tho whole of the chemists throughout the kingdom was necessary it was in connection with the Bill which had just been presented to the House of Lords. I will take this meeting back to the action that was taken by the chemists throughout the country with regard to the Medical Acts Amendment Bill some years ago. It was my privilege to wait upon the late Professor Fawcett in the interests of our local association. He at once, after hearing the case, took train to London, and at 7 o'clock that evening that Bill was withdrawn. I say that it was influentially placed by being in such hands, but I do say that the action of the chemists throughout the whole of the country brought such an influence to bear upon their local members that it was impossible to proceed with that Bill. The same would be the fate of any unjust Bill, such as this one, when it reached the House of Commons. We have no influence undoubtedly upon the House of Lords. We have very little influence upon those members of the House of Commons who are company promoters and who live by the profits of over-capitalised companies, but we have as constituents very considerable influence in our respective spheres upon our local members whether they agree with us politically or otherwise. I was very glad to hear, sir, for the first time in this room, though it may have been uttered on many occasions, your remark as to the value of unity that you had discovered during the past year. There is no doubt in these democratic days there is a very great value in unity, and even if the Association only number something like 15,000, as the chemists generally would, it would have a very considerable effect upon the Legislature with regard to any measures they may bring forward, whether in our interests or opposed to it. We feel that, as a Council, you are doing the best you can, because we have had an opportunity of judging that from the utterances of many of you during the past few months. You are doing the best you can with regard to legislation on our behalf, and more particularly with regard to this unjust Bill, but at the same time I think you would find very great assistance from your local secretaries or your local associations, and therefore any efforts in that direction should be encouraged rather than otherwise. I propose to leave that subject, sir, because you have so fully gone into it, and I feel that you have spoken the feelings, to a very large extent, of the chemists throughout the country. With regard to the prosecutions as to the sale of poisons by unqualified persons we have some experience and some interest in them, and I believe some of us are disappointed to find the results have been so disheartening as you suggested, but that shows the necessity for some litigation in that direction, and although you and the Council of the Society have failed to gain all you could have wished, you have set a good example in initiating those prosecutions, and your representatives will assist you to obtain that justice which is demanded by the qualified persons in this country in the sale of poisons, and the public generally, by the publicity given to these proceedings, will fall into line in due course for their own protection if not for our assistance. I hope, sir, you will not be discouraged from further action by the fact that you have not recovered the amounts of the penalties, because it is not a financial matter—it is a moral question. I hope, at all events, the action which has been taken by yourselves will be followed by the chemists throughout the country, and will be such as to bring about the withdrawal of the Bill before the House of Lords; and I feel sure we can give it a very warm reception when it comes to the lower House, and we shall insist upon its withdrawal.

Mr. Lomas; I should just like to say a few words. The first point that I shall touch upon in the address deals with the President's remarks about the power that chemists in the country have in assisting this Society. When they become members they should act in accord, and union is strength, and they should bear that in mind. I hope the chemists and druggtsts will read those words that fell from the President when he said that they should all pull one way, and that is what I wish to emphasise. Then, with regard to what fell from the President with reference to the enemies in our own midst—I mean by them members of the Society, qualified men carrying on branch shops by unqualified dispensers or managers. It seems to me that the President and Council of the Society have a remedy in their own hands for that. I think that a circular or notice should be sent to every qualified chemist stating that if they employ unqualified assistants in branch shops they will be considered guilty of infamous conduct, and their names will be removed from the list of members. You have the solution there of the difficulty—make use of it; or if you cannot do that, then what I say is, call upon everyone when passing their examination to sign a document that they shall not engage in any

such practice. It seems to me you are a little behindhand. There is one other remark, and that is the Chelsea Physic Garden. I think it has satisfied us that one or more members of the Society should be on that Committee, and I should like to know if the President can favour us with the time that we may look forward to when this garden will be opened to us.

Mr. Jackson: There is one question I should like to ask. It has been frequently said the Widows' Clause is the cause of all this trouble with the companies; that they get through on that ground. Would it not be possible to have an amendment to our own Bill cutting out the Widows' Clause entirely? They would not have the same ground that they have had and that the judges ruled they had for working in company form. As long as the Widows' Clause exists, we cannot stop it, they say. When that Widows' Clause was inserted some twenty or thirty years ago, it was put in with the idea of benefiting unfortunate widows; but it would not benefit many widows now. Supposing I died to-morrow, I should not wish my widow to have the management of the business under a manager, it would very soon be frittered away, what little there was; and, therefore, if it could be taken out of our Bill in some way, I think it would cut away a good deal of the ground upon which the companies work.

Mr. Glyn-Jones said before the question was put, he should like to ask the President whether the resolution of which he had given notice would be in order, because he had been at some meetings where resolutions had appeared on the paper, and the mover had been told that they were out of order. If that was going to be the case, he should like to say what he had to say on the subject before the report was put.

The President said he should have to rule that the resolution which had been sent in by Mr. Glyn-Jones, as it stood, was *ultra vires*; it was argumentative in character, and dealt with the acts of another public body, which it was not open to that Society to criticise. At the same time he should be very glad to hear the very important matter with which the resolution dealt discussed by Mr. Glyn-Jones or any other speaker. The latter part of the resolution would not be out of order, and a modified resolution to that purport might be moved. The President continued: As there still remains this interesting subject for discussion it may be well for me now to reply to one or two of the remarks made by the speakers, but I think, on the whole, those remarks have not been very scathing, and I may take it, from their general tenor, that you will adopt the resolution I have had the honour to move. The question of sending more frequent letters to local secretaries and taking them more thoroughly into our confidence, has been mentioned by Mr. Barrett and Mr. Campkin, especially with regard to the Bill now before the House of Lords. I think you will all agree with me that it is a matter of opinion whether it would be wise for us to move at the present juncture or not. The Council take one view and Mr. Barrett and Mr. Campkin probably take the other view, but we came distinctly to the opinion that it was unwise at that juncture for our friends throughout the country to approach directly or indirectly in their public capacity, and as local organisations, members of the House of Lords. I cannot give you all the reasons which actuated us, but there is one which I may mention. We think it is inadvisable to be continually approaching public men and wearying them; so far as I can see at the present moment, I think that action of the Council was a wise one. As I said before, there was apparently no movement of progress with respect to those Bills, and if they do not go any further during this session I think that will prove the Council did wisely in not stirring up feeling throughout the country when it was quite unnecessary. I am quite certain that if the Bill does come to the House of Commons we shall ask our friends to use that influence which they used to such great advantage with reference to our own Bill last year and with reference to the Poisonous Substances Bill previously; then as Mr. Campkin says, we shall use it to such good purpose that we shall get the Bill withdrawn. As far as I am concerned I am only desirous to receive all the support that is possible from the local secretaries. I have on more than one occasion given utterance to the view that we owe very much to our local secretaries, but I cannot agree with the remarks made by Mr. Barrett that there is any desire on the part of the Council to play into the hands more or less of the London physicians. I do not understand that at all. There are at present fourteen out of the twenty-one members of Council who are resident in the country. Surely, therefore, the country is amply represented from that point of view. There is no division on the Council between country and London members. We all wish to represent to the best of our abilities the members who are good enough to record their votes for us, whether they live in the country or in town, whether they live in Scotland, Wales, or England. Mr. Barrett may not agree, as many of you, of course, do not agree with this or that which has been done by the Council in times past; but still I think on the whole that the Council has tried to represent the views of all the members throughout the country generally. Mr. Jackson has asked a question with reference to the Widows' Clause. That is a very ticklish subject, and one which has been dealt with. I have never been very strong about the Widows' Clause, but if you wish to see the views that I hold, as being the most practical views in my opinion, you will see them in the suggestions that have recently been sent to the Lord Chancellor. It is something of a compromise. You would not make it compulsory for a chemist's business to be sold the day after his death, and it is absolutely impracticable to do so. The large majority of registered persons do feel that it is unnecessary, and often unwise, in the interests of widows and others that the business should be carried to an unlimited length of time after the decease of a qualified person. Therefore, we have suggested that there should be a reasonable time allowed for the representatives of a qualified person to wind up his affairs, and to give a reasonable time to those who benefit financially by his death to put the house in order and to sell the business to a qualified person. Although I admit that it is more or less giving way, as it were, to the principle that an unqualified person or persons can carry on business with a qualified manager, still, it is only for a definite time and under exceptional circumstances. That is a very different thing in principle from six or seven unqualified persons who know nothing whatever of pharmacy combining together and making a financial arrangement to carry on the business of a chemist and druggist for all time, or at least as long as there is any money to spend, or they have any credit to back them up. With regard to the Chelsea Physic Garden, I think that is more or less open to the public, but no doubt Mr. Carteighe will be able to answer that question. With regard to the expulsion of members for infamous conduct, that is a very difficult subject to discuss. Of course, we have no power to impose any conditions on those who have passed our examinations, to say that they may not do this, that, or the other. I do not care, I confess, to suggest that we should write letters to every registered person throughout the country, telling them what kind of business they should carry on, unless we have some power behind us which would enable us to punish them in some way if they do not carry out the views which we think are desirable, and about which we have written. I do not think there is anything else to which I need specially refer, but I shall be glad to be reminded if I have omitted to answer anything.

Mr. Carteighe: The Chelsea Physic Garden does not belong to anybody at present; that is why it is closed. We, the new trustees, are about to make it ready. It is a change of ownership, in fact. It is closed for alterations and repairs.

The motion was then put and carried unanimously.

The Employment of Unqualified Dispensers.

The President said the next business was the motion, of which notice had been given by Mr. Glyn-Jones.

Some discussion ensued as to the form in which the motion might be put before the meeting, Mr. Glyn-Jones declining simply to make a speech without moving a resolution, as the President invited him to do. After some remarks by Mr. Carteighe and Mr. Atkins, and others, Mr. Glyn-Jones submitted a resolution in the following terms:—

> That the Council of the Pharmaceutical Society be respectfully requested to invite the co-operation of the General Medical Council to secure that medicine shall only be dispensed by those holding a medical or pharmaceutical qualification.

The President said: I have no objection to that, but I am bound to say I still think Mr. Glyn-Jones is technically out of order, because he has given notice of a motion which the Council has, through me, said to be *ultra vires*, and out of order, and I have so ruled, and I cannot see how, according to the Bye-laws, Section 20, "That the Council shall meet previously to the annual general meeting to arrange the business to be transacted thereat," we can, at that meeting, make arrangements for motions which may afterwards be sprung upon us. But, in spite of that, I think I shall be acting in accord with the general desire of my colleagues and

the members assembled here to-day if I allow this resolution, of which notice in its present form has not been given, to be put by Mr. Glyn-Jones. But I do hope that whatever is said will be said with some reserve, bearing in mind the very delicate matters at issue. Still, as I believe that several gentlemen would like to speak on the subject, and thus give them an opportunity, I will rule that this is in order.

Mr. GLYN-JONES: Mr. President, I am delighted by your clemency in allowing that resolution to go through. Before saying anything about it, may I throw out the suggestion that a good deal of time at these annual meetings would be spared if, when a member gives notice of motion, the President and the Council of the Society would come to as early a decision as possible, as to whether that resolution is in order or not, and communicate with the man who is going to move it? I hope the meeting will see that I am not entirely responsible for the time which has been spent over this matter. I submitted the resolution and it was not until I came to the meeting that any objection was taken.

The PRESIDENT: May I say a word upon that? If Mr. Glyn-Jones, or any other member, would be good enough to send notice of a proposed resolution to the President or the Secretary alone, that action would be taken, and it is the action which I intended to take when I first saw Mr. Glyn Jones' resolution; but the next morning I found that there was notice of that resolution given not only in our own official Journal but in other trade organs. What was I to do? If Mr. Jones had given me, as President, in the absence of the Council in various parts of the country, an opportunity of saying whether I thought the resolution would be in order, I should have been delighted, and it would have saved the time of the meeting.

Mr. GLYN-JONES: Mr. President and gentlemen, I will take up just a minute of your time in referring to the immediate history of this question. In October last, a meeting took place of a body —I must not mention their names I suppose—at which a very courteous letter was read from the President, excusing his absence and telling the gentlemen present that he and the Council would always be glad to hear from them. The majority of those present were members of the Society, and they sent a resolution to the Council worded respectfully that the attention of the Pharmaceutical Society be respectfully drawn to the practice of dispensing medicine by unqualified persons in doctors' surgeries, and that the Council be urged to take every possible step to minimise the evil. From the report of the Council meeting it appeared that the President said that resolution should be referred to the Committee, but it seemed to be a matter which could not be dealt with. There was some uncertainty as to what was meant, but I may notice in passing that one member of the Council rather went out of his way to say that young men who joined a union and passed resolutions should satisfy themselves that they knew what they were talking about, or something to that effect. Now I do submit respectfully to the consideration of the gentleman who made that remark that the interest taken by members of the Society in its affairs is small enough at present, and when any body, especially of young men, begin to show they take some interest in it it would have been well not to snub them, and if it is necessary to snub them it should be done as nicely as possible. but I happen to know that some of these gentlemen, members of the Society, felt that they were not at all well treated in the matter. In January there was held an inquest in which it appeared that a patient had died from medicine made up by an unqualified medical assistant. Fifty grains of morphine were placed, according to the dispenser, in a mortar with 8 drops of prussic acid mixed up with some gum acacia, and an 8 ounce bottle made up and sent out labelled "one-eighth part to be taken as directed." A certain amount of publicity was given by means of this inquest, and I do think it will be well if a matter of that kind was carefully watched by this Society. I think it would have been an advantage if somebody representing the Society had been present at the adjourned inquest, for surely the Pharmaceutical Society is a body which has a right to be heard in the matter. Something has been said about criticism. I hope nobody will think that because a man does not see eye to eye with the Council that, therefore, he is a traitor to the craft or to the Society. I do submit that a man has a right to his opinion, and that he is not honest if he does not at any rate express it when the time comes to do so. Another matter which I may mention, by the way, is that a number of local associations, through the action that was taken wrote to the Pharmaceutical Society, I myself wrote in January a letter stating that I had called the attention of the Privy Council to this matter. Of course, I must here apologise for taking such a step apart from the Council, but my reason for doing so was that we do not get an inquest on a dispensing accident every month, but the Council of the Society did not meet for some month after the inquest, and I thought it was necessary that publication should be given, for that was the thing I most wanted, and therefore I thought some action should be taken at once. I am certain that the President is in no way responsible for what seems to me to be a little discourtesy, namely, that apart from what I have seen in the Journal I do not know that that letter has ever been received. I did read in the Journal that it had been received and referred to a Committee, but apart from that I had no communication, and perhaps I had no right to expect it, although one usually does; but whether it was discourtesy or not, I am quite certain the President himself is in no way responsible for it. The Council referred that to a Committee in February and what have we heard of it since? Not one word. I looked at the reports very carefully, expecting to find some reference to it, but not a word do we find. You must remember that during that time the Privy Council took a certain amount of notice of the question. They did what I quite thought they would; they communicated with the General Medical Council. I do not know of a time when the matter has been officially brought before the Medical Council from the Government in that way, and I do think we have a right to expect that some action should be taken by the Pharmaceutical Society when that kind of negotiation was going on. If it is not a matter for the Pharmaceutical Society who is it a matter for? It seems to me that we are touching here the reason why the resolution was only allowed on sufferance, and that the Council feel it a very delicate question. I admit it, but it is practically the most serious question for 80 or 90 per cent. of your members and the trade generally. The members of the Council and others who have taken a prominent part in the administration of the Society, and in the majority of cases are in the happy position of having a dispensing business, they have not felt what some of us do, that you are training men to the practice of pharmacy, qualifying them and turning them out—what to do? To practise the profession of pharmacy? No, to become mere traders, because they have no pharmacy to do. And why have they not? First of all, one should define pharmacy perhaps, and we have had a new term introduced to-day, "pharmacy proper." All I have to say is that if 90 per cent. of your members had to depend for their livelihood upon pharmacy proper they would close their shops to-morrow. We have no pharmacy proper, if that means dispensing, and apparently nobody knows what pharmacy is. Last night we had the President of the Royal College of Physicians speaking with reference to pharmacy. The first thing that seemed to strike him was that it was very necessary to compliment us or to chaff us about a tableful of samples of delicacies and medicines in a portable form which he and other gentlemen had sent to them. That seemed to be what was conveyed to his mind by the term "pharmacy," and that was the line he took. Another speaker said science had taken great steps. We were able now to take medicine without knowing it. My definition of pharmacy is dispensing medical prescriptions, and, as such, pharmacy is not in the hands of pharmacists, but in the hands of the medical profession. What happens is this. Your members have been trained and educated to practise the profession of pharmacy; they are turned out to fall back on commercial pursuits. The time has come when we must get out of this fool's paradise, and we must know where we are. Are we going to have the dispensing of the country to do, or are we not? If not, why on earth should you ask us year by year to subscribe our guineas and become members of a Society to foster education in pharmacy? Let the other bodies of men who are to have the practice of pharmacy do that work. Why should we educate men for the practice of pharmacy if pharmacy is to be conducted by men without any sort of qualification? I know it is a delicate question, but I am convinced of this, that it is essential that we should sooner or later, and the sooner the better, know exactly where we are in the matter. It is all very well to have platitudes talked at dinners, and to have medical men tell us that pharmacy is the handmaid of medicine. It appears to me the handmaid has very little work to do and very little pay. The reason why we should know is, that the existence of the Society altogether depends on some answer being given sooner or later. What is the Society for? For the purpose of training pharmacists, and I say you cannot expect men to support you in training

pharmacists, unless when the men are trained they are to get pharmacy to do. I had jotted down some remarks in reference to my former resolution, which the President has ruled out of order, but I suppose I am in order in stating the action which I understand has been taken, when the Government had communicated with the General Medical Council, and what was the reply that that body made? First of all, that they considered these accidents were rare. A question was afterwards put as to how they considered that, and what means had they of knowing that these accidents were rare; and the reply to that by the Government is that the infrequency with which accidents are reported to them leads them to the conclusion that the General Medical Council was right in saying that they are rare. I am glad to say that Major Rasch has consented to a still further question, and to ask whether any provision has been made by which accidents, when they do happen, are reported to the Privy Council, and, if so, who reports them, and whether they will tell us the number of such accidents which have taken place during the last two years. I can excuse the Government, but I am still an irresponsible member of this Society, and with all due thanks to the gentlemen who try to buoy me up until to-morrow, I will not refrain from expressing my opinion of the action which the General Medical Council have taken with regard to this matter. They say that accidents are rare, but I think we shall be able to prove they do not know whether they are or not. I have yet to learn that medical men have a much higher strain of human nature than the rest of us, and that they would be prepared to become their own informants and ruin their practice when an accident does happen. I say it is too great a strain to place on any man's integrity to expect him to become an informant and ruin his practice, and ruin his assistant, and lay himself open to a claim for damages when an accident happens in his own surgery. Then they say, besides, the responsibility of the practitioner for the acts of his servant is the best possible safeguard; why did they not say that about the unqualified man when they wanted to stop the doctors employing unqualified medical assistants. They did not then say that it does not matter, the doctor himself is responsible, and therefore if his unqualified assistant makes a mistake the man injured can come down on the doctor. They have no more right to say that with regard to unqualified dispensers. Major Rasch informed me that a member seeing the notice of his question told him he was interested in it because, he said, I was once nearly poisoned by arsenic by a dispenser, and he said I am surprised to find in the course of the answer given by the Government that the only consolation I have is that my executors may come down on the doctor. That is all that the General Medical Council tell the Government, that the public are sufficiently protected because the medical man is responsible for the acts of his assistants. I say that is illogical, and if it were accepted it means that the Government has no right to ask that the man who navigates a ship should hold a master's certificate if the shipowners are responsible for the acts of their servant, and therefore if he drowns people they can compensate the relatives. It is the duty of the Government—a duty recognised in everything else—not so much to rectify mistakes when made as to see that such mistakes shall not be made, by stipulating that no one shall dispense medicine who does not hold a qualification, either medical or pharmaceutical. I know, too, that I shall be told that we shall upset medical men, and it is a very dangerous thing. I am speaking for a very large section of your members when I say that the gentlemen Sir Crichton Browne referred to, the lean members of the medical profession, are amongst our worst and greatest opponents. In a great many districts your members have nothing in the world to thank the lean members of the medical profession for; they not only do their dispensing, but they are prepared to supply a man with a truss, even if they do not keep an open shop. They are prepared to take our work from us, and I am prepared to prove what I say by referring to a case in Scotland, Bremridge *v.* Tomlinson, where you prosecuted Tomlinson, a young man of 16½ years of age, who was an assistant of a doctor who kept an open shop in Glasgow. You sent a prescription into the shop; it was made up by this boy; it contained prussic acid, chloroform, and morphine. You prosecuted, and that boy did not defend the case, but a society of medical men in Scotland came forward to assert their right to employ boys of that age to dispense chloroform if they thought fit. I say that so long as you have that to contend with, it is all nonsense to talk about alienating the medical profession. I believe the leaders of the medical profession will be with us; surely they do not say that a qualification for a man to dispense poison is not necessary, and I have never yet spoken to a medical man of any standing whatever, whether dispensing or not, who did not say that he wished heartily they had no dispensing to do. They are forced into it by the competition of their fellows. We know that it would be impossible to work a lot of these cheap dispensaries that are doing us so much harm if they had to employ qualified men. I have referred to that Scotch case, and I should like to quote, because it is very important, the opinion of the Lord Justice Clerk, who tried it. (Mr. Glyn-Jones then read the passage from the judgment.) Although that refers to "open shop," still the remark applies quite as much to a closed surgery. A doctor is out on his round, and he leaves his dispensing to be done by an unqualified man. No doubt there will be many objections; I have heard some. It is said we are in a tremendous crisis. One man says, "For goodness' sake do not raise this question now." Well, I have not found this crisis, gentlemen, and if it is so, there has been a crisis as long as I have known anything about pharmacy. Much as I desire to assist in attempting to wreck the Lord Chancellor's Bill, I have really not been the least bit frightened, because if it goes through I do not know that it is going to do much more against us than we have already to put up with. It seems to me the Society is unable to deal with this matter at present, and whilst I am very much against recognising companies, still I do not think any sort of idea, even if it should exist, about interfering with the crisis, ought to prevent us dealing with such an important question as this, and dealing with it at this juncture. You have a case, a typical case, which has come before the public. I have already given reasons why you will not get many of these cases coming before the public. The Government have to some extent had their attention drawn to the matter, and their attention will be kept on being drawn to it. The General Medical Council (and this is perhaps the most important point) are pledged to the Privy Council to consider this matter at their next meeting, which takes place at the end of May. I therefore say it is of the greatest importance that this meeting should express an opinion on the subject—an opinion that men who dispense poisons, either in a dispensary, a chemist's shop, or a surgery, or anywhere else, should be men who have shown their fitness to do it by holding a medical or pharmaceutical qualification.

Mr. Griffiths (Cirencester): I have much pleasure in seconding the resolution which has been moved by Mr. Jones. I feel great sympathy with him in what he has said. Many, like myself, who carry on business in agricultural districts will know how little they get of pharmacy proper to do. I am quite sure that my Major qualification does not get nearly the exercise that it should do. I think this is a question which is quite as important to be taken up by the Council of the Pharmaceutical Society as the action that was being taken with regard to company trading, because the two are really branches of the same subject—the practice of pharmacy by unqualified men. I do not think the bugbear about our upsetting the medical men is so very great. For my own part I think the great majority of medical men will be only too glad to co-operate with us in bringing about a better understanding. I am quite sure of this, that if the pharmacists get the dispensing to do they will then be able to remove one of the great causes of ill-feeling between the medical profession and pharmacists, namely, the practice of prescribing by chemists. I think these two subjects fall into line very much, and that we cannot do better than pass the resolution. While agreeing with Mr. Jones with regard to the crisis, I say if there was a crisis, that was just the time to get the subject discussed. If we worked on this principle we should not upset the medical men, but we should improve pharmacy. We are bound to go in for trade, but if we had the practice of pharmacy properly placed in our own hands I am sure many of us would only be too glad to relinquish some of the business branches and employ our whole time in our proper profession.

Mr. Barrett: In my opinion this is a question that is being laboured far too much. Taking into consideration the remarks that have already fallen from the President as regards the desirability of all dispensers being qualified, and more particularly the position the Society has been placed in during the past year as regards prosecuting unqualified people, I do say it is desirable that we should do all we possibly can do to purge the stables of the medical men, but the medical men might very readily turn round on the chemists and say "Yes, it is quite true you ask us to provide qualified men to do our dispensing, but we ask you to do

the same." It is not at all an unusual thing to find an apprentice during his fourth year doing the dispensing, and very often to find it being done by unqualified assistants. It is not often the case in Leamington, but even there it was sometimes found; therefore, in his opinion, they ought first of all to purge their own stables, but nevertheless they could not allow the position that had been taken up in Parliament on this question. No doubt many of the members might have read *Truth* recently, although perhaps they did not altogether agree with that paper's politics, but, if they had read it, he would ask whether it did not make a very strong case on this particular answer that had been given. I say it is a question of very great moment, and that we should do everything we possibly can to see that not only chemists keep qualified men for the purpose of dispensing poisons, but that medical men should do the same thing.

Mr. Butt: I have very great sympathy with most that we have heard on this question, but it seems to me to be a question that could not very well be discussed at a meeting like this. I shall therefore move as an amendment—

> That the whole question of the dispensing of medicines by unqualified persons be referred to the Council.

Mr. Arkinstall: Is there any distinction between the original proposition and the amendment?

The President: There is sufficient distinction to constitute it a proper amendment. The resolution requests the Council to take certain steps, that is to say, to co-operate with the General Medical Council. The amendment leaves the whole question entirely in the hands of the Council, and it may or may not co-operate with the Medical Council under that amendment, as it thinks fit and proper.

Mr. Mackenzie (Edinburgh): One is conditional and the other not.

Mr. Glyn-Jones: Mr. Barrett, of Leamington, has said that he agreed we ought to get the medical men to employ qualified men, but he also suggested that our hands were not quite clean Two wrongs do not make a right to start with, and if we are employing unqualified assistants to dispense poisons, we are not acting rightly. But why is it that so many unqualified men are kept to dispense poisons? Simply because there is not enough dispensing to keep a qualified man. If the chemists did all the dispensing there would be no difficulty in their employing properly qualified chemists to do it. Before you vote for the amendment I ask you not to leave it unconditionally to the Council, for this reason, that, especially during the last eight months, the Council has shown no desire whatever to touch the question. If they have been dealing with it it is not our fault that we do not know of it. I maintain that it is straining our loyalty a little bit too far to ask us to shut our eyes, open our mouths, pay our guineas, and see what the Council is going to do for us. I say this meeting is competent to express an opinion, and tell the Council what it thinks it ought to do. If you vote for the amendment you will be admitting that you do not know enough about the subject to pass an opinion on it. I submit that we here present are competent to pass an opinion, and therefore I ask you to vote against the amendment.

The President: The question now before us is whether you agree to this amendment or not. I think Mr. Glyn-Jones' remarks will be read with very great interest by those who have not been present here to-day. I think, if I may be allowed to say so, that Mr. Glyn-Jones' object will be largely realised by the fact that those remarks have been made, and that they will be published. I do see some difference between the resolution and the amendment, and I think Mr. Glyn-Jones has already admitted, in some remarks that he made with reference to a case in Scotland, that the Council does occasionally take cognisance of such matters. I maintain that your greatest wisdom is to leave this very delicate matter in the hands of your Council. They are glad to know the opinion of the members, which has been expressed from time to time at meetings of local associations, and through the members, and they are, no doubt, more or less influenced by the views so expressed, but I maintain that it is to your interest, in spite of what Mr. Glyn-Jones has said, to leave this particular matter in the hands of those whom you are sending to represent you on the Council of the Pharmaceutical Society. Without any further remarks on that point I shall ask you, as a question of confidence in the wisdom of your Council, to vote for the amendment.

Mr. Glyn-Jones: My resolution is in no sense a vote of censure on the Council.

The President: I think I said confidence.

The amendment was then put to the meeting, when 56 voted for it, and 48 against.

The amendment was declared carried, and was then put as a substantive motion and carried.

Appointment of Scrutineers.

The President then read a list of names of gentlemen who had been nominated to act as Scrutineers, and their appointment was unanimously agreed to.

Appointment of Auditors.

The following gentlemen were appointed to act as Auditors:—

Butt, Edward Northway, 77, Hamilton Terrace, London, N.W.
Lescher, Frank Harwood, 60, Bartholomew Close, London, E.C.
Stacey, Samuel Lloyd, 22, Great St. Helens, London, E.C.
Umney, Charles, 50, Southwark Street, London, S.E.
Yates, Francis, 101, Southwark Street, London, S.E.

The President then called attention to the fact that the following registers had been laid upon the table in compliance with the provisions of the Act:—

Register of Members and Student-Associates of the Society.
Register of Pharmaceutical Chemists.
Register of Apprentices and Students under the Act of 1852.
Register of Chemists and Druggists under the Act of 1868.

The President: Gentlemen, I have now to move that the meeting adjourn until three o'clock to-morrow to receive the Report of the Scrutineers.

Mr. Atkins: Before we separate I beg to propose "That the very best thanks of this meeting be given to the Chairman, the President of our Society." All who know our President will know that he is a man of the extremest conscientiousness, of the utmost fairness and absolute impartiality. I have learnt to intensely respect and to admire my friend the President. I am proud of him. He has had the most difficult part to play, and he has exhibited the utmost good humour and absolute fairness.

Mr. Barrett seconded the resolution, which passed with acclamation.

The President: Mr. Atkins and gentlemen, I am very much obliged to you for the very kind way in which you have received this vote of thanks. I must not take all the credit to myself, but must claim some for my colleagues on the Council. I am free to admit that these annual meetings have been at times a matter of great anxiety for me. I feel that if I were to be called upon to preside at meetings of this character once a week I should in time become a very strong Chairman. I hope, as Mr. Atkins has said, that I have been fair, for I have tried to be so. I thank you for this mark of your confidence at this—my third and last—appearance in the chair.

MEETING OF THE COUNCIL.

WEDNESDAY, MAY 17, 1899.

Present:

Mr Walter Hills, President.
Mr. G. T. W. Newsholme, Vice-President.

Messrs. Allen, Atkins, Bateson, Bottle, Corder, Cross, Harrington, Harrison, Martindale, Park, Savory, Southall, Symes, Warren, and Young.

Several members and student-associates who had paid their subscriptions since April 30, were restored to their respective positions.

The Council having arranged the order of business at the annual meeting, adjourned.

SELECTED PRACTICAL FORMULÆ.

Balsamum Nucistæ.

Yellow wax, 1; olive oil, 2; concrete oil of nutmeg, 6. Melt on the water bath, strain, and pour into capsules.—*Deutsch. Am. Apoth. Ztg.*, 19, 157.

Raspberry Lemonade Syrup.

Fresh raspberry juice, 5 litres; fresh cherry juice, 5 litres: sugar, 1 kilo. The fruit juices, after fermentation, are boiled with the sugar, the scum removed, and citric acid, 20 Gm., added dissolved in a little water.—*Pharm. Ztg.*, after *Kol. W. Ztg.*

PHARMACEUTICAL SOCIETY.

ADJOURNED GENERAL MEETING.

Mr. Walter Hills, President, in the Chair.

The adjourned meeting for receiving the report of the Scrutineers was held on Thursday, May 18.

The Chairman of the Scrutineers, Mr. E. N. Butt, read the following report:—

Scrutineers' Report.

We, the undersigned Scrutineers, appointed at the Fifty-eighth Annual General Meeting of the Pharmaceutical Society of Great Britain, do hereby certify that we have examined the voting papers committed to us, and report the following:—

Voting papers reported by the Secretary to have been issued		5468
Voting papers received		3733
Voting papers issued, but not returned		1735
Voting papers received		3733
Voting papers disallowed:—		
Informal	21	
Received by post too late	24	
	45	
Voting papers registered		3688

Carteighe	2575	Bottle	1722
Young	2298	Druce	1498
Harrington	2168	Campkin	1088
Park	2155	Smith	639
Harrison	2068	Wright	580
Glyn-Jones	1937	Morrison	465
Southall	1779		

Edward N. Butt, Chairman.

W. Prior Robinson.	T. Morley Taylor.	J. Hamerton.
W. Arkinstall.	W. F. Gulliver.	F. A. U. Smith.
J. W. Bowen.	W. M. Holmes.	I. Bourdas.
A. J. B. Cooper.	W. Pickard.	C. Happold.
H. Cracknell.	A. J. Wing.	W. J. Pinchen.
C. E. Garman.	A. E. Tanner.	E. R. Marsh.
R. Fisher Young.	F. Bascombe.	Jas T. Stewart.
John Holding.	W. B. Nelson.	P. Davidson.
J. C. Umney.	R. H. Jones.	C. J. L. Russell.
D. R. Jacks.	H. Wiggins.	
S. A. Sturton.	J. T. De Peare.	

The New Council.

The President, as Chairman of the meeting, then declared that the following gentlemen would constitute the Council for the ensuing year:—

Allen, Charles Bowen, 20, High Road, Kilburn, N.W.
Atkins, Samuel Ralph, Market Place, Salisbury.
Bateson, Thomas, 23, Stricklandgate, Kendal.
Carteighe, Michael, 180, New Bond Street, W.
Corder, Octavius, 31, London Street, Norwich.
Cross, William Gowen, Mardol, Shrewsbury.
Glyn-Jones, William Samuel, 159, East India Dock Road, Poplar, E.
Grose, Nicholas Male, 8, Temple Street, Swansea.
Harrington, John Frederic, 45, High Street, Kensington, W.
Harrison, John, 33, Bridge Street, Sunderland.
Hills, Walter, 225, Oxford Street, W.
Johnston, John, 45, Union Street, Aberdeen.
Martindale, William, 10, New Cavendish Street, W.
Newsholme, George T. Wilkinson, 27, High Street, Sheffield.
Park, Charles James, 1, Mutley Plain, Plymouth.
Savory, Arthur Ledsam, 143, New Bond Street, W.
Southall, Alfred, 17, Bull Street, Birmingham.
Storrar, David, 228, High Street, Kirkcaldy, N.B.
Symes, Charles, 14, Hardman Street, Liverpool.
Warren, William, 24, Russell Street, Covent Garden, W.C.
Young, John Rymer, 40, Sankey Street, Warrington.

After the report of the Scrutineers had been received, the President moved, Mr. Glyn-Jones seconded and Mr. Martindale supported, a vote of thanks to the Scrutineers for their labours. This was unanimously accorded, and Mr. J. Holding then moved a vote of thanks to Mr. E. N. Butt, who, he said, had ably acted as Chairman of the Scrutineers for very many years. Mr. Cracknell seconded the motion, which was carried, and Mr. Butt replied.

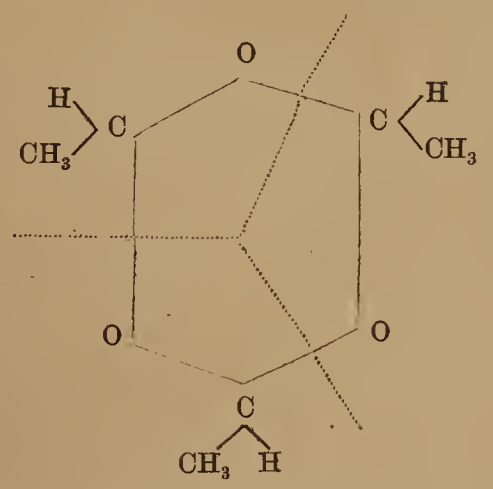
THE STUDENTS' COLUMNS.

EXPLANATORY NOTES ON THE B.P., 1898.

Paraldehydum.—The facility with which aldehydes polymerise and form condensation products is very characteristic of this class of bodies. Although the constitution usually accepted for the aldehydes $\left(R-C\begin{matrix}=O\\ H\end{matrix}\right)$ shows that they are to be regarded as saturated compounds, yet the mode of linkage between the carbon and oxygen readily undergoes a change under certain conditions, so that the aldehyde behaves as if it had the constitution $R-C\begin{matrix}O-\\ H\end{matrix}$ and is capable of combining with two monad elements or groups. For example, acetaldehyde, under the influence of reducing agents, takes up two atoms of hydrogen to form ethyl alcohol:—

$$CH_3C\begin{matrix}O-\\ H\end{matrix} + 2H = CH_3\cdot CH_2OH$$

The formation of the additive compounds between aldehydes and ammonium, sodium acid sulphite, and hydrocyanic acid, are explained on the assumption that the doubly linked oxygen atom $=C=O$ (carbonyl oxygen) may become singly linked as represented on the diagram above $=C\begin{matrix}O-\\ \end{matrix}$. The formation of paraldehyde from acetaldehyde, under the influence of a small quantity of mineral acid, may also be explained in this way. Three molecules of aldehyde then combine to form this polymer, having the same empirical formula as acetaldehyde, C_2H_4O, but whose molecular weight determined by its vapour density is three times as great, viz., $C_6H_{12}O_3$. This polymerisation may be explained by assuming that three molecules of acetaldehyde, by the alteration in the linkage of the oxygen atom, combine to form a closed ring formed by alternate carbon and oxygen atoms:—



Note that paraldehyde no longer behaves like a typical aldehyde towards ammonium and sodium acid sulphite; it is not resinified by caustic potash (*vide* B.P. tests) and does not reduce ammonio-nitrate of silver solution. All these reactions depend upon the presence of the aldehyde group—$C\begin{matrix}=O\\ H\end{matrix}$ which is no longer present in the paraldehyde molecule. Paraldehyde is reconverted into acetaldehyde by distillation with acids, and the ease with which

this reverse change is effected tends to confirm the constitutional formula given above. It will be seen that the closed chain is formed of alternate oxygen and carbon atoms, and is hence a hetero-cyclic compound (a cyclic compound is one in which we assume the presence of a closed ring of elements). Such compounds are much more easily broken up than iso-cyclic compounds like benzene, which contain a closed ring of all carbon atoms. The combination between the carbon atoms of benzene is so stable that they are only separated by the most energetic chemical reactions. The formula is also supported by the refractive energy of paraldehyde (refer to your text-book of theoretical chemistry) and the valency of carbon, which can only be satisfied by the formula given.

There is another polymer of acetaldehyde, known as metaldehyde—a solid crystalline body produced when aldehyde is treated with a trace of mineral acid *at low temperatures*. This also has a molecular formula like paraldehyde, $C_6H_{12}O_3$, and is probably a stereo-isomer of that body.

The absence of sulphates and chlorides (*vide* B.P. tests) indicates that the paraldehyde has been carefully freed from the mineral acid used in polymerisation. The purification is effected by freezing out the paraldehyde, freeing it from adhering fluid by pressure, and then rectifying the crystals by distillation.

In dispensing paraldehyde it is important to see that sufficient water is ordered for its complete solution, owing to the acrid burning taste of undissolved paraldehyde. Observe also that it is less soluble in hot than in cold water.

Pepsinum.—The Pharmacopœia does not now describe the method of obtaining pepsin. The characters and tests given exclude, however, any crude pepsin obtained by scraping the mucous membranes in the manner described in the B.P., 1885. In the article on pepsin contained in the previous series (see Students' Page in *P.J.*, Sept. 25, 1897, p. 286) the method was described by which pepsin, in the form of soluble powder or scales, may be obtained. Such products, owing to the exclusion of inert cell débris, have a much higher proteolytic power than the old product obtained by scraping and drying the scraped pulp. The Pharmacopœia now requires 0·005 Gm. of pepsin to dissolve 12·5 Gm. of coagulated white of egg under the conditions described. This is equivalent to 1 part of pepsin and 2500 parts of white of egg. These requirements are much higher than those of the 1885 B.P., but one cannot form any accurate idea of the relative stringency of the 1885 and 1898 tests by comparing the two processes as they stand, because the conditions under which the examination is carried out in the two cases are very differont as to time, temperature, dilution of the mixture, and concentration of acid. The process now given necessitates almost constant attention for the six hours in order to keep the digestion mixture uniformly mixed by shaking, and to keep the temperature fairly constant. To carry out the experiment, place the materials for testing in a heavy stoppered bottle having a capacity of 150—200 C.c. The bottle when charged with the digestion mixture should stand firmly almost entirely immersed in water. Place it in large saucepan containing sufficient water to cover the shoulder of the bottle so that the level of the digestion mixture within the bottle is well below the level of the water in the bath. Before actually starting the experiment, the water in the saucepan, in which a thermometer is immersed, should be brought to the required temperature, and the gas flame beneath adjusted to the required height to maintain it within about ono degree of this point. It is best to shut off the air supply to the Bunsen burner so that the flame may be turned as low as desired without fear of lighting back. The bulb of the thermometer should be immersed to about half the depth of the water in the bath, and this should be frequently stirred so as to maintain the temperature as uniform as possible throughout its entire bulk. The test would be equally valuable as a comparative test, and less tedious, if the proteolytic value of the pepsin had been stated for a shorter period of digestion—say one hour instead of six. It must be carefully remembered that the weight of albumin digested during successive periods of equal duration is not the same, but diminishes gradually during the progress of the experiment, because the products of digestion accumulate in the fluid and impede the action of the digestive agent. So that it must not be assumed that a sample of pepsin which digests 2500 times its own weight of white of egg in six hours will digest a sixth of 2500 times its weight in one hour. As a matter of fact, it should digest more than one-sixth under the same conditions of time, temperature, concentration, etc., in accordance with what has been already stated. For further particulars relating to pepsin the student is referred to the article in the previous series, reference to which has been already given (see *ante*).

ZOOLOGICAL NOTES FOR PHARMACISTS.—XII.

Mammalia.

This class is so called from the Latin *mamma*, a breast. It is divided into two sub-classes, the first—Protheria—including only one living order, the Monotremata, distinguished by being oviparous and for the absence of teats to the mammal. The remainder form the sub class Theria, which is again divided into two sections—Metatheria, or pouched animals (marsupials), and Eutheria. Many of the suborders of mammals consist only of extinct forms. The mammary glands vary in number, animals producing a number of young at one birth generally possessing most; thus in man two, in the whale two, in the cow and deer four, and in the pig twelve. The position also varies; in man it is anterior, in the cow, whale, and deer posterior, and in the pig the glands lie all along the abdomen. In marsupials and man the glands open directly on a conical extension, forming a true teat. In the cow and other animals they open at the base of fleshy tube, or false teat.

Skeletal structure forms one of the principal bases of classification, in the unequal sizes of the same bones in different groups, the variation in the number of vertebræ and digits, and the peculiarities of the skull and teeth. Cetacea are distinguished by their fish-like form, their aquatic habit, and the absence of hind-limbs and an outer covering of hair. Most Cetaceans possess teeth, as Physeter, but in one family (Baloenidæ) their place is taken by plates of baleen or whalebone attached to the palate. Ungulata—the order including Bos, Ovis, Cervix, and Sus—are characterised by the enclosure of the end phalanges in a horny hoof. Ruminant ungulates, as Bos and Cervix, possess a complicated stomach, divided into a number of chambers, the first acting as a receptacle for unchewed herbage which, at the end of a meal, is thrown up in portions and masticated by the animal.

Several orders take their names from habits, as Carnivora, including cats, weasels, and seals; Insectivora, including moles and hedgehogs; ana Rodentia, including rats, rabbits, and beavers.

With the exception of Cetacea, mammals are covered with hair in some form. Like the scales of reptiles and feathers of birds, hair is of epidermal origin, as also are nails, claws, hoofs, and the outer coat of horns. Porcupine quills are modified hairs, but only one mammal, the armadillo, possesses an exoskeletal coat of bony structure.

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THE ANNIVERSARY MEETING.

The past year has been a more than ordinarily eventful period in regard to the business represented by the Pharmaceutical Society, and in various ways a more thorough perception of what is necessary for improving the position of those engaged in that business has spread throughout the rank and file. The more general acceptance of the great fundamental principle that, however diverse the conditions under which chemists and druggists carry on their business, their distinction from other traders can be established only by proving that one part of that business is something more than a mere trade, and that their claim to privileges, consideration, and respect rests entirely upon the necessity for educational qualification that is not required in other trade occupations, though essential for the proper performance of pharmaceutical functions, and therefore desirable from the public point of view in the interests of the general community. For more correct views on this subject thanks are due in a large degree to local associations of chemists and druggists in various parts of the country, where the influences of improved education and social intercourse have been conducive to enlightenment and to a recognition of what is necessary for keeping abreast of other associated callings, as well as providing defensive means of resisting encroachments. Several of the matters referred to in the report of the Council, and briefly summarised in the President's address last Wednesday when moving the adoption of the report, afford indications of distinct and important progress towards a position of pharmaceutical affairs more consonant with the ideal of the Society's founders than at any previous period. The adoption of regulations relating to the storing, etc., of posions, carried out during the past year has shown that chemists perceive the necessity of putting their house in order, and the result of the broadening of the Society's constitution has shown that the desirability of greater cohesion among chemists and druggists is being recognised, as well as the advantage arising from membership of a Society incorporated by Royal Charter and possessing statutory powers admitting of internal government by which the interests of all concerned may be advantageously promoted.

But side by side with these evidences of progressive improvement there are also indications of serious difficulties and disadvantages. The fact that the practice of pharmacy proper is still largely withheld from registered chemists, in consequence of the want of a suitable separation of that practice from the practice of medicines, lies at the root of most of the grievances which chemists complain of. It is the incentive to practices which are the ground of complaint by legally qualified medical practitioners, and it has been productive of the habit of misapplying the term pharmacy to a mongrel sort of hybrid trade in quack nostrums and other proprietary articles that might as properly be sold by grocers or at a general bazaar as by the qualified chemist and druggist. Out of this unfruitful ground has sprung up the system of company trading, which is carried on with assumption of the titles intended to be indicative of pharmaceutical qualification, in such a manner as to mislead the public into a belief that the drug store belonging to a company of unqualified persons is to be relied upon as being conducted with the skilled experience and personal responsibility of its proprietor that is requisite in the dispensing of medicines or other operations of pharmacy—that such mere trading stores can be trusted as much as the establishments of individuals who have passed through the ordeal of educational training fitting them for pharmaceutical work, and have obtained the legal qualification and title to carry on business held by the State to be necessary in the interests of the public. Against this usurpation of the chemist's privileges, which has grown to such proportions as to make the continued existence of the chemist questionable, it is at length being perceived that energetic resistance must be made. The accession already made to the membership of the Society may be taken as an earnest of the intention to resist the encroachment of drug companies and to face all the consequences of a demand that the unquestionable intention and object of the past action of Parliament shall be upheld by such amendment of the existing Acts as may be necessary for that purpose.

The result of the election of members of Council may be taken as an emphatic expression of general appreciation and approval of the policy and action of the past, as well as an equally strong indication that the general feeling among chemists and druggists will prevent their being misled by irresponsible and unsolicited advisers into supporting measures of compromise, affecting their obvious rights, which would involve the sacrifice of all that has been laboured for in the past and that is now fairly within measurable distance of being realised, though not yet fully accomplished. There is only one circumstance in connection with this election that gives reason for regret; that is the loss sustained by the non-return of Mr. Bottle, who has so long and steadily supported the work of the Society and promoted the best interests of chemists. Without attempting to assign the causes to which that loss may probably be attributed, we do not hesitate to say that it will be matter of general regret to his former colleagues, among whom he occupied the position of Nestor of the Council, to all who knew him and the good service he has rendered, as well as to those who perhaps unwittingly have failed—under the impression that his return was secure and the pressure of novel and disturbing influences—to give him their support in the election.

ANNOTATIONS.

The Council Election has not excited anything like the amount of interest that might have been anticipated, but the voting papers returned numbered 3733 out of the 5468 sent out. Since the number of members who have taken the trouble to vote during the past few years has been about 2000 on each occasion, it is fair to assume that a similar number of the older members voted this time. If that be so, it follows that about three-fourths of the new members elected this year have been sufficiently interested in the administrative work of the Society to vote at the election of the executive body. Of the thirteen candidates who offered themselves for the seven vacancies, six had not previously served on the Council. The result appears to show that the members as a whole are well satisfied with the care that has been taken of their interests during the past twelve months, and that they are far from being in a revolutionary mood. The seven successful candidates are Messrs. Carteighe, Glyn-Jones, Harrington, Harrison, Park, Southall, and Young. Mr. Carteighe heads the poll with 2757 votes, an increase of 1003 on the highest number polled by any successful candidate last year. As usual, several voting papers were disallowed, on account of informality, or because they were received by post too late, the number so wasted amounting to 45. But much worse than that is the grievous fact that no less than 1735 members of the Society have attached so little importance to the occasion that they have not thought it worth while to fill up and return the voting papers sent to them.

Readers of Trade Journals do not appear to be credited with much intelligence, since the attempted jocosity about the "luxuries" indulged in by members of the Pharmaceutical Society is, in one instance, revived second-hand and in another the "fair and honest" suggestion is made that the private expenditure of the Society is more than two thousand pounds in excess of its private income. The following will probably be considered by rational and unprejudiced persons a more correct statement of the actual facts:

General Expenses.

	£	s.	d.
Rent, gas, salaries, etc.	3226	9	5
Establishment charges	1568	19	0
School (balance of account)	978	10	11
North British Branch	809	5	7
Law charges	706	2	11
Annuities	500	0	0
Act, 1898	215	0	0
Death certificates	18	7	6
	8022	15	4

Administrative Revenue.

	£	s.	d.	
Examinations (balance of account)	6097	8	1	
Restoration fees	22	1	0	
				6119 9 1
Adverse balance				1903 6 3

Society's Private Account.

	£	s.	d.
Subscriptions	4795	17	6
Interest	149	16	8
Rent	189	10	8
Restoration fees	6	15	0
	5139	19	10

Expenditure.

	£	s.	d.	
Journal (balance of account)	2252	3	10	
Postage	797	5	9	
Library	373	9	1	
Carriage of books	16	19	2	
Museum	511	6	4	
Calendar	79	1	2	
Meetings	46	16	9	
				4077 2 1
Credit balance				1062 17 9

These statements show that after paying for "luxuries" there was a balance of £1062 17*s.* 9*d.* from the Society's private income which, together with the sum of £840 8*s.* 6*d.* transferred from accumulated funds, paid £1903 6*s.* 3*d.*, or about one-fourth of the general charges incidental to the Society's work during the year, so that there is not a shadow of justification for the statement that the Society's private account shows an "adverse balance" of more than two thousand pounds.

Mr. Maben, in another letter received from him, taking exception to the comments on the new preliminary examination regulations at page 417, wishes to express his opinion that in the remarks there made as to the practical effect of accepting certificates recognised by Scottish universities for registration of medical students, injustice has been done to those certificates. Mr. Maben states that medical students are not allowed to take one subject at a time, and he is further of opinion that the certificates in question "are vastly superior to what will be presented by probably 95 per cent. of students, no matter what their nationality may be." The difference between the view expressed in the Journal and that held by Mr. Maben appears to be mainly matter of opinion, and perhaps the simplest way of showing on what the Journal view was based is to present the chief facts of the case in a brief note.

The Joint Board of Examiners of the Scottish Universities, in their regulations for the preliminary examination in medicine, provide that

> A Candidate who has obtained the Leaving Certificate (Honours or Higher Grade) of the Scotch Education Department in any subject recognised for the Medical Preliminary Examination, shall be exempted from further examination in that subject in the aforesaid Preliminary Examination.

In addition, though the General Medical Council's regulations, which are "applicable to all who begin medical studies," stipulate with regard to the Preliminary Examination that "a candidate shall be obliged to pass in all the required subjects at one or not more than two examinations," the Scottish Joint Board provides that the regulation—that all the subjects of the preliminary examination shall be passed at one or not more than two examinations—shall not be held to apply in the case of candidates who can produce the leaving certificates referred to above. The Joint Committee, whose report was adopted by the Council of the Pharmaceutical Society on May 3 last, recommended—

> That Latin, English, a Modern Foreign Language, Arithmetic, Algebra and Euclid be included in the subjects for which the certificates are granted, and that these subjects shall have been passed at not more than two examinations of the same Examining Body; provided always that certificates which are accepted by the Scotch Universities for registration as medical students be accepted.

The important point to be noted, therefore, is that whilst English and Welsh pharmaceutical students must, in accordance with the new regulations of the Pharmaceutical Society, pass in the whole of the subjects of the preliminary examination at not more than two examinations "of the same examining body," such a condition is not to apply in the case of certificates which are accepted by the Scottish Universities for that. For, according to the terms of the regulations of the Scottish Universities, quoted above, pharmaceutical students in Scotland may pass in the six subjects at more than two examinations, and those examinations need not be conducted by the same examining body. In England and Wales, however, the six subjects must be passed at one or two examinations, and in the latter case both examinations must be conducted by the same examining body.

The Manchester Medical Guild has passed a resolution that it desires to place on record its appreciation of the recent action of the General Medical Council, in raising the standard of preliminary education, and urging the opinion that a still higher

standard would further tend to raise the status of the profession collectively and as individuals, besides promoting the public welfare. The similar action of the Council of the Pharmaceutical Society in regard to preliminary pharmaceutical education should meet with a like appreciative recognition from those engaged in the practice of pharmacy, as well as from the medical profession.

SYMPATHETIC EXPRESSIONS OF OPINION by medical men in opposition to the Lord Chancellor's Pharmacy Bill continue to be made in the medical press. Dr. Cunliffe, of Blackburn, says in the *British Medical Journal* that he should like to see the profession actively supporting chemists in their endeavours to raise pharmacy to a proper level. He refers also to the practice of counter-prescribing as an evil to be remedied; but Dr. Farrar, in the same journal, says "the offence must be laid to the charge, not of the druggist, but of the medical practitioner, who, while he for the most part repudiates the title, yet usurps the functions of the apothecary," and the remedy he suggests is that physicians should not take the position of rival apothecaries; but furnish their patients with prescriptions which can be dispensed by any qualified druggist. Such a method is advocated as being applicable to practice among the very poor, and, if necessary, even to contract practice. Another letter, signed William Day, advocates the case of the company chemist from the purely trade point of view, the writer endeavouring to justify his position by the statement that while there are probably hundreds of chemists shops which are at the present time under the management of unqualified persons, shops belonging to companies are always managed by fully qualified chemists. If that statement be correct, in both respects, it serves only to show that under existing conditions the salutary objects of the Pharmacy Act are not fully secured; but it fails altogether as an argument against the maintenance of the principle that the proprietor of a pharmaceutical establishment should be a legally qualified person and responsible for the proper conduct of the business in every detail. That is the professional view of the practice of pharmacy which has always been held by the Pharmaceutical Society, and deviation from that view is to be attributed to undue consideration of the trade aspects of the chemist's business, which has paved the way for the encroachment of drug companies.

MR. JESSE BOOT cannot reasonably be expected to agree with the views generally held by legally qualified chemists in regard to company pharmacy, but we most willingly respond to his request to be allowed to state his views as to the necessity of qualification for the performance of those functions in regard to which qualification was held by the Legislature to be "expedient for the safety of the public." The view put forward by Mr. Boot is a most valuable contribution, inasmuch as the support it gives to the qualified chemists' contention may be regarded as perfectly free from prejudice. The only point of difference is that Mr. Boot and companies generally desire to purchase the qualification, or the possessor of it, as a chattel, like any other shop fitting. Chemists, on the contrary, hold that the qualification is essential for the performance of the functions to which it relates, and that the exclusive right to the performance of those functions as well as the use of title indicating qualification, are the inalienable consequences of the qualification required in the interests of the public. They also regard companies of unqualified persons, using the title and carrying on the business, as being the pirates in possession, and, it may therefore be expected they will not acquiesce in Mr. Boot's suggestion to legalise such companies, or in any proposed middle course, if such is at all conceivable elsewhere than in the trade journals which find their interests served by supporting the view held by unqualified drug companies.

A SLANDEROUS CHARGE is made by the *Medical Press*, which remarks that the present outcry against the employment of unqualified dispensers was started by chemists and druggists influenced by trade interests, and it is suggested that this "fact" will not commend the agitation to the medical profession. But the same paper asserts that the General Medical Council has done its best to throw cold water on the outcry against the employment by medical practitioners of unqualified dispensers, and refers to the apparent delight of the Government at having an excuse for leaving matters as they are. Continuing, it is stated that "there is not much reason to suppose that such accidents are common, but it is impossible to gainsay the assertion that if they are frequent the public would not be likely to hear of them, seeing that it rests with the person who has most to lose from a scandal to get the dead past to bury its dead." Still, the writer observes, one would have expected the General Medical Council, which has shown such tenacity of late in prohibiting unqualified assistants from performing professional duties, to have displayed the same interest in respect of the assistants equally unqualified from a dispensing point of view, because dispensing is an essential part of medical practice for the bulk of practitioners. Inasmuch, however, as public opinion is not alive to the importance of the complaint voiced by Major Rasch, and in the absence of a popular outcry, the unqualified dispenser is said to be likely to pursue the even tenor of his way "unharmed by interference at the hands of the General Medical Council or of the Privy Council."

MAJOR RASCH duly asked Sir John Gorst, on Friday last, whether the Executive of the General Medical Council had stated what grounds it had for considering that accidents due to the employment of unqualified dispensers by medical practitioners are very rare; and, if not, whether he would ask that body what means it had of knowing the number of accidents, fatal and otherwise, which resulted in doctors' surgeries from the employment of unqualified dispensers. The reply was virtually to the effect that the Privy Council knows nothing about the matter, and is unwilling to ask the General Medical Council any more questions at present. As *Truth* put its, the Privy Council has no knowledge on the subject, and its opinion is based solely upon absence of knowledge, but whether the ignorance manifested justifies the theory which is founded upon it is questioned. A correspondent of the same paper has asked the editor whether he desires to invest chemists and druggists with a monopoly of all dispensing work, and the editor replies that he wishes to invest qualified dispensers with a monopoly, though whether such qualified men are to be styled chemists and druggists or by any other name is matter of no moment, so far as he can see. The title, he holds is of no consequence so long as the qualification is sufficient, but the decision what the qualification should be is left to be decided by competent authority.

NO QUESTION OF MONOPOLY ARISES in connection with the restriction of the practice of pharmacy, and the use of pharmaceutical titles, to registered persons. Such restrictions as now exist to a limited extent were not the result of any attempt to promote the interests of chemists and druggists, but of a desire on the part of the Legislature to protect the public by insuring the performance of certain important duties by duly qualified persons only. The intention of the Legislature was good, but the manner of fulfilling that intention has proved ineffective, by reason of the inability of those who were responsible for drafting the Pharmacy Act, 1868, to foresee all the possible developments of the company system of trading. As a result, a large number of unqualified

persons are now enabled by the defective state of the law to prey on the public, by posing as chemists and druggists, and the old difficulty is reasserting itself in an even more acute form than before 1868. The problem then was to insure that none but duly qualified persons should keep open shop for the dispensing of medicines and the sale of poisons and other potent remedies. That problem was only partially solved by the Legislature, and now presents itself once more for complete solution. Unfortunately, the matter is now complicated by the accumulation of pretended vested interests, and a number of rapacious and unscrupulous capitalists are prepared to do all that lies in their power to dissuade the Legislature from doing what is necessary for the public welfare. Attempts are being made by unqualified directors of companies trading as chemists and druggists to treat the whole question as one raised by registered chemists from motives of trade interest only, whereas the real point to be considered is whether or not chemists are entitled to privileges that are the necessary consequence of compulsory qualification established to protect the public.

More in Sorrow than in Anger the *British Journal of Dental Science* laments that a paragraph in the *Pharmaceutical Journal* of April 29 last should have been published. At the same time, it is far from clear that our contemporary quite grasps the meaning of the paragraph. It simply stated that if medical practitioners and dentists should object to the inclusion of registered chemists in the Companies (Medical Profession) Bill, they would have no cause for complaint if, at any time, they experienced opposition on the part of chemists. Opposition is apt to engender further opposition, and it is obvious that medical men and dentists would simply invite that of registered chemists if they objected to the latter receiving justice at the present time. The statement of this fact cannot fairly be described as a threat that if chemists do not get what they want, they will do their best to ruin the chance of justice being done to anyone at all, nor is it quite easy to see why it should remind the editor of the dental organ of the fable of the dog in the manger. Nevertheless, our warning will not be lost sight of if it be regarded as a threat, nor will its force be weakened if it should prove reminiscent of fables. The fact remains that chemists are in earnest about the matter of unqualified company trading, and whilst grateful for sympathy with respect to the Bill (which is not "their" Bill, though the *British Journal of Dental Science* describes it as such), would much prefer support or, at least, lack of opposition.

Imperial Penny Postage is more nearly an established fact for the whole British Empire than it formerly was, but a few Colonies have not yet adopted the new scheme, though a large number of people in this country appear to think it applies generally. For, notwithstanding the steps which have been taken to notify the public as to the limits within which penny letter postage to British possessions and Protectorates is applicable, considerable numbers of letters are still being posted prepaid only 1*d.* per ½ oz., addressed to places not yet included in the scheme. The principal Colonies concerned are Australia, New Zealand, and the Cape Colony. The letter postage to those Colonies is still 2½*d.* per ½ oz., and letters prepaid at the penny rate are charged 3*d.* per ½ oz. (double the deficiency) on delivery, to the addressees. Since the issue of the previous notices on this subject by the Post Office authorities, Jamaica, Mauritius, North British Borneo, and Labuan have adhered to the scheme; and the letter postage for those places will be 1*d.* per ½ oz. from the 24th instant. Many inquiries having been made whether Burma and British Columbia are included in the penny postage scheme, the Postmaster-General gives notice that both are so included, Burma as a part of British India and British Columbia as a part of the Dominion of Canada.

The Birmingham University Scheme now seems assured of success, only twelve thousand pounds being required to complete the quarter of a million needed. Mr. Andrew Carnegie has given fifty thousand pounds on condition that special prominence be given to science in the proposed university, and an unknown donor has increased a conditional donation of twenty-five thousand pounds to half as much again. At a meeting of the Canvassing Committee held last week, it was resolved to assure Mr. Carnegie that the public appreciation of his generosity will be incalculably enhanced by the thoughtful and kindly spirit in which the offer is made, and by the intimate personal connection of the donor with the special industries of the Midland district as practised in the community which has justly received the designation of the "Birmingham of America." The committee has from the outset of its labours intended that in the new University, while providing for liberal culture in all its aspects, there shall be no mere copying of older institutions, but that special attention shall be given to scientific training and research, and that the new University shall be stamped with a character peculiarly adapted to the requirements of modern industrial necessities and progress.

Adulteration of Food must be rampant in America, if a sensational report recently sent over is to be credited, but a large margin probably needs to be allowed for exaggeration. According to the *Daily Telegraph*, official analysts have made the appalling discovery that tarred rope is freely utilised in the manufacture of the ginger of commerce, and that pulverised clay is lavishly mixed with the flour supplied to unsuspecting Britons "for household use." Starch figures as a copious adulterant of powdered sugar; ground-up coco-nut shells are extensively sold as prime buck-wheat flour; jellies are made of apple-cores and parings blended with glucose; and butter is compounded of tallow and marrow. Condensed milk, on the other hand, is said to be preserved by means of wood-alcohol which, the *Telegraph* thinks, is admirably calculated to abridge the lives of its unwary consumers, and the opinion is expressed that those of our American cousins who occupy themselves with the preparation of food intended for British consumption might temper adulteration with mercy." Paraphrasing a familiar old couplet, we would say to these unkindly kinsfolk: 'Perhaps you are right to mix clay with our flour, but why do you poison our milk'?"

Inland Revenue Officials are reported to be making a round just now, attempting to induce chemists to supply some of the well-known medicated wines by presenting what professes to be a medical prescription. Many chemists seem to be under the erroneous impression that though they cannot sell such wines in the ordinary way without a licence they may legitimately do so if prescribed by a doctor. In this way some have unwittingly incurred penalties and it is well to point out that a medical prescription does not secure immunity from liability. In one case, particulars of which have been sent to us, the victim in this case had always refused to sell in the ordinary way, but thought he was at liberty to supply a certain proprietary wine if it was ordered in a prescription. He acted on this impression recently, and has got notice to pay two pounds or be prosecuted. He told the officer who delivered the notice that he had a prescription for the bottle he supplied, but the officer laughingly told him it was not a genuine prescription, having been concocted for the express purpose of trapping him.

REVIEWS AND NOTICES OF BOOKS.

EINFÜHRUNG IN DIE PRAKTISCHE NAHRUNGSMITTELCHEMIE. By Dr. HERMANN THOMS and Dr. E. GILG. Pp. viii. + 415. Price 9 marks. Leipzig: S. Hirzell, 1899.

In Germany, as well as in England, there exist numerous text-books dealing with the analysis of foods and drugs, the substances commonly used to adulterate them, the means by which these may be detected, and the amount in which they are present determined. But the student of this department of analytical chemistry and microscopy has always been placed at a disadvantage by the absence of any suitable work designed to introduce him in suitable succession to the principal operations involved, and to exercise him in carrying them out. This gap the authors have now endeavoured to fill by their "Introduction to Practical Food Analysis."

The work is divided into two parts. The first and larger part deals with the chemical analysis of foods, the second and smaller with the microscopical. The chemical part is sub-divided into two sections, viz., a general section dealing with the operations to be performed and methods used, and a special section dealing with the analysis of certain foods, specifying the determinations to be made and giving the interpretation of the results.

The student following the course of instruction laid down in the work would first be made acquainted with the methods to be used, and would then practise them, if necessary, on suitably prepared material. Having thus gained some experiences of the various operations he would proceed to the complete analysis of certain foods. His work would be facilitated by numerous exercises appended to the first part, to which reference is constantly made in the second part.

The microscopical part of the work is treated in a similar manner, the student being first introduced to the methods and then exercised in them.

The work is exceedingly well written, and amongst the processes described the most modern and most reliable are to be found. By its means the student will be made acquainted with the best and most recent methods, and also encouraged to compare the various methods with one another, so that he may form an opinion as to the relative ease with which they are performed and the accuracy of the results they yield. Numerous illustrations enable him to see at a glance how the necessary apparatus should be constructed, whilst the tables at the end of the first part facilitate the calculation of results. The histological part is also well provided with illustrations that for the most part are original.

There can be little doubt that the work supplies a want, and that it will prove useful to the student of food and drug analysis. It may be confidently recommended to all who are interested in such work and who possess sufficient command over the German language to enable them to read it with facility.

ANATOMISCHER ATLAS DER PHARMAKOGNOSIE UND NAHRUNGSMITTELKUNDE. Von Dr. A. TSCHIRCH and Dr. O. OESTERLE. Part xiv. Price 1s. 6d. London: Williams and Norgate, 14, Henrietta Street, Covent Garden.

This part of Tschirch and Oesterle's 'Anatomical Atlas' deals with lavender flowers, with rhubarb, and with the leaves, flowers, immature and mature fruits of the bitter orange. The thoroughness that has characterised the work published in the Atlas has already been referred to in the notices that have from time to time appeared in the pages of this Journal, and Part xiv. is no exception to the rule. To the description of lavender flowers no less than three pages are devoted, for although it cannot be classed as one of the most important drugs, yet it presents several interesting anatomical features. One of the most prominent of the latter are the very numerous forms of trichomes that are found on the bract, calyx, corolla, stamens, and style, of which no fewer than eight are described. The most remarkable are the long hairs present on the inner surface of the corolla; they have wavy walls and are terminated by a secreting cell. The outer surface of the calyx is covered with branching hairs, amongst which numerous oil-glands of the usual labiate type are situated; it is by the latter that the oil of lavender is secreted. Very curious, also, are the epidermal cells of the inner surface of the calyx; they bear papillose thickenings of the outer wall and contain minute crystals of calcium oxalate.

The anatomy of rhubarb occupies six pages and, according to the author, shows that part at least of the Chinese drug is derived from *R. palmatum* and its variety, *β- tanguticum*, Maxim, an opinion that agrees with that expressed by Maximowicz, but was opposed by Dragendorff. The whole of the Chinese drug consists of erect rhizomes, the internodes of which are so short as to be almost suppressed. Two separate systems of fibro-vascular bundles exist in them, the one near the periphery the other in the centre of the rhizome. The former are leaf traces and are normal; the latter are abnormal, developing bast towards the interior of the bundle and wood towards the exterior. The abnormal bundles take a vertical course, anastomosing at the nodes and sending branches into the buds; they form on the transverse section of the rhizome a nearly continuous ring of star-spots, the radiate appearance of each of which is due to the colouring matter stored in the cells of the medullary rays. Similar spots are also seen when the rhizome is cut longitudinally, these are produced by the horizontal branches of the abnormal bundles that are formed at the nodes.

The leaves and flowers of the bitter orange are of less importance to pharmacists, but offer many points of interest. The remarkable crystals of calcium oxalate in the epidermis of the leaf (as well as of the rind of the fruit) are formed in the protoplasm of the cell, and become gradually enclosed in a cushion of cellulose produced by the thickening of the cell walls. The schizolysigenous origin of the oil-glands as well as the development of the pulp of the orange from hair-like processes produced by the inner wall of the ovary are fully described.

The plates that accompany this part of the Atlas compare very favourably with those that appeared in the earlier parts of the work. The deeper colour of the ink in which they are printed much facilitates the careful study of the details.

TABELLARISCHES REPETITORIUM DER CHEMIE UND PHARMACOGNOSIE. Von Dr. C JEHN. Pp. 120. Price 2s. Leipzig: Ernst Günther. (London: Williams and Norgate.)

The little book of 112 pages published under the above title has previously appeared as an appendix to Schlickum's 'Ausbildung des Apotheker-lehrlings,' a work well known to and largely used by German pharmaceutical apprentices. For the sake of convenience it has been found desirable to publish the appendix separately, and the author has availed himself of the opportunity to carefully revise it.

The matter is divided into four sections. The first two embrace the chemical preparations and the last two the vegetable and animal drugs. The members of each section are arranged in tabular form, which is more convenient to the student than any other, the details given being placed in parallel columns. In the case of the chemical preparations these include the name and

synonyms, formula, method of preparation, properties and tests; of the vegetable drugs the botanical and geographical sources, the order (natural and Linnæan systems), description, constituents and adulterants.

The text has naturally assumed the most condensed form possible, and a great mass of information has been crowded into a small space, thus rendering the book doubtless a valuable one for the purpose for which it was intended, viz., to refresh the student's memory. The first two sections appear to have been carefully revised, but the third section, dealing with the vegetable drugs, has not been brought so well up to date as might have been expected. This is especially the case with the constituents of the drugs. Thus, the active constituent of belladonna root is stated to be atropine; of ipecacuanha, "emetine, no starch"! (*sic*); of foxglove leaves, digitalin and digitalein. In the next edition which will doubtless be required, this defect should certainly be remedied.

The tables have been prepared for German students, and are, of course, based upon the German Pharmacopœia. It is doubtful whether they would be of much utility to the English student of pharmacy.

WINKE FÜR DIE PHARMAZEUTISCHE REZEPTUR. By A. RODERFELD. Pp. 58. Price 1*s.* 6*d.* Leipzig: Ernst Günther. (London: Williams and Norgate.)

The variety in the problems daily submitted to the ingenuity of the dispenser is so great that a welcome should be accorded to any attempt to assist him in their solution, more especially when it comes from abroad, where different customs prevail and different methods of dispensing medicines are adopted.

The author's object has been to afford aid to dispensers, especially in the preparation of such prescriptions as may only occasionally be presented, and the work professes to be, as its title indicates, 'Hints to Dispensers.'

The first fifteen pages of the book are occupied with various tables, the remaining forty being devoted to the various classes of preparations, such as mixtures, emulsions, pills, capsules, bougies, etc.

From the comparatively small space in which these are dealt with, it must be evident that they can be but briefly considered, and that is, in fact, the case. Emulsions, for instance, occupy less than two pages, compressed tablets half a page, ointments four pages, and so on. Nevertheless, into this small space much has been compressed.

On reading the book carefully, the English dispenser will doubtless find much that is familiar to him, but he will also find something that is new, if not always in accordance with his experience of what is best. Thus he would scarcely select ready-powdered gum-resins as the best for preparing emulsions, nor would he be disposed to rub a resinous tincture with powdered gum and a few drops of water. Camphor he would suspend by dissolving it in a little spirit and adding the solution to diluted mucilage, whilst, contrary to the author's statement, he would be able to produce good emulsions from all the vegetable oils with less than half their weight of powdered gum. The section on ointments, on the other hand, contains many useful hints on the admixture of various extracts, salts, tinctures, etc., of chloroform, menthol, naphthol, resorcin, etc., with the various ointment bases.

The work is neither intended for nor suitable for apprentices or students, but rather for the dispenser who has been instructed in the rudiments of his art and is seeking to extend his experience. To him it will undoubtedly be useful, and even the skilled pharmacist may find in it the means of helping him over a difficulty.

THE ANNUAL DINNER OF THE PHARMACEUTICAL SOCIETY.

Once again the wheel of time has brought round the event of that pleasant and important function the annual dinner of the Pharmaceutical Society, on this occasion at the Whitehall Rooms, Hôtel Métropole, on Wednesday, May 16. That it was an unqualified success everyone present is able to testify. The arrangements were good, there was a good company to discuss a really good dinner, a good musical programme, and a PRESIDENT (Mr. Hills) whose conduct in the chair strongly confirmed the opinion which has steadily grown during the past three years of his capability and fitness for the position he has occupied with such honourable distinction. In proposing the toasts of "The Queen," "The Houses of Parliament," "The Corporation of the City of London," "Science," and "Our Guests," and also in responding for the toast of the "Pharmaceutical Society," his remarks in each connection were concise, happy, and to the point.

Referring to the constitution of the House of Lords, the PRESIDENT made some pertinent suggestions for its amendment, and offered a little experience to the House of Commons in regard to the question of women councillors in the London Government Bill, and the possibility of their becoming aldermen and mayors, remarking that the fear was once expressed that if women were allowed to be members of the Pharmaceutical Society the future would probably see a woman president, but he could assure Sir Walter Foster, M.P., as there representing the Houses of Parliament, that there had not even been a woman on the Council yet. Speaking of the ability of any one member of Parliament to block a private Bill, he suggested that it would be better if two were required instead of one.

Sir WALTER FOSTER promised that, whenever the Lord Chancellor's Pharmacy Bill came before the House of Commons, he would help the Society to oppose it. He also congratulated the Society on the safe passage of the Pharmacy Acts Amendment Act, 1898, and gave the members a little sound advice as to how best to influence the Legislature, expressing the opinion that the Society has now greater power in that direction than any other body. He said, "The way for you to influence the Legislature is to maintain your organisation, increase your members, make your Society stronger, and keep it so organised that it will strengthen the hands of your President in approaching the Legislature."

Lieut.-Colonel and Sheriff PROBYN, whom the President described as a distinguished citizen of whom chemists might well feel proud, was accorded a right royal reception by his brother craftsmen, and in replying to the toast of the Corporation of the City of London, he struck a sympathetic chord when he referred to pharmacists as a body of highly educated, well trained, and highly intellectual men who are infamously remunerated for the services rendered by them to the public. He thought that it is only reasonable to demand that, in return for the good pharmacists do to the public, the public should do a great deal of good to the pharmacists.

The VICE-PRESIDENT (Mr. Newsholme) in proposing the toast of "The Medical Profession," referred to the Lord Chancellor's Bills, and contended that as pharmacy is a branch of the medical profession and medical men, dentists, and pharmacists hold somewhat analogous positions, the three professions should unite to get similar privileges for all.

Dr. CHURCH, President of the Royal College of Physicians, humorously suggested that the pharmacist is too much in evidence at the present time, and he referred to the numerous dainties and delicacies in the way of remedies for all the ills flesh is heir to which are sent by pushing manufacturers and cover the breakfast tables of medical

men. He carefully avoided the thorny subject of pharmaceutical and medical legislation, simply remarking that some people were apt to expect more than they were justified in looking for.

Prof. Michael Foster replied for Science, remarking that if there is any exemplar of the benefits of science, it is the calling or profession of pharmacy. He elicited roars of laughter by describing pharmacy in the days when he was a boy as more like a series of gymnastic exercises than anything else; but since then, he was good enough to remark, great advances have been made in the manufacture of pharmaceutical preparations.

Dr. Bernard Dyer, in proposing the toast of the "Pharmaceutical Society," spoke in eulogistic terms of the educational work done by the Society, mentioning the fact that the School of Pharmacy Chemical Laboratory was the first public laboratory opened in this country for the education of students.

The President, in replying, simply referred to the remarks of previous speakers, and reserved his own remarks on the work of the Society for "the morrow," when there would be no music and no smoking.

The Guests were represented by Sir James Crichton Browne who, especially considering that he was called upon to speak at almost a moment's notice, acquitted himself well. He had one or two little knocks at the prescribing chemist and the dispensing doctor, and referred rather sarcastically to a recent work on prescribing published especially for druggists, to the London Chamber of Commerce *re* illicit commissions, the authorities who refuse to schedule carbolic acid, the abuse of medical charities, and lastly, he mentioned the fact of having been made the subject of a coroner's inquest on account of his address before the Pharmaceutical Society last October.

REPORT OF THE SPEECHES.

The annual dinner of the members and friends of the Pharmaceutical Society of Great Britain took place on Tuesday at the Whitehall Rooms, the number attending being considerably above the average of recent years. The chair was occupied by Mr. Walter Hills, President of the Society, and the spur tables were presided over by the Vice-President (Mr. Newsholme), Mr. C. B. Allen, Mr. I. Bourdas, Mr. R. Bremridge (Secretary), Mr. W. Martindale (Treasurer), Mr. G. S. Taylor, and Mr. C. Umney.

The health of the Queen having been proposed by the President, and drunk with great enthusiasm,

The Houses of Parliament.

The President next proposed "The Houses of Parliament." He said it had recently been said in *Punch* that much could not be said on this subject, because sneers at the Lords were not popular, and the Lower House was too respectable to be anything but dull; but he could not dismiss it quite so summarily. Probably all present, whatever their politics, believed in the wisdom of a Second Chamber, and though he was not an ultra-Radical, he had long thought that some improvement might be made in the House of Lords if representative peers were chosen for England in the same way as they were for Scotland and Ireland. That House contained many eminent and patriotic statesmen, and was remarkable for eloquence and ability; he could only regret that it was not represented that evening. The House of Commons was at present engaged in discussing the London Government Bill, and he saw that one question which had arisen was whether women should be eligible as councillors, and if so, whether they might become aldermen and finally mayors. Some years ago similar questions were raised in that Society, and it was asserted that if women were to become members they would be elected on the Council, and one might become President; but hitherto neither of these contingencies had occurred. He might, perhaps, be allowed to suggest, remembering the difficulty that occurred a year ago in getting the Pharmacy Acts Amendment Bill through the House, that a virtually unopposed Bill should not be allowed to be blocked unless at least two members concurred in doing so. He would couple with the toast the name of Sir Walter Foster, who he was sure would do what he could in the interests of pharmacy if certain Bills now before the House of Lords should find their way into the House of Commons.

Sir Walter Foster, M.P., F.R.S., in response, said it had been a great pleasure on more than one occasion to attend the annual dinner of the Pharmaceutical Society, because he recognised that its members belonged to a calling which exercised a wide influence and was carried on with great advantage to the public. He had all the greater pleasure inasmuch as the President was a personal friend of long standing. He had spent some time that day in the House of Lords, an institution of which all Englishmen were proud, though, like all human institutions, it was not without imperfections, otherwise people might be inclined to fall down and worship it. During the present session, indeed, a harmless Bill, having for its object the granting to shop assistants the opportunity of sitting down occasionally, was slaughtered in a vehement speech by the Prime Minister; but probably their lordships would before long have an opportunity of reconsidering the matter. With regard to the House of Commons, he often wondered how the country was fortunate enough to find gentlemen to fill it. It cost a man from £500 to £1500 or more to get a seat, and several hundreds a year afterwards, and it brought him every morning a pile of letters from every crank in the United Kingdom. When anyone who, like himself, belonged to one of the professions happened to get a seat he was immediately assailed by all his professional brethren and by all kindred societies, and was obliged to work for them whenever called upon. Last year the life of every medical man in the House was rendered a burden by constant appeals from the President of the Pharmaceutical Society, and he had to meet deputations and read letters without end until happily the Bill passed. The President suggested that a Bill should only be blocked by two members, but when they thought of the physical labour involved, sitting up night after night at the risk of losing one's health, he thought they would hesitate about calling on two members to make such a sacrifice. In spite of the block the Pharmacy Bill passed, and he was glad to give it all the assistance he could. He could assure them that when anything affecting their interests came forward in the House they had many friends there. They were well organised, and exercised more influence than many bodies boasting larger numbers. He would only say, in conclusion, that the way to maintain that influence was to keep up their organisation to strengthen the Society, and to let it be thoroughly understood that the voice of the President was the voice of the Society.

The Corporation of the City of London.

The President next proposed "The Corporation of the City of London," coupled with the name of Lieut.-Col. and Sheriff Clifford Probyn, whom they were glad to welcome as a guest, though he was also a member, and was well known as a liberal contributor to the Benevolent Fund and as a public man who had done yeoman's service in municipal affairs and in connection with the Volunteers.

Lieut.-Col. and Sheriff Probyn said he was very glad to meet so many old friends. He trusted the new municipalities about to be created would take the Corporation of London as their example in carrying on their work. In art, science, and education it had taken a noble part, as well as in commerce, and he had found his own official work so pleasant that he could recommend everyone, if possible, to attain a similar position.

The Medical Profession.

The Vice-President next proposed "The Medical Profession" whose services to the State and to the individual none could so thoroughly appreciate as the pharmacist. It had also rendered immense services to science; in fact, no profession had advanced so rapidly during the last twenty-five years. They were often told that England was behind other countries in scientific matters, but Englishmen were proud to know that their country had produced men as eminent in the science of medicine as any country in the world, some of whom were present that evening. They had been especially prominent in promoting sanitation and preventive medicine, for the day had long gone by when it was thought to be against the interest of the profession to prevent sickness. During the last year only, a great step had been taken, under the auspices of H.R.H. the Prince of Wales, to combat the terrible malady of consumption. Pharmacists were proud to be associated with the medical profession, and he trusted that their professional brethren would assist them in withstanding the attack made upon their professional status and titles by the Lord Chancellor's Bill. They did not desire that the trade of a chemist should be protected, but

their profession and titles should be safeguarded in the interests of the public as much as their own. He begged to couple with the toast the name of Dr. Selby Church, President of the Royal College of Physicians.

Dr. Selby Church said wherever the British public was, there the medical profession was honoured, and deservedly so. There were very few, in whatever station, who had not at some time to seek medical advice, which always received consideration and attention. The profession was animated by high aims and by the desire to prevent the spread of disease and to alleviate suffering. In so doing they were dependent on the pharmacist. The time was long passed when the doctor gathered his own herbs under the full or waning moon, and distilled them in an alembic; and they now had preparations placed in their hands for combatting the ills of humanity which were marvels of scientific skill. He doubted if any branch of manufacture had advanced so much as in pharmacy; some might even think it was rather too much in evidence. Almost every morning one's table was covered with the most dainty preparations—some made on the other side of the Atlantic, and some on this—with the aid of which they were assured that they could cure all the ills that flesh was heir to. There were chemical and other foods, digestives, bi-digestives, enzymes, peptones, and other substances, some of which might perhaps be better placed in the waste-paper basket than in the stomach. But speaking seriously, the pharmacist had done a great deal for the physician in giving him portable drugs. He had to practise his art in the uttermost parts of the earth, where nothing was available beyond what he took with him, and not only the profession but the world at large were enormously benefited by the progress made in pharmacy. He would not venture on the thorny path of medical or pharmaceutical legislation, but he might remark that it was possible to expect too much from legislation. They were all apt to regard matters from their own special standpoint, and should endeavour to look at them from the standpoint of the public. Before concluding he must acknowledge the great debt owing by the profession and the public to the Pharmaceutical Society for the aid it had rendered in the preparation of the British Pharmacopœia, without which it would have been impossible for the Medical Council to have produced so satisfactory a work, and he must also mention the great services rendered by the Editor, Professor Attfield.

Science.

The President next proposed "Science," a toast which was always received at such gatherings with the greatest cordiality. Pharmacy could not progress without the aid of science, an instance of which was the Pharmacopœia which had just been mentioned. What a difference was there between that volume and the pharmacopœias that appeared only 100 years ago. He was lately looking at one—a French one—which gave a formula for a plaster containing no less than three score ingredients, and there was a distilled water called *aqua generalis* containing twice as many. In the B.P. for 1893 there was nothing of the kind, though there were a few drugs with rather long names, but they spoke for themselves. In every direction science had made great progress since the Society was founded, as was shown at every soirée of the Royal Society. He might refer to the exhibition at a recent meeting of a new element discovered by Professor Crookes, and named Victorium. Motor cars in the streets, telephones in offices, electric light in houses, and wireless telegraphy on the coast all told the same tale. He would associate with the toast the name of Professor Michael Foster, an honorary member, Secretary of the Royal Society, President-Elect of the British Association, and also a member of the London University Commission. He would not ask him to say anything about the work of the Commission, but he felt sure that as long as Professor Foster was a member of it the interests of pharmaceutical education would not be forgotten.

Professor Michael Foster said it seemed to him that he was always enjoying the good dinners and good company of the Pharmaceutical Society and having to pay for it by making a speech, and if he had any other theme he should have some timidity about it, but he was never afraid to respond for science, because in science the individual disappeared, men of science were part of a great machine, and what they accomplished was done not by themselves but by science working in and through them. If there were an exemplar of the benefit of science it was the Pharmaceutical Society and profession. Lord Derby once spoke of himself as living in a pre-scientific age, and he was old enough to look back—he would not say to the pre-scientific stage of pharmacy, because from the days of Dioscorides downwards pharmacy had been connected with science—but to a time when pharmacy had not the sharp scientific character it has at present. As a boy he was initiated into some of its mysteries, which partook largely of the nature of gymnastic exercises. There was always something seething in a pot which had to be stirred; something to be ground in an iron mortar, with a napkin wrapped round the pestle to prevent any chips escaping, or a delicate process of rolling and rolling and rolling, terminating in a vigorous "drive to the off." Now all these things were done elsewhere. There were people who provided little things which you swallowed without knowing it, because they slipped down before you were aware. And what a change in material. In the old days they had not so many drugs, in spite of their complicated formulæ; in his remembrance they were very simple, and the majority of them had disappeared. The old treatment was a kind of blunderbuss which scattered its shots, and if it reached the stomach, or heart, or kidneys, at the same time affected the nose, the palate, or even the ear; but the modern drug was a scientific projectile, driven by smokeless powder, and unheard, and unseen went straight to its mark. The greatness of science was shown in the development of pharmacy. He was no longer engaged in the active practice of medicine, but his name still appeared in the Medical Directory, and one of the results was that his maidservants never had any difficulty in kindling the kitchen fire. Every morning there came pamphlets and drugs of all sorts, shapes, and sizes, and only yesterday he had a number of portraits of distinguished individuals to illustrate the effects of a remedy for gastric ulcer, Science was great, but her needs also were great, and the ancient university to which he belonged, which was supposed to be very wealthy, had had to write begging letters in the newspapers because it had been pauperised by its scientific work. With regard to the new University of London, he was doing his best for pharmaceutical studies, but the great want was the want of funds, and if they wanted to see pharmacy take a proper position in the new University, he would suggest that they should get hold of a few millionaires.

The Pharmaceutical Society.

Dr. Bernard Dyer next proposed, "Prosperity to the Pharmaceutical Society and the Health of the President." The Society was nearing its diamond jubilee, and it had nobly discharged its duty to the public, which, it was to be feared, did not adequately appreciate the obligations under which it lay. He had been reminded by Dr. Paul that the educational laboratory of the Society was the first of the kind in England, coming even before the College of Chemistry, to which that honour was often assigned. In days gone by he had derived great advantage from attending a course of lectures at the School of Pharmacy, and was glad to acknowledge the kindness and courtesy with which the instruction was placed at the disposal of one who was to some extent an outsider. It was to be regretted that more of the students did not go on to the Major examination and obtain the fullest qualification, because, though he would not suggest that the Minor did not include all that was necessary from a public point of view, the man who went through the more comprehensive course of reading necessary for the Major naturally obtained a broader basis on which to build up that scientific and mental development which should go on all through the life of anybody associated with a calling founded upon science. He hoped the measures taken to widen the scope of the Society would tend to bring more students into the Major field. After some sympathetic remarks on the subject of the Research Laboratory—which could not fail to add to the prestige of the Society—and the Benevolent Fund, Dr. Dyer expressed the hope that the Society would come safely out of the Parliamentary conflict which threatened their position, and concluded by advising the members not to release their worthy President from his present office for some time to come.

The President, in responding, said he always found this toast received with great cordiality, and that the President, as representing the Society, never met with anything but a most cordial welcome. He might enlarge on the advice given them by Sheriff Probyn and recommend all present to qualify themselves and aspire to the office he had the honour to hold. He would remind his medical friends that the delicacies which were sent them by post every morning did not emanate from the Society, though in some cases the senders might individually be members thereof. He thanked Dr. Dyer for his reference to the School, which he

hoped would always be maintained in its present state of efficiency, as the basis of all progress in pharmacy, as in everything else, was education. With regard to the work and aims of the Society he should have a full opportunity of speaking on the morrow, but he was proud of what it had done in the past, and trusted that those who managed it in future would maintain its best traditions.

The Guests.

He concluded by proposing "The Guests," coupled with the name of Sir J. Crichton Browne, and also mentioned that the Hon. Geo. Waldegrave Leslie, who was largely associated with the passing of the Act of 1868, had written expressing his regret that, owing to an attack of influenza, he was unable to be present. Dr. Thorpe, President of the Chemical Society, would also have been asked to respond, but he had been obliged to leave.

Sir J. Crichton Browne said he would only briefly thank the Society for the hospitality extended to its guests. He rejoiced to see so many members of his own profession amongst them, for he did not doubt that such social gatherings tended to a good understanding. They smoothed away misconceptions, helped to define spheres of influence, promoted the delimitation of frontiers, and hastened the advent of those halcyon days when the prescribing chemist and the dispensing doctor would both, like the dodo, be extinct. The incessant advance and extension which was going on both in medicine and pharmacy seemed to him to involve increasing the decisive character of the line of demarcation between the functions of the two callings. His experience was that the better educated the pharmacist became, the less prone was he to rush in where doctors feared to tread; and that the more scientific the medical man became, the less disposed was he to make up his own prescriptions. It was the lean apothecary who engaged in counter practice, and it was not the leaders of the medical profession who desired to handle the pestle and mortar. It was the duty of the pharmacist to discourage as much as possible counter practice, except in cases of great emergency, and he regretted to see, therefore, that a work had been quite recently published, addressed to the drug trade, upon diseases and their remedies. He presumed there was a demand for it, or it would not have been issued. It was said to be prepared by eminent physicians, who modestly concealed their names, and it contained just such rubbish as might be expected from anonymous authorities. It informed the drug trade that the nature and causes of cancer were perfectly understood, and that a couple of teaspoonfuls of sulphur introduced into the socks was a safe and complete protection against cholera. He did not know that much complaint would be made so long as chemists and druggists confined themselves to prescribing sulphur in socks, but when they entered on the larger range of counter practice they ran great risks. He had recently heard with astonishment that certain nefarious relations had existed between the two professions, and that illicit commissions had been given and received. The London Chamber of Commerce, trusting to absolutely anonymous testimony, had said so, so it must be true, and realising that fact, he could only look back with regret on his lost opportunities. During a long professional career none of these illicit commissions had ever come in his way, nor had he ever been tempted even by a barrel of oysters, The only consideration ever held out to him had been invitations to the annual dinner, and he could solemnly affirm that these had not induced him to prescribe one extra dose of castor oil or bromide of potassium, or to mention favourably the names of any of the leading members of the Society. There were black sheep in all professions, but having been for a great many years in contact with all classes of the profession, and having had absolute control of a drug bill forty or fifty times the amount of that of any general practitioner, he could emphatically declare that he had never, directly or indirectly, heard of the alleged custom, and did not believe in its prevalence. It seemed to him that Parliament, instead of spending its energies in futile attempts to put a stop to a practice which did not exist as regards doctors and chemists—and, if it did, would be much better reached by raising the moral standard of the two professions—might much better occupy its time by placing under the control of the Pharmaceutical Society certain poisonous substances which led to a considerable destruction of human life, such as carbolic acid, which could be vended by any ignorant and irresponsible grocer or tallow chandler. No doubt carbolic acid was a useful antiseptic and disinfectant, and so was corrosive sublimate, but no one suggested that the latter should be sold anywhere and by anyone. There were other antiseptics comparatively innocuous which might be sold freely, but it was high time that carbolic acid was scheduled as a poison. Another subject which was attracting a great deal of attention in his own profession was the abuse of medical charities. He was lately reading the Remains of the Dean of Bristol, from which it appeared that when a young man he was offered the curacy of St. Peter's, Vere Street, at a stipend of £30 a year, and when he hesitated to accept it the inducement was held out to him that if he happened to fall ill, sixteen of the most eminent physicians in Harley Street would be glad to attend him for nothing. The position of such a poor curate was appalling to contemplate, and it certainly would be far better to give him an adequate salary and enable him to pay his own physician's fees than to throw in doctoring as a perquisite like the cook's dripping. The medical charities and hospitals, both general and special, were abused to some extent by those who could afford to pay for medical advice, and though he would rather that a dozen impostors got advice gratuitously than that one suffering and needy individual should be sent empty away, still the profession must live and should be protected against chicanery. Hospitals therefore should look into this matter and in particular he thought a stand should be made against a practice which was growing up in some quarters of supplying medical advice freely and charging for the medicine. If persons could afford to pay for their drugs they ought to go to the nearest druggist's shop for them.

During the evening an excellent programme of vocal music was given by the Westminster Singers.

List of Those who were Present.

The following is the official list of those who were present at the annual dinner of the Pharmaceutical Society:—

Allen, C. B.
Allen, —
Anderson, G.
Arkinstall, W.
Arrow, J. J.
Arrowsmith, A. R.
Atkins, S. R.
Attfield, Dr. J., F.R.S.
Baiss, S. S.
Barron, R. E.
Bascombe, F.
Bate, H.
Bateson, T.
Bird, Stanley
Bird, —
Bolton, H. N.
Bolton, H. N., jun.
Bottle, A.
Bourdas, I.
Bourdas, I., jun.
Boutall, G. S.
Bowen, J. W.
Boxall, F.
Boyes, A.
,, Friends
Bremridge, R. (Secretary)
Bremridge, R. Harding
Browne, Sir J. Crichton, F.R.S.
Bryant, T., F.R.C.S. (President Royal Medical and Chirurgical Society)
Butt, E. N.
Carteighe, M.
Carpenter, A. H.
Carter, R. W.
Castle, J. W.
Chalmers, W.
Chaney, H. J. (Superintendent of Standards)
Chater, A. J.
Church, Dr. W. Selby, F.R.S. (President Royal College of Physicians)
Collie, Professor J. Norman, F.R.S.
Collier, H.
Cottle, D. Wyndham
Cracknell, H.
Cross, W. Gowen
Davies, T.
Davis, W. A.
Dixon, R. D.
Dodd, W. R.
Drace, G. C.
Duckworth, Sir Dyce (Treasurer Royal College of Physicians)
Dyer, Dr. Bernard
Eastes, E. J.
Eastes, G.
Edden, T. L.
Ekin, C.
Farr, E. H.
Foggarthy, —
Flack, A.
Flux, W.
Ford, T. M.
Foster, Professor Michael, F.R.S.
Foster, Sir Walter, M.P., F.R.S.
Foster, —
Foster, John
Francis, G. B.
Francis, W. H.
Frankish, Dr.
Frost, S. T.
Gamble, F. W. (President Chemists' Assistants' Association)
Gerrard, A. W.
Giles, A., M.R.C.S.
Glazier, Walter
Glyn-Jones, W. S.
Goldsworthy, W. L.
Goodman, V. A.
Graham, W. M.
Greenish, Professor H. G.
Gregory, A. C.
Grice, W. T.
Gulliver, W. F.
Harrison, J.
Harrington, J. F.
Harvey, R. M.
Harvey, Ralph K.
Hills, Rowland, M.R.C.S.
Hills, Walter (President)
Hodgkinson, C.
Hodgson, C. R. (Secretary, College of Preceptors)
Holmes, E. M. (Curator)
Hopkins, W. King
Howe, F. G.
Howie, W. L.
Hugill, E. A.
Hugill, J. H.
Hugill, T. P.
Humphrey, John
Hutton, W.
Idris, T. H. W., L.C.C.
Jones, G. E.
Jones, R. H.
Jones, W. Adpar
Julier, H., F.R.C.S. (President Harveian Society)
Langton, J., F.R.C.S. (President Clinical Society)
Lansdown, G. A.
Leng, R.
Lescher, F. Harwood
Lewis, D. L.
Lloyd, J.
Lucas, E. W.
Martin, C.
Martin, N. H.
Martin, T. C. W.
Martindale, W. (Treasurer)
Massey, S. J.
Mathews, H.
Mercer, C. A.
Mercer, F. M.
Miles, C. J.
Moon, H.
Morris, —
Morson, A.
Morson, T. P.
Moxon, G. R.
,, Friend
Naylor, W. A. H.
Newsholme, G. T. W. (Vice-President)
Ord, S. W.
Pain, R.
Park, C. J.
Parsons, W.
Patterson, J.
Paul, A.
Paul, Dr. B. H.
Phillips, A. J.
Philp, W. I.
Pinchen, W. J.
Probyn, Lieut. Col., and Sheriff
Richardson, R.
Ridgwell, J. B.
Ridley, R.
Robbins, C.
Robbins, J.
Robbins, P. J.
Robertson, Dr. Milne
Robinson, R.A., L.C.C.
Rogers, F. A.
Rogerson, W. J.
Royle, H. Ingram
Royle, H. W.
Royle, J. W.
Savory, A. L.
Scanes, E. A.
Shannon, R. J.
Shaw, J. W.
Sherwood, N.
Shillcock, A.
Silverlock, H. T.
Simpson, Alderman, J.P.
Smith, S.
Solomon, A. H.
Squire Geo.

Stebbing, H. Percival (Master Salters' Company)
Stevenson, Dr. T. (President Institute of Chemistry)
Symes, C.
Talintyre, W. J.
Tanner, A E.
Taubman, R.
Taylor, G. S.
Tench, S., M.R.C.S.
Thorpe, Professor T. E., F. R. S. (President Chemical Society)
Thurston, J.
Tickle, T.
Tirard, Dr. Nestor
Townson, T.
Travers, Dr. W.
Trimmer, E., M.A. (Sec. Royal Coll. Surgeons)
Umney, C.
Umney, J. C.
Walker, H.
Walker, H. J. D.
Want, W. P.
Ward, J. S.
Waring, A. W.
Warren, W.
Webb, H. E.
Weston, S. J.
Whiffen, T.
,, Friend
White, E.
Whitehead, W.
Wiggins, H,
Wigginton, A.
,, Friend
Will, W. Watson
Williams, Hy.
Williams, T. R.
Williams, W. Lloyd
Wilson, J.
Woolley, S. W.
Woosnam, —
Worsley, A. G.
Wretts, J. R.
Wright, Alfred
Wright, H. C.
Young, J. Rymer

SALE OF FOOD AND DRUGS BILL.

The following are the principal clauses of the Sale of Food and Drugs Bill now before Parliament which refer more particularly to the sale of food and drugs, as they have been amended in committee :—

Sale of Food and Drugs.

12. Notice of Mixtures (38 & 39 Vict. c. 63).—The label referred to in section eight of the Sale of Food and Drugs Act, 1875, shall not be deemed to be distinctly and legibly written or printed within the meaning of that section unless it is so written or printed that the notice of mixture given by the label is not obscured by other matter on the label: Provided that nothing in this enactment shall hinder or affect the use of any registered trade mark, or of any label which has been continuously in use for at least seven years before the commencement of this Act; but the Comptroller-General of Patents, Designs, and Trade Marks shall not register any trade mark purporting to describe a mixture unless it complies with the requirements of this enactment.

13. Amendment of 38 and 39 Vict. c. 63, s. 14, as to Samples.—(1.) In section fourteen of the Sale of Food and Drugs Act, 1875, the words "offer to" and the words "proceed accordingly and shall" shall be repealed.

(2.) Section fifteen of the same Act shall also be repealed.

16. Penalties for Offences under the Sale of Food and Drugs Acts.—(1.) Where, under any provision of the Sale of Food and Drugs Act, 1875, a person guilty of an offence is liable to a fine which may extend to twenty pounds, he shall be liable for a second offence under the same provision to a fine not exceeding *fifty pounds*, and for any subsequent offence to a fine not exceeding *one hundred pounds*.

(2.) Where, under any provision of the Sale of Food and Drugs Acts, a person guilty of an offence is liable to a fine exceeding fifty pounds, and the offence, in the opinion of the Court, was committed by the personal act, default, or negligence of the person accused, that person shall be liable (if the Court is of opinion that a fine will not meet the circumstances of the case) to imprisonment, with or without hard labour, for a period not exceeding three months.

17. Articles Sold in Tins or Packets.—Notwithstanding anything in section seventeen of the Sale of Food and Drug Act, 1875, where any article of food or drug is exposed for sale in an unopened tin or packet duly labelled, no person shall be required to sell it except in the unopened tin or packet in which it is contained.

18. Time for Proceeding.—(1.) When any article of food or drug has been purchased from any person for test purposes, any prosecution under the Sale of Food and Drugs Acts in respect of the sale thereof shall, notwithstanding anything contained in section twenty of the Sale of Food and Drugs Act, 1875, be instituted within twenty-eight days from the time of the purchase.

(2.) Particulars of the offence or offences alleged and also the name of the prosecutor shall be stated on the summons.

(3.) A summons shall not be made returnable in less time than *fourteen days* from the day on which it is served.

(4.) There must be served with any such summons a copy of any analyst's certificate obtained on behalf of the prosecutor.

(5.) Section ten of the Sale of Food and Drugs (Amendment) Act, 1879, is hereby repealed.

19. Provisions as to Use of Warranty or Invoice as Defence.—(1.) For the purpose of section twenty-five of the Sale of Food and Drugs Act, 1875, an invoice shall be deemed to be a warranty without the addition of express words of guarantee, but a warranty or invoice shall not be available as a defence to any proceeding under the Sale of Food and Drugs Acts unless the defendant has, within seven days after service of the summons, sent to the purchaser a copy of such warranty or invoice with a written notice stating that he intends to rely on the warranty or invoice, and specifying the name and address of the person from whom he received it, and has also sent a like notice of his intention to such person.

The person by whom such warranty or invoice is alleged to have been given shall be entitled to appear at the hearing and to give evidence, and the court may, if it thinks fit, adjourn the hearing to enable him to do so.

(2.) A warranty or invoice given by a person resident outside the United Kingdom shall not be available as a defence to any proceedings under the Sale of Food and Drugs Acts, unless the defendant proves that he had taken reasonable steps to ascertain and did in fact believe in the accuracy of the statement contained in the warranty or invoice.

(3.) Where the defendant is a servant of the person who purchased the article under a warranty or invoice he shall, subject to the provisions of this section, be entitled to rely on section twenty-five of the Sale of Food and Drugs Act, 1875, and section seven of the Margarine Act, 1887, in the same way as his employer or master would have been entitled to do if he had been the defendant, provided that the servant further proves that he had no reason to believe that the article was otherwise than that demanded by the prosecutor.

20. Duty of Court to Send Article for Analysis (38 and 39 Vict. c. 63).—The justices or court referred to in section twenty-two of the Sale of Food and Drugs Act, 1875, shall on the request of either party under that section cause an article of food or drug to be sent to the Commissioners of Inland Revenue for analysis.

21. Provisions as to Certificates of Analysis.—At the hearing of the information in any proceeding under the Sale of Food and Drugs Acts, the production by the defendant of a certificate of analysis by a public analyst in the form prescribed in section eighteen of the Sale of Food and Drugs Act, 1875, shall be sufficient evidence of the facts therein stated, unless the prosecutor requires that the analyst be called as a witness.

* Clauses 14 and 15 deal with a technical amendment of the 1875 Act as to registered parcels, and also with the offence of obstructing of Food and Drug officers.

FOOD AND DRUGS ACT PROSECUTIONS.

Camphorated Oil.—At the Durham County Police Court on Wednesday, May 10, Thomas Curtis, grocer, Tudhoe Grange, was charged with selling camphorated oil which was not compounded with olive oil and was deficient in camphor.—Mr. Scott Elder, for the prosecution, stated that his assistant purchased on April 7 from the defendant's premises six bottles of camphorated oil, for which he paid 6d. The County Analyst had certified that the sample was deficient in camphor to the extent of 69·98, and was not compounded with olive oil. The analyst was of opinion that it might be common cottonseed oil or colza oil. Mr. Elder called attention to the fact that the bottles were sold from a large card, upon which were printed the words "Finest quality camphorated oil." Defendant was not really responsible, because the bottles were sealed, and he knew him to be a respectable tradesman.—Mr. Laidler, for the defence, pointed out that the defendant was in no way responsible, and the responsibility rested with the wholesale people. His client had written to them, and they had declined to give any undertaking as to the payment of costs and penalties.—Mr. Scott Elder said the defendant could recover these.—The Bench, after consultation, imposed a fine of £20 and costs, stating that the defendant had his redress with the wholesale people.

Sweet Spirit of Nitre.—On May 4, William Barker, grocer, Todmorden, was summoned at the Todmorden Petty Sessions for selling sweet spirit of nitre containing only two-fifths of the minimum proportion of nitrous ether required by the British Pharmacopœia.—The solicitor for the defendant, in cross-examining the Inspector who had charge of the case, tried to show that no warning of the new B.P. requirements had been given to defendant, but the Inspector pointed out that wholesale chemists were cognisant of the alterations, and in his opinion they were the people who ought to give their grocer-clients the information. The solicitor contended that as the Inspector was informed officially

of the change in the law, small shopkeepers liable to prosecution ought to have had like information. The defendant bought two pints of sweet spirit of nitre from Messrs. McGuire and Richards, of Blackburn, in January, 1898, in a bottle labelled "Pure," from which small quantities were sold from time to time. Defendant had not tampered with the article and was not aware of its volatile properties.—A fine and costs amounting to 23s. was inflicted.—— A fine of 5s., including costs, was imposed at the Sheffield Police Court on May 6 on William Walker, grocer, Wincobank, who was found guilty of selling sweet spirit of nitre containing only 1·12 per cent. of nitrous ether.—Defendant ascribed the deficiency to evaporation, and stated that he bought 20 ozs. of tho article in September, 1898.——Charlotte Ainsworth, shopkeeper, Canklow, was summoned at the Rotherham Police Court, on May 8, for selling sweet spirit of nitre containing only 0·89 per cent. of nitrous ether and 89·11 per cent. of alcohol and legitimate water. —The defendant pleaded that she had sold the spirit, which was bought about four months previously, as supplied to her.—The Bench, while of opinion that defendant had not acted wilfully in the matter, ordered a fine of 1s. and costs, warning her at the same time to buy the article in smaller quantities in future.

LEGAL INTELLIGENCE.

PROCEEDINGS UNDER THE PHARMACY ACT, 1868.

PHARMACEUTICAL SOCIETY *v.* TAYLOR'S DRUG CO., LTD.

At the Hull Police Court, on Friday May 12, Mr. E. C. Twiss (Stipendiary), Taylor's Drug Co., Ltd., Leeds, were summoned for unlawfully selling laudanum at their branch shop—368, Anlaby Road, Hull—without having the bottle distinctly labelled with the address of the seller, in accordance with the provisions of Section 17 of the Pharmacy Act, 1868.

Mr. Laverack (instructed by the Pharmaceutical Society) said the offence for which the defendants were summoned was that on April 25 of this year they sold at their branch shop—368, Anlaby Road, Hull—a certain poison (laudanum) without giving the address of the seller, as required by Section 17 of the Pharmacy Act, 1868. That Act was passed for the protection of the public, and contained regulations as to the sale of poisons throughout the kingdom.

Mr. Twiss: That appears to be obvious.

Mr. Laverack, continuing, said the facts were that a man named Mitchinson, acting on the instructions of the Society, purchased from the defendants' shop—368, Anlaby Road, twopennyworth of laudanam.

Mr. Twiss: It is admitted that it is poison?

Mr. Dodgson (representing the defendants): Yes, sir.

Mr. Twiss: Is the sale admitted?

Mr. Dodgson: The complainants will have to prove the sale. We admit selling poison that day, but we do not know to whom.

Mr. Laverack: Mitchinson received a bottle, which is produced, and it has a label upon it bearing the words "laudanum," "poison" "Taylor's Drug Co., Ltd.," and then the names of a number of towns and cities.

Mr. Twiss: How many?

Mr. Laverack: Nine.

Mr. Twiss: Nine?

Mr. Laverack: Yes, and then follows "etc." The laudanum was paid for, and at the same time Mitchinson received a bill which is headed "Taylor's Drug Co., Ltd.," and gives their registered office as 3, 5, and 7, Gilbert Street, Leeds; and it gives at the top of the bill altogether sixty-five branch establishments, there being a number of branches in each of several towns, Hull having six.

Mr. Twiss: And if you wanted the address where laudanum was procured you have no means of getting it without going to the sixty-five branches.

Mr. Laverack: That is so; and even then they could not tell.

Mr. Twiss: It would be very difficult.

Mr. Laverack: We contend the label on this bottle does not give the address within the meaning of the Act.

Mr. Twiss: Supposing somebody purchased threepennyworth of laudanum, poisoned himself, and died, it would be necessary to find out where the poison was procured. Is this admitted?

Mr. Dodgson: I mean to argue on that with other points.

Mr. Laverack: Of course, your Worship sees it is impossible to say from this label even the town where it is purchased.

Mr. Twiss: Yes, of course.

Mr. Laverack: I may add that these proceedings have been taken by the Society in consequence of complaints which have reached the Society.

Mr. Dodgson: Before going on with the evidence I desire to raise an objection, and it is that Taylor's Drug Company are not the proper persons to be sued. The point turns on the question of the seller. In the case of Templeman *v.* Trafford (51, "Law Journal") the proceedings were taken under a similar section as in this case. It states that the respondents kept a shop and sold poisons there on commission, the poison being labelled with the name and address of the chemist who supplied it to him.

Mr. Twiss: That is a very different case to this one. That is a case where a man sold poison in his own shop, and the poison was labelled with the name and address of his principal, who was a chemist.

Mr. Dodgson: Yes, and this is a case which is similar.

Mr. Twiss: Here the servant of the company sells.

Mr. Dodgson: Poison can only be sold by a registered chemist, and the company are not registered chemists, and they cannot be.

Mr. Twiss: Is that so?

Mr. Laverack: Yes, but an unqualified assistant would be liable under Section 15.

Mr. Dodgson: Our man is a qualified chemist and has the control of the business. We admit our man was the servant of the company, but he was the actual seller.

Mr. Laverack: We contend that he is the company in this case.

Mr. Dodgson: That I dispute.

Mr. Twiss (reading the case of Templeman *v* Trafford): It seems to me that this case is against the Society, and that the person to be summoned should have been there.

Mr. Dodgson: The case says "actual control," and they have summoned persons at Leeds.

Mr. Twiss: On the ground that they were the sellers.

Mr. Dodgson: But they were not.

Mr. Twiss: This appears to me, speaking offhand, to be somewhat against you, Mr. Laverack. "The part of Section 17, which says 'that any seller,' means the servant on the spot who is acting for the seller is then deemed to be tho seller." It seems to me to be a question as to whether the company are to be said to have been "a person on the spot."

Mr. Dodgson: I submit, further, that the company as a company cannot be a registered chemist.

Mr. Twiss: But they are not here as registered chemists. If they have sold here, within the meaning of the Statute, it does not make the offence any the less because they are not registered chemists. My question is, Are they liable on the point you have taken or is the person who has control of that particular shop the person who is liable. But I will hear the evidence.

Jonathan Mitchinson, Hull, proved the purchase of the laudanum on April 25, and Mr. Harry Moon, clerk to the Registrar of the Pharmaceutical Society, produced the bottle of laudanum and the bill given with it.

Mr. Moon, cross-examined by Mr. Dodgson: He noticed there was a stamp on the bill. It was very indistinct, and he could not make out what it was.

Well, see if you can make it out; it gives an address at Hull.—I can see something.

As a matter of fact it is 368, Anlaby Road?—I cannot see that.

Mr. Twiss (to witness): Have you found this sort of thing carried on in different parts of the country?—I caused a purchase to be made in London last week, and the same label was used there.

Have proceedings been taken there?—No proceedings have been instituted at present.

How long have they been selling this way?—I cannot say; probably for several years.

Mr. Laverack said he had a letter from the defendants' solicitors admitting that the article purchased by the complainants at the shop of the Company, and labelled "Laudanum," was a poison within the meaning of the Act; and that the person who sold the laudanum was a servant of the Company and sold on behalf of the Company.

Mr. Twiss: There is one more admission I should have liked to have had, and that is, whether they admit the shop was the shop of the Company?

Mr. Laverack: They admit that by the terms of their letter.

Mr. Dodgson: I do not admit anything further than the two points.

Mr. Laverack: I submit that the Bill which was given is *primâ facie* evidence that the shop was the shop of the Company.

Mr. Twiss: It appears to me that in the case Mr. Dodgson has quoted the shop was kept and controlled by the respondent Trafford, and in that there is a difference to this case. Trafford's shop was actually his own shop; and it seems to me there is a great divergence between the facts and the two cases. Trafford was carrying on his own business in premises of which he was the tenant; but he was supplied with drugs from a man named Patterson; and he gave Patterson a commission on all drugs that were forwarded to him and sold by him at his own shop. Therefore, in my judgment, the case differs very widely from the present case. You see that the man who kept the shop and the man selling was Trafford, and because he sold drugs on account, for a man named Patterson, it was held that his own label should be on the bottle. Here it is admitted that the shop is Taylor's drug shop. And, then, surely it cannot be contended that the sale was not on behalf of the Company?

Mr. Laverack: It is admitted that the sale was on behalf of the Company.

Mr. Twiss: I cannot see how the defendants can get outside the words "that person, nominally the Company, shall be deemed to be the seller."

Mr. Dodgson: I submit the interpretation is: the person actually resident on the spot.

Mr. Twiss: But you admit it was your shop, that it was your servant, and that it was on your behalf; and therefore it seems to me that the case of Trafford scarcely applies to this one.

Mr. Dodgson: Then, if that is so, it seems to me that the right address to put on is the registered address at Leeds?

Mr. Twiss: The address should be the Company at 368, Anlaby Road, Hull.

Mr. Laverack: The address where the poison is sold.

Mr. Twiss: Yes; it would be easy to know the address where the poison was sold, then. I am not deciding this case now, but I apprehend that every poison should be labelled with the address of the Company; that is, "Taylor's Drug Stores, Ltd., 368, Anlaby Road, Hull," or wherever it may be in other towns. That is your contention, Mr. Laverack?

Mr. Laverack: That is so. One would have thought that if the contention of my friend was sound, the Company would have put the name of the man instead of the Company on the label.

Mr. Twiss: I now think that the defendants are responsible in this case. Your contention, Mr. Dodgson, is that the man who sold ought to have been summoned and not the Company. I am disposed to think that that contention is not well founded.

Mr. Dodgson: There is another point: the bottle was wrapped up in a bill upon which the proper address of the shop was given.

Mr. Twiss: That will not do. It is the bottle that is to have the address.

Mr. Dodgson: I may say that the usual custom is to put an extra label on, with the address of the shop; and evidently it was omitted in this case, by an oversight.

Mr. Twiss: You say this is practice and custom, and that this has been done inadvertently.

Mr. Dodgson: Yes, I know that does not improve my case; but it was a purely technical offence; and the mere fact that it was wrapped up in a bill which gave the name and address of the shop may have been thought sufficient.

Mr. Twiss: That may be so; but suppose the bill was lost. It is the vial or bottle that contains the poison which is to have a label. The only question is the first point which you raised, and I do not think I have much doubt about that now. If you have nothing else to say, I think the conviction must ensue on the ground that there has been an infringement of the section under which these proceedings have been taken. You say this has been done inadvertently. Have you evidence to show that, because it might operate on my mind?

Mr. Dodgson: Yes.

Walter Chas. Langbourne, 368, Anlaby Road, said he was a registered chemist in the employ of Taylor's Drug Co. The usual custom when he sold poison was to put on a general label and then a little slip bearing the words "Taylor's Drug Co., Ltd., the Great Store Chemists, Studley House, Anlaby Road, Hull."

By Mr. Twiss: That has been the custom for about four months, and it was the practice at all the stores of the Company he had been at in Hull. He was responsible for the sale of poisons.

By Mr. Laverack: He could not say whether the two bottles shown to him were purchased at his shop. The practice of putting labels with the address of the branch on had not been instituted since these proceedings commenced, but it was started when the shop opened in January.

Mr. Laverack: I have another bottle purchased in London. Does it show the custom?

Mr. Dodgson: I object to that question.

Mr. Twiss: I cannot allow the question.

Witness: I am speaking of what I know myself. Continuing, he said he was a servant of the Company, and had been since January 1 this year. All the time he had been in Hull. The practice was to put a label with the address of the shop where the particular bottle of poison was sold. He could not say whether the Company rented the shop or whether it was their property. He did not rent it. The occupiers of the shop were Taylor's Drug Stores, by whom he was paid a salary.

Mr. Twiss: I am quite clear about this. There has been an infringement of the section of the Pharmacy Act, 1868. Having regard to the fact that I shall grants costs, I think a fine of 10*s.* will meet the case. The costs were fixed at £9 6*s.* 4*d.*

The Pharmaceutical Society *v.* Carter and Long.

The adjourned hearing of this action came before his Honour Judge Stonor at the Brompton County Court on Tuesday last. The action, which was brought to recover a penalty under Section 15 of the Pharmacy Act, 1868, in respect of the sale of poison by an unqualified person, was originally brought against Mr. F. C. Carter, but upon that gentleman proving that he did not make the sale in question his Honour adjourned the case to give the plaintiffs an opportunity of proceeding against Mr. W. Long, another assistant in the shop where the sale took place.

Mr. T. R. Grey (instructed by Messrs. Flux, Son and Thompson) appeared for the plaintiffs; Mr. Germaine appeared for both defendants.

Mr. John Partridge proved having purchased a bottle of Dr. Collis Browne's chlorodyne at 19, King's Road, Chelsea, on December 12 last. He was served by a man about thirty years of age, who he had previously been told by the errand boy was Mr. Carter. He identified the person who sold to him standing in court.

Cross-examined: The assistant who served him took the bottle out of a drawer just above his head; he did not go to the back of the shop before handing it over the counter. The words "Sloane Pharmacy Stores, Ltd.," were over the shop.

Mr. Grey then cited the case of the Pharmaceutical Society *v.* Wheeldon in support of his case.

Mr. Edwin Mills Heard was called by Mr. Germaine, and said that he purchased the business of Bishop's, Ltd., and had changed the name to the Sloane Pharmacy Stores. He had three assistants and a lady cashier. The assistants were F. C Carter, W. Long, and Evan Richards, the latter being a qualified man. Mr. Richards' duties were to supervise the sale of poisons and do the dispensing.

Cross-examined: He was not a qualified man. He was not the sole owner of the business, it belonged to a limited company having a capital of 1000 shares, of which he held about 500. A Mr. Stradwick also held about 500. There were also the usual seven signatories to the memorandum, who of course held at least one share each. Witness had no personal knowledge of the sale in question.

Mr. Evan Richards was next called. He said he was an assistant at the Sloane Pharmacy; his duties were to supervise the sale of poisons and to do all the dispensing. He had no knowledge of the sale to Mr. Partridge. When a customer came to purchase a poison, the assistant would inform him, and, if he did not sell it himself, he supervised the sale; he stood by the assistant when it was handed over to the customer. Calorodyne was kept in a drawer in a room adjoining the dispensary, where other poisons were kept. Anyone going to the room to get a poison must be seen from the dispensary.

Cross-examined: He passed the Minor examination and thus became qualified twelve months ago last January. He had been in his present employment twelve months. He went out to his dinner each day, and was away from the shop between the hours of one and two. Mr. Carter and Mr. Long were left in the shop when he went out. Neither of these gentlemen were qualified. His place was in the dispensary, where he could hear everything that went on in the shop.

Re-examined: If a poison was asked for when he was away from the shop it would not be supplied.

Mr. William Long, examined by Mr. Germaine, said he had never sold a poison except under the supervision of Mr. Richards. He had

no recollection of Mr. Partridge purchasing any chlorodyne on the day in question. When a poison was asked for his practice was to call Mr. Richards forward. If Mr. Richards was absent they would tell the customer they had not got the article in stock.

Cross-examined: He was now at the Sloane Pharmacy, although he was not a month ago, when the case was last before the court. He left of his own accord the day before Good Friday. He had no particular reason for leaving. He had heard that Mr. Carter received notice of the case, but did not think that he (witness) was the person who supplied it. After he saw his name mentioned in the paper he went back and saw Mr. Heard. He would swear that there were no proprietary medicines containing poison on the counter. He was present when the case was in the list for hearing on the last occasion, but as it was so long before it was reached he did not remain to hear it tried. On that occasion he stood next to Mr. Partridge, who failed to recognise him.

Mr. Germaine submitted that he had no case to answer. He could not, of course, dispute that there had been a sale of chlorodyne on the day in question.

His Honour: If you admit that the sale was made to Partridge, there must be judgment for the plaintiffs, because Mr. Richards, the only qualified man in the shop, says positively that he does not remember selling it.

Mr. Germaine contended that in this shop the supervision required by the Act was exercised. There must have been intended to be a distinction in the mind of the Legislature between drugs which had to be compounded by a qualified man, and proprietary medicines. The seller was merely the channel for purveying the medicine.

His Honour remarked that the Legislature said the channel was to be a qualified man. The selling referred to in the Act was over the counter. No doubt it was rather hard that the proprietor should not be liable instead of the man.

There would be judgment against Long for £5, and a non-suit in the action against Carter.

PROCEEDINGS IN THE HIGH COURT OF JUSTICE.

Valentine's Meat Juice.

Mr. Justice Stirling, in the Chancery Division of the High Court of Justice, on Wednesday began the hearing of the action of the Valentine Meat Juice Co. *v.* the Valentine Extract Co., Ltd., and Mr. C. R. Valentine.—The plaintiffs, who are an American firm, asked for an injunction to restrain the defendants, their servants, and agents from carrying on business as manufacturers or vendors of any preparation of extract of meat or meat juice under any name or title of which the name "Valentine" formed part without clearly distinguishing such business from the business of the plaintiffs. The case for the plaintiffs was that they had sold a meat juice or extract since 1871, and that it had become known to the trade and to the public as "Valentine" or "Valentine's Extract," and that anyone asking for it under those names would expect to get the article manufactured by them. Plaintiffs had sold their goods in the United Kingdom since 1877, and they had now got an annual sale in this country of some 1800 gross of bottles. A large number of affidavits were filed by chemists in support of the plaintiffs' contention that the public would be deceived in purchasing the defendants' meat globules, which they called Valentine meat globules, under the belief that they were the goods of the plaintiffs. Among the deponents were Mr. George Charles Butt, senior assistant of the drug department of Messrs. Spiers and Pond's stores, Mr. W. Rawse, M.D., F.R.C.S., Mr. Mansell, manager of the drug department of the Junior Army and Navy Stores, Mr. William Henry Blake, M.D., M.R.C.S., M.R.C.P., Mr. Michael Curtis, chemist, of 51, High Holborn, Mr. Septimus William Ord, partner of Bullock and Co., 3, Hanover Street, Mr. William Alfred Elston, partner of G. Bourne and Co., New Broad Street, Mr. Sugden, assistant manager of the drug department of Harrod's Stores, Mr. Walter McNicholl, counterman of the Home and Colonial Stores, Mr. Phillips, chemist, Mr. Hughes, chemist, Mr. Thomas, chemist, Mr. Brunton, chemist, of Earl's Court Road, Mr. Feltwell, and Mr. Robert Clarke Wakefield, M.D., of Notting Hill. The evidence of these gentlemen was to the effect that when they saw the globules of the defendant company they were under the impression that they were the preparations of the plaintiffs, and they thought deception would arise if the defendants were allowed to use the name Valentine. The defendants denied that the word Valentine as used by them would cause confusion. They contended that the plaintiffs' preparation was entirely used for medicinal purposes, whereas the defendants' was used by athletes, cooks in the kitchen, and as a prepared food.—Among the deponents for the defence were Mr. Lennox Browne, Dr. Harvey, and Mr. Gibson, a surgeon, of Herne Hill; Mr. W. P. Robinson, chemist, of Clapham Common; and Mr. John Plowright, assistant of Jolly and Co.—The hearing was not concluded when the Court rose.

On Thursday and Friday a number of professional gentlemen, chemists, and doctors, were called on behalf of the plaintiffs. They gave evidence to the effect that they understood on receiving circulars from the defendants that the meat globules referred to were manufactured by the plaintiffs, and that the plaintiff company was connected with the defendants in some way.

Mr. C. R. Valentine, one of the defendants, said that in 1895 he had experience in the meat extract trade by being commissioned by the New South Wales and New Zealand Governments to report on the produce trades, and as manager of the produce departments of the Colonial Consignment and Distributing Company he came into direct touch with meat extract manufacturers and buyers. In his judgment there was a pecuniary value in his name in connection with meat globules. It was not true that he had selected the name Valentine (his own name) for the purpose of trading on the reputation of the plaintiff company, and the allegations of fraud against him were unfounded. The defendant company had taken counsel's opinion and he acted within it, and strict injunctions had been given to their agents not to represent that the meat globules were made by the Valentine Meat Juice Company.

In cross-examination by Mr. Moulton, witness admitted that the first consignment of extract of meat received by the Colonial Company was in March, 1897, and prior to his joining that company he had never bought, sold, or manufactured extract of meat. Witness claimed that he was identified with the manufacture and handling of extract of meat, but he denied that the defendant company's circulars were written intending to suggest that he was one of the Valentines who were the manufacturers of the well-known meat juice.

Mr. Moulton read the application, signed by witness, for the trade mark "Valtine" in America, in which was the statement, "This trade mark has been continuously used in my business since February, 1897," and that the trade mark had been used by him in commerce between the United States and foreign nations. Witness admitted that that was untrue.

Mr. Ernest Henry Short, the secretary of the defendant company, said the fact that Mr. C. R. Valentine had been well known in the trade to be an expert on provision matters, and that he had called on extract of meat firms whilst the Colonial Company was receiving consignments of extract of meat, was of value to the defendant company. He had instructions that every person who seemed to confuse the two companies was to be put right, and that he was not to do anything which would lead to confusion. He told the travellers that they were to make it plain to the customers that the defendant company was not connected with the plaintiff company.

In cross-examination witness said he had Valentine's meat juice in his mind when he wrote the circulars of the defendant company. At the Birmingham Grocers' Exhibition the judges said it was a pity the defendant company's name was so like that of the plaintiff company.

Sir Westbury Perceval, late Agent General for New Zealand, spoke to Mr. Valentine's reputation in the produce trade.

The action was adjourned till next sittings.

Sodium Persulphate as a Germicide.—Since sodium persulphate, $Na_2S_2O_8$, in half per cent. solution, acts as a check on common bacterial growths, and in a 5 per cent. solution is an active bactericide, Friedlander suggests the use of the salt as a gargle instead of potassium chlorate, and also for dressings as a substitute for lysol, creolin, carbolic acid, sublimate, etc. Sodium persulphate in its pure state forms large crystals. The commercial article contains a few percentages of sodium sulphate, and occurs as a white crystalline powder, odourless and readily soluble in water. The free sulphuric acid and the ozone generated when the salt is dissolved are doubtless the cause of its bactericidal properties. These solutions have the disadvantage of blackening metallic instruments.—*Pharm. Zeit.*, **44**, 101.

EXTRACTS FROM CONSULAR REPORTS.

Would-be Proprietors of Mineral Water Springs have now an opportunity of becoming such in reality, providing they have a sufficiency of the "one thing needful," it being stated in a report issued from the Foreign Office this month (May) that the Leghorn Springs are for sale. According to the report, these springs belong to the class of muriated waters, and contain some 14 per mil of sodium chloride, 3 per mil of magnesium chloride, 1 per mil of chloride of lime, and 980 Gm. of pure water. Carbonate of lime, magnesium carbonate, silicic acid, sulphate of lime, sodium sulphate, magnesium sulphate, sodium iodide, all in small quantities, are also said to be amongst its constituents. The waters enjoy great favour with the local faculty, and are especially recommended for all diseases of the digestive organs, and more particularly the liver, etc., obesity, chronic rheumatism, intestinal catarrh, and diseases of the respiratory organs. No proper effort has, however, been made to advertise the satisfactory results of this water, so that it scarcely enjoys even Tuscan celebrity, the Livornesi themselves being perfectly content to seek health without any elaborate or meretricious attractions.

The Merits of the Waters are said to be incontestable, and now that the proprietors are casting about for an opportunity to sell Vice-Consul Carmichael remarks that the question presents itself whether capital might not be well invested in endeavouring to convert the springs into a veritable spa, and seeking to make Leghorn the rival of Casciana and Montecatini. The springs are beautifully situated, about a mile outside the northern end of the town, and are approached by shady avenues of trees. They face the Livornesi Hills, and command a view of the hills of Pisa and Lucca and the Apuan Range. Of course, a handsome and commodious pumphouso would have to be built, the surrounding grounds properly laid out, and arrangements made for the usual amusements of a watering place. Leghorn itself possesses all the advantages and conveniences of a large town, and this of itself, the British Consul thinks, might prove an attraction to seekers after health who are apt to weary of the monotony of the small and isolated inland watering-places. It is pointed out, however, that the waters enjoy such a favour with the lower classes that it would be almost impossible to deprive them of their privilege of drinking it at 1*d.* a glass. On some days, between water drunk on the spot and water carried away to the sick, as many as 1000 tumblers are said to be consumed. The project is mentioned in the report simply as a possible means of satisfactorily employing capital.

The Opium Import of Ningpo (China) during 1898 was less than the previous year by nearly £50,000, although small quantities of Benares and Persian appeared in the customs returns after being absent for a time. On the other hand, the consumption of native opium has gradually increased from 19 cwts. in 1893, to 246 cwts., value £9005, in 1898. The only kinds which come under the inspection of the customs are those from Szechuen and Yunnan. It is known, however, that the poppy is grown at Wenchow and Taichow, and it may be seen in cultivation round Ningpo, but no statistics of its consumption are available, hence it may be assumed that a much larger amount of the native article is used than is shown in the customs returns.

Importations of Apothecary's Ware and Chemicals into the South African Repulic increased in value from £98,473 in 1895 to £254,024 in 1896, and to £294,856 the following year. Cyanide of potassium is included under the above heading, and it is due, probably, to the growing demand for this chemical, which is used in the extraction of gold, that the value of the imports has so increased of late years. Germany supplied cyanide of potassium to the extent of 924 tons in 1895, and the decreased amount of 382 tons in 1896, while in 1897 apparently the German article was not wanted at all, for none appears to have been imported during that year.

The Imports of Chemicals used in the manufacture of fertilisers at Charleston (U.S.A.) last year amounted to 121,377 tons, value 840,388 dollars. This was an increase of 13,549 tons on the imports of the previous year, valued at 29,447 dollars, the total import for 1897 being 107,828 tons, valued at 810,941 dollars.

DENTAL NOTES.

Inexpensive Crowning.

A cheap method of crowning is to place a loop of platinum wire round the root and take an impression with the loop in position, then cast in plaster and remove impression material, fit a plain backed tooth to model, squeeze pins to loop, invest, and solder with silver solder, afterwards cleaning and replacing on model. Next build up the masticating portion of crown with amalgam, forcing the amalgam well down into the root; polish when hardened. Roots too badly decayed to crown by any other system can be saved by this method.—*American Journal.*

Platinum Solder.

The platinum should be rolled out into a ribbon as thin as possible and about one-eighth inch in width. Pure gold is melted and the platinum ribbon fed into it. After that has been done, the resulting mass should be rolled out as thin as possible, cut into ribbons, and re-melted. This repetition of the melting insures an even distribution of the platinum through the mass. It should then be rolled down to a suitable thickness for use. The proper proportion by weight of platinum or gold is readily determined. For example, if 20 per cent. solder is desired, it will be platinum, 6 grains; gold, 24 grains. Thirty per cent. : platinum, 9 grains; gold, 21 grains A Knapp blow-pipe will be necessary for the making and use of platinum solders, the gas blow-pipe being insufficient for anything above 10 per cent.—*Dental Review.*

Treatment of Cavities.

According to Ottolengui, in *Items*, crystal gold should never be allowed to come to the surface in cavities occupying the masticating portions of teeth. Dr. Pearsall writes in the *Quarterly Circular* that Canada balsam dissolved in benzole is better for fixing porcelain inlays than a thin film of osteo cement, providing an accurate fit is obtained, by grinding a circular rod of porcelain to fit into the cavity.

To Repair a Broken Pin in a Logan Crown.

Drill a small hole through the piece of pin remaining in the crown, pass a piece of wire through, twist the ends together, and compress with pliers, run a little solder into the spaces between the wires and down to the old pin end. A new pin is formed, to all intents as strong as, and having a better hold in the cement than, the original. In twisting up the wire, hold the pin with small-nosed pliers, so as not to loosen its attachment in the crown.

Repairing a Gold Crown.

Should a hole be made in a gold crown when finished, do not attempt to solder in the ordinary way, but paint the crown all over the outside with whiting, mixed thin, except around the hole which is to be repaired; fill this with a plug made from gold-foil, touch it with a drop of borax water, and put a bit of gold solder inside; heat it with blow-pipe.

How to Make a Temporary Crown in a Hurry.

Grind off the crown of tooth to gum margin, a little below on labial aspect, just as for a logan or Richmond. Select a plain vulcanite tooth approximately as to size and colour, grind so as to make a fair joint at contact with root. Put a German silver or copper bar in root canal roughened on portion exposed from canal. Place some warm wax on the vulcanite tooth and push to place. Remove all at once. Trim the wax as you desire the contour of the finished crown to be, being careful not to mar the part showing imprint of root. Now take a little cone-shaped piece of wood (well soaped) with the pin point protruding, and stick it into the lingual surface of the wax. Then mix some quick-setting impression plaster in a spoon, imbed the crown in same, building the plaster up around the inverted cone. Hold the spoon over alcohol flame; plaster soon sets. Remove the cone and you have a funnel-like opening leading down to the wax, which can be washed out with hot water. Heat the spoon until the plaster becomes hot and dry, then pour in some Melotte's metal and immediately take a piece of wax and force the fusible metal down into the mould so that it will completely fill the space. Cool and finish with disc on engine. You have now a crown closely and perfectly adapted to the root; it can be set with gutta percha, and will last till you have time to make one out of the noble metals.—*Ohio Dental Journal.*

NEW REMEDIES.

Silver Orthophosphate in Gonorrhœa.—Silver acid-orthophosphate is thus prepared: Silver phosphate is dissolved in an equal quantity of orthophosphoric acid previously evaporated on the water bath to a syrupy consistence. On cooling, the resulting silver acid phosphate forms a vitreous mass, which again softens on warming; whilst in the melted state it is dissolved by adding it very gradually to water previously rendered slightly acid with phosphoric acid; in this manner solutions containing several parts per cent. may be obtained, which are perfectly stable. Spretska (*Prag. Med. Woch.*) finds that this salt, even in very dilute solution, has a marked germicidal action on gonococcus. In practice, injections containing 0 25 to 0 5 per mille of the salt are used at first, the strength being increased to 0 25 or 0·5 per cent. In most of the acute cases a cure is effected in six days, with a mean of seven or eight injections, and it is also very serviceable in chronic cases. Although generally extremely efficacious, cases are sometimes met with which are as intractable to this as to other forms of treatment.—*Rev. Med. Pharm.*, 5, 292, after *Med. Mod.*

Nirvanine.—This body, which has been introduced by Einhorn and Heinz is a substitute for the salts of orthoform, the relative insolubility of which render them inconvenient for use in the form of hypodermic injections. It crystallises from alcohol in white prisms, which melt at 185° C. It is readily soluble in water, giving a neutral solution. A 5 per cent. solution does not occasion any irritation in the most sensitive tissues, but produces a partial anæsthesia; a 1 per cent. solution has marked bactericidal action. Although its anæsthetic action is not so intense as that of cocaine, nirvanine is to be preferred to that alkaloid in dental cases on account of its freedom from toxic action.—*Pharm. Cent.*, 39, 901.

Orphol (Bismuth β-Naphtholate).—This combination, containing bismuth oxide, 80 per cent., and β-naphthol, 20 per cent., is introduced as a remedy in affections of the intestinal canal, and especially for infantile diarrhœa. It is a brown odourless powder, insoluble in water, which is decomposed into its constituents in the intestines. Whinna finds that it effectively arrests all fermentative action. Infants may take from 20 to 30 centigrammes, suspended in a little water or syrup and repeated as may be required. For adults a dose of 30 to 70 centigrammes may be given from five to eight times in twenty-four hours.—*Nouv. Rem.*, after *Klin. Therap. Woch.*

Hydrastis Canadensis in Hæmoptysis.—Hydrastis is an accepted remedy in the immediate treatment of pulmonary hæmorrhage. Gabrilovitch finds that the continued use of the drug prevents a recurrence. Under the influence of hydrastis, hæmoptysis disappears completely or almost entirely, even in the most predisposed. The fluid extract is the preparation prescribed. During the first two weeks 30 minims three times daily is the dose; in the third week the same quantity is taken twice daily; in the fourth, only one such dose is taken per diem, and afterwards the dose is taken three or four times weekly. The only point requiring attention is to watch the action of the bowels during the treatment, since the astringent drug may cause constipation, which must be regulated by the usual remedies.—*Bull. Gén. de Thérap.*, 137, 348.

Calomel for Hæmorrhoids.—Ackerblom treats hæmorrhoids by the local application of calomel, either as a dusting powder or in the following ointment: Vaseline, lanoline, aa 15 Gm.; calomel, 5 centigrammes. To be applied after thorough washing with tepid water night and morning.—*Bull. Gén. de Thérap.*, 137, 394, after *Bull. Med.*

Naphthol-Eucalyptol.—If equal molecular weights of α- or β-naphthol are melted with eucalyptol, definite chemical compounds result which have an intensely aromatic odour and strongly bitter taste. The new products are employed in the antiseptic treatment of wounds and in skin diseases. *A*-naphthol eucalyptol separates in beautiful needles from hot glycerin, softens above 40°, and melts between 73° and 75° C. to a clear fluid. β naphthol-eucalyptol commences to frit at 30° C., and melts completely at 50° C. Both compounds are volatile in aqueous vapour and are insoluble in water, but are readily dissolved in the ordinary organic solvents, also in olive oil and in hot glycerin.—*Pharm. Zeit.*, 44, 23.

LETTERS TO THE EDITOR.

Mr. Jesse Boot on the Necessity of Qualification.

Sir,—You have done me the honour of mentioning my name in your Journal (May 13, p. 443) in connection with my remarks on the Lord Chancellor's Bill. I take it that your Journal is not so blindly antagonistic to accomplished facts in connection with the business to deny me the justice of allowing me to state in your columns that supposing the present Pharmacy Acts to be inconclusive in that respect, I thoroughly welcome legislation that will compel every chemist's and druggist's shop, whether belonging to a company or otherwise, to be wholly and solely under the control of a registered chemist or manager. I will go further than that, and state that I should be equally glad to welcome that legislation should enforce that the work of dispensing medicines should also be confined in every shop to a registered chemist, but of course it must be an all-round regulation. Just as there is a distinction between legitimate companies and one-man companies so there are distinctions among private chemists. There are undoubtedly some private chemists who allow the work of dispensing medicines, and in some cases the sale of poisons, to be carried out by their unqualified assistants, and even apprentices. It should certainly be made impossible for poisons to be sold except by a registered chemist, and I would be prepared to support legislation enacting that the work of dispensing medicines should come under the same regulations, but on the understanding that it applied equally to companies and private chemists, and that no partiality be shown by the Pharmaceutical Society, by prosecuting companies under such regulations and not interfering with private chemists who infringed them.

Nottingham, May 15, 1899. Jesse Boot.

Why do not More Subscribe?

Sir,—May I, as an old subscriber, trespass a little on your valuable space and offer a few suggestions on the oft-lamented facts—that the Society is not so representative as it should be; that it fails to retain as subscribers so many of those who pass the qualifying examination; and that so many now in business are still outside its fold. Now the only way to obviate this unfortunate state of affairs is to offer for the guinea something that shall be to the business advantage of everyone possessing it, something which cannot be obtained without subscribing. First of all, a more distinctive title than "chemist and druggist" is required, for that is entirely worn out as a protection now. There are stores, grocers, unqualified men, and cash chemists, who can all fit up their establishments so like the chemist that there is scarcely any difference at all. The Pharmaceutical Society being recognised by Government as the qualifying body, everyone belonging to it ought to bear the pharmaceutical title, and every man who passes the qualifying examination ought to be elected on his going into business a pharmaceutical chemist and allowed the use of the title so long as he paid the yearly guinea and, say, a minimum subscription of 5*s.* to the Benevolent Fund. As affairs now are, whenever any mistake is made it is always put down to the chemist and druggist, no matter where the article came from, so long as there are bottles on the shelves; whereas if every qualified man could insist on his pharmaceutical distinction the public would learn the difference. The bestowal of the pharmaceutical title would at once dispose of the jury difficulty, and this alone would be worth the money. A much more handsome and conspicuous certificate is required than that given for the qualifying examination, which at present looks as if the Society had tried how little could be done for its possessor. Does any other Society give so poor an advertisement? Any proprietary medicine show-card would put it to shame. Something is required which may be hung in the shop, or put in the window, attractive to the eye, of which the possessor might be proud, and under which, if wished, might be put a line or two stating that only those having such diplomas were recognised by government as being properly qualified chemists. Many years' practical experience have fully proved that one examination is quite sufficient for public safety, and the Minor has for a long time been harder than the Major at first was, and there are yet many pharmaceutical chemists who never passed any examination at all, so there would not be any very great injustice in giving the pharmaceutical title to all who pass the Minor when they go into business, and the passing away of one generation would make all straight again. By all means let there be two examinations for those who choose

to go in for them, but passing the second should carry with it some other title, such as bachelor of pharmacy or anything else thought appropriate. There is so little that can be done by the Society for its members (for instance, it cannot regulate prices as a trade union, nor prevent grocers and others selling all that chemists should, except a few poisons, nor prevent stores cutting down profits to nearly vanishing point) and so, for its own sake, it should make the utmost use of the little power it does possess, and stamp all who are in business and subscribe as belonging to itself, by making them pharmaceutical chemists; for surely, in common justice, a pharmaceutical qualification should give a pharmaceutical title with its one privilege. When that is done, the Society may reasonably expect to retain most of those who pass, and to attract many now outside who have found that as things are they can do quite as well without subscribing as with, and be a guinea richer at the year's end. I have written this, not for the sake of finding fault, but because our Society should be a thoroughly united and representative body, a power in the land, in fact, a sort of chemists' trade union, and some such alteration is needed to make it so. Electing all as members was a good idea, but not enough.

Bruton, Somerset, May 4, 1899. G. C. Osborne.

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Botanical (E. J. I.—28/14).—*Corydalis bulbosa.*

Modelling Composition (A. T.—28/26).—See reply to J. H. in this issue.

Chimney Cleaner (O. J.—29/3).—A mixture of sulphur, 2, and common salt, 1, is used for the purpose.

Fixing Letters to Windows (O. J.—29/2).—Make a paste of suitable consistence with dry white lead and japanners' gold size.

Institute of Chemistry (J. H. B.—28/34).—Full particulars of the examinations for the Fellowship of the Institute will be sent by the Secretary on application to him at 30, Bloomsbury Square, London, W.C.

Sale of Cyanide (C. G.—28/18).—If the cyanide is supplied by wholesale dealers strictly in the ordinary course of wholesale dealing—that is to say, to retail dealers and not to consumers—the provisions of Section 16 of the Pharmacy Act, 1868, will apply.

First Examination (G. H. T.—28/15).—Inasmuch as the First Examination of the Pharmaceutical Society will be abolished in August, 1900, there will be no occasion to publish a syllabus of the subjects to be taken subsequent to that date. Each of the examining bodies included in the list at page 407 publishes its own syllabus, and you should consult one of those.

Dentists' Modelling Wax (J. H.—28/10).—It is simply pure beeswax, preferably obtained from virgin combs. It should be well worked or rolled before using. A good modelling compound is prepared by melting stearin, 4, on a water bath, then adding gum kauri, 8, in small quantities at a time, followed by finely sifted French chalk, 14. Add the chalk gradually and stir till cool. The mass may be coloured with carmine, if desired.

Egg Powder (E. A.—28/13).—As you probably know, most of the so-called egg-powders are destitute of egg. They are simply cornflour, coloured and flavoured. We do not recommend the sale of such fictitious preparations by pharmacists. They are little better than frauds. The following recipe will give a powder of the nature you describe: Cornflour, 32; turmeric, 1; sugar, 4; powdered tragacanth, 2. Mix, and flavour with a little vanilla or lemon.

Stamping Glass (C. H. 28/22).—The "ink" is probably prepared by mixing silver bronze powder with japanner's gold size.

Book on Materia Medica (A. H. R.—28/21).—The best text book at present available for Major students is Maisch's 'Materia Medica,' but a new one by Professor Greenish will be published next week.

Book on Wild Flowers (J. R. S.—28/31).—Get Shirley Hibberd's 'Field Flowers' (Groombridge, 4*s.*), which contains useful coloured illustrations.

Medical Preliminary Examination (H. M.—28/32).—Write to the Registrar of the General Medical Council, 299, Oxford Street, London, W.

Register of Chemists and Druggists (E. F. E.—186/36).—We agree with you that the book would be much more useful generally if it included a supplementary list of names arranged under towns, and if it could be indicated whether a registered person is in business on his own account or not, but there is no prospect of such an improvement being effected at present.

Jacob Bell Scholarship Regulations (F. C. H.—28/25).—We should advise you to do some field work in botany, in addition to studying such a work as Scott's 'Introduction to Structural Botany,' making use of the official drugs as examples of the external structure of plants, and familiarising yourself with the meaning of all the botanical terms used in the Pharmacopœia.

Vinum Ipecacuanhæ (H. W.—29/5).—The preparation official in the 1867 B.P. was made by macerating 1 oz. of the root with 1 pint of sherry; the 1898 wine is prepared by mixing 1 fl. oz. of liquid extract (virtually 1 in 1) with 19 fl. oz. of sherry. So far as the proportion of the drug employed is concerned, therefore, the preparations are practically identical, but exhaustion of the alkaloidal contents is more thorough by the process now official and the wine is also standardised.

Iron for Cage Birds (W. H.—28/19).—If by carbonate of iron you mean the oxy-carbonate, the old "ferri carb. precip.," your informant is probably correct, since—as it is composed almost entirely of ferric oxide—it would be practically inert. We should be disposed to try the admixture of a little "ferri sulph. exsicc." with the bird pepper. It is well known that birds and insects which occur on geological formations rich in iron have much darker and more brilliantly marked colours than the same species occurring elsewhere. It is probable, therefore, that the iron would have a beneficial effect if administered as you suggest.

Weir-Mitchell Diet (S. W.—27/27).—We do not know of any special Weir-Mitchell diet for consumption. What is probably meant is the Weir-Mitchell diet as used for neurasthenia, etc., and very suitable for a wasting disease, such as consumption. It consists in the administration of abundance of food containing proteid and fatty elements, such as meat, milk, eggs, while a considerable amount of rest is at the same time insisted upon. The quantity of food which some patients will tolerate is astonishing. Refer to what Mr. J. A. Gibson says on this point in the *Pharmaceutical Journal* for February 4 last.

Cheap Ginger Wine (R. F.—28/30).—Bruised ginger, 12 oz.; sugar, 28 lb.; water, 15 gallons; raisins, 2 lb.; Seville oranges, 6; lemons, 3. Peel the oranges and lemons. Boil the ginger, the peels, and the sugar with the water for half an hour, making up that lost by evaporation; pour on to the raisins, previously stoned. When cool add the juice of the fruits and cream of tartar 4 oz. Strain into a cask and then add a small piece of compressed yeast, allow to ferment for five or six days, then bung up tight and set aside in a cool place for a month or six weeks.

Perfuming Beeswax (E. H. B.—28/28).—Possibly a very minute trace of a mixture of equal parts of petit-grain and bergamot would give the odour. Good pure beeswax, however, needs no additional perfume, as it possesses a very delicate fragrance of its own. That some such fraudulent addition is made to spurious beeswax, we are aware, having met with specimens of coloured paraffin which had a very fragrant odour. In their recent (April) report, Messrs. Schimmel, of Leipsic, state that the impression prevails that the empyreumatic wax oil is fragrant and may be used for the purpose, but they point out that this is incorrect, and that wax oil has an unpleasant odour.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Sterilisation of Water. MM. Marmier and Abraham have studied the methods of rendering drinking water bacteriologically pure, with a view to supplying such pure water to towns on an industrial scale. The municipal authorities of Lille authorised them to instal an apparatus for the production of ozone, in order to find out by experiment what was the value of that substance when applied to the purification of water by means of apparatus and methods specially devised for the purpose. Experiments made from December 10, 1898, to February 12, 1899, have already led to certain conclusions, which are set forth by A. Calmette, one of the experts appointed on the Water Commission by the town of Lille. The efficacy of the ozonising apparatus is unquestionable, and the method is superior to all others that have been tried, and is suitable for dealing with large quantities of water. The apparatus itself is sufficiently strong, and its output is regular enough to justify its use in industrial operations. All the pathogenic or saprophytic microbes met with in the waters under experiment were destroyed by passing the waters through the ozonising apparatus. A few of the *Bacillus subtilis* alone survived the ordeal. One only of these germs was found capable of remaining in 15 C.c. of water that had been treated with ozone in the proportion of 6 milligrammes per litre of air. A concentration of 9 milligrammes per litre reduces the number to 1 in every 25 C.c. of water so treated. It is important to note, however, that the *B. subtilis* is harmless to man and to animals, hence the weaker concentration of ozone is sufficient for the purpose. The water, moreover, is weaker in organic matter than ordinary drinking water, and is less prone to ulterior pollution, and is more agreeable to the palate by reason of the process of aëration which it undergoes. The Water Commission has recommended the adoption of the process by the authorities of Lille.—*Annales de l'Inst. Pasteur*, **13**, 344.

Proteolytic Enzyme of Nepenthes. A further series of experiments by Professor S. H. Vines confirms his previous statement of the remarkable stability of the enzyme of the pitcher plant. The enzyme is in all probability derived from a zymogen present in the gland-cells. It is essentially tryptic in its character—probably a feature of all vegetable proteolytic enzymes—and closely resembles that of the germinating seed, but it is more rapid and energetic in its action, and more stable in its nature.—*Annals of Botany*, **12**, 545.

Pure Solanine. Attributing the different formulæ for solanine obtained by previous workers to the decomposition of the alkaloid through defective methods of extraction, P. Cazeneuve and P. Breteau have reviewed the subject. They obtain the pure alkaloid by bruising shoots of potato, not exceeding 10 Cm. in length, with half their weight of slaked lime. The mass thus obtained is dried in the air, then extracted with cold alcohol (90 per cent.). The alcoholic extract is distilled *in vacuo*, the crystals which separate from the syrupy residue are washed with petroleum ether and ether, and then recrystallised from alcohol. In this way about 0·1 per cent. of light, absolutely colourless, silky needles are obtained, barely alkaline to litmus, melting at 250° C., corresponding to the formula $C_{28}H_{47}NO_{10}2H_2O$. When hydrolysed with hydrochloric acid, it splits up into solanidine, which is a crystalline body, soluble in ether, melting at 190° C., and a reducing sugar. This pure solanine differs from those previously described in giving only the faintest yellow colour with sulphuric acid; with nitric acid it gives a colourless solution, which slowly develops a faint rose tint, and it is dissolved without colour by hydrochloric acid. The solanines previously described give intense colour reactions with all these reagents.—*Comptes rend.*, **128**, 887.

Composition of Wool-fat. Wool-fat may be separated by solvents into a soft semi-fluid mass or soft wool-fat, and a waxy portion or wool-wax. L. Darmstaedter and T. Lifschutz have isolated from the soft portion myristic and carnaubic acids, carnaubylic and cerylic alcohols, and another alcohol resembling isocholesterol in reactions, but differing from it in crystalline form and in composition. It melts at 120°-121° C. *Wool-wax* has yielded two new acids—lanocerinic acid, $C_{30}H_{60}O_4$, crystallising in scales which melt at 104° C., and lano-palmitic acid, $C_{16}H_{32}O_3$, melting at 88° C.—*Journ. de Pharm.* [6], **9**, 360.

Toxalbumin from Eel's Flesh. The presence of a toxalbumin in the blood of the eel was demonstrated in 1888 by Mosso. E. Bénech now states that the flesh of the fish, carefully freed from blood, also contains a toxalbumin, soluble in water, precipitated by saturated ammonium sulphate solution, slightly precipitated by acids, but not thrown out of solution by magnesium sulphate. Four centigrammes of the dry toxalbumin, dissolved in 8 C.c. of physiological salt solution, killed a rabbit in six hours when injected into the marginal vein of the ear. This body is very sensitive to the action of heat when in solution; after exposure to a temperature of 40° C. for fifteen hours it loses its toxicity completely.—*Comptes rend.*, **128**, 833.

Varieties of Hæmatin. The composition of hæmatin in the blood of animals of different species, is not, according to P. Cazeneuve and P. Breteau, the same. Having examined that derived from the blood of the horse, the sheep, and the ox, different analytical figures were obtained from each. That from the horse was richest in nitrogen, containing 10·11 per cent., while ox hæmatin gave only 9·02. Sheep hæmatin contained most iron, 10·65 per cent. against 8·81 per cent., in that from ox blood, and 9·38 from horse blood.—*Journ. de Pharm.* [6], **9**, 320.

Constituents Cade Oil. J. Troeger and P. Feldman find that cade oil contains practically no cadinenes, the fractions distilling between 260°–280° C. not affording any crystalline hydrochlorides, and the optical rotation not being sufficiently markedly lævogyre for the presence of much of those bodies. The chief constituent of the oil is probably an optically inactive sesquiterpene, $C_{15}H_{24}$, a lemon yellow oil boiling between 250°·260°. —*Archiv*, **236**, 692.

Examination of Exotic Plants. In the report of the Dutch Botanical Gardens at Buitenzorg it is stated that about a thousand different plants have been examined for active principles and ethereal oils. Prussic acid was detected in the leaves of *Passiflora laurifolia*, *P. hybrida*, *P. princeps*, and a species of *Tacsonia*, also in the Rubiaceous plant *Electronia dioica*, and in *Prunus javanica*. In the leaves of the last two it occurs as benzaldehyde-cyanhydrin, while benzaldehyde free from hydrocyanic acid occurs in the leaves of *Homalium tomentosum*, and in two species of *Menecylon* from Banka. Methyl salicylate was met with in no less than 107 plants. —*Pharm. Ztg.*, **44**, 107.

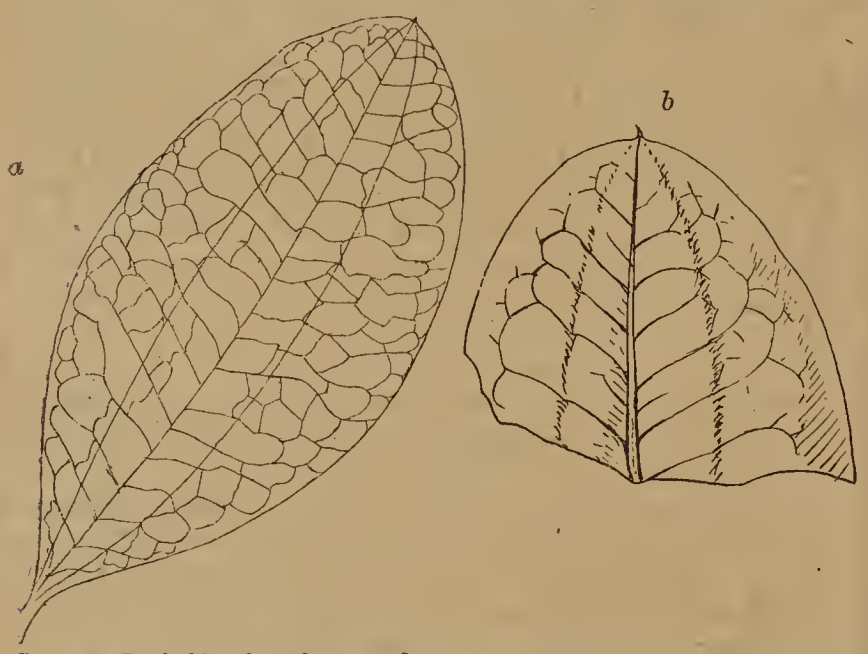
PRACTICAL PHARMACOGRAPHY.

COCÆ FOLIA.

Coca leaves, E. Feuilles de Coca, F. Coca-Blätter, G. Erythroxylon, U.S.

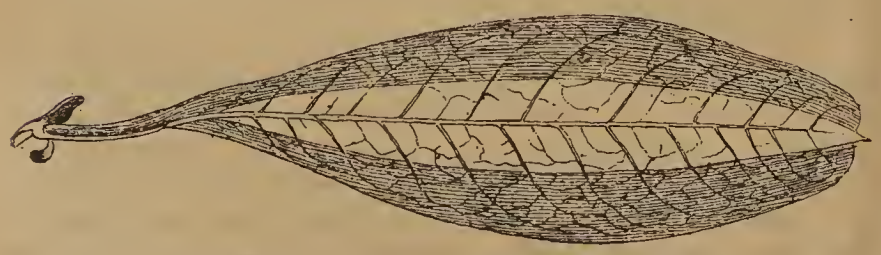
MACROSCOPIC CHARACTERS.

The coca leaves official in the British Pharmacopœia are those cultivated in Peru and Bolivia, which are also known in commerce as Truxillo and Huanuco coca respectively. According to the description given in the Pharmacopœia the Bolivian (or Huanuco) leaves vary usually from three and a half to seven centimetres in length, and from twenty-five to thirty-five millimetres in breadth. They are brownish-green in colour, oval, entire, and glabrous, the upper surface bearing a distinct ridge above the midrib. On the under surface near to the midrib and on either side of it a curved line is almost always distinctly visible. The midrib itself is prolonged into a minute horny apiculus, which, however, is frequently broken off. The leaves possess a faint but characteristic odour, and a slightly bitter taste, which is succeeded by a sensation of numbness. The



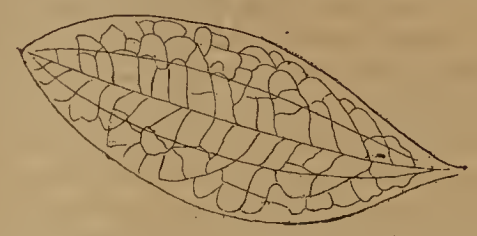
COCA.—*a*, Leaf of *Erythroxylon coca*, Lam., var. *bolivianum*, Burck. *b*, Apex of leaf, showing apiculus. (After Burck.)

Peruvian (or Truxillo) leaves are somewhat smaller, narrower, and more fragile than those imported from Bolivia; they are pale green in colour and do not exhibit a prominent ridge on the upper surface of the midrib, nor such distinct curved lines on either side of the under surface. The leaves of these two varieties vary much in commerce, in size and in quality, the average size of the Bolivian



COCA.—Large leaf of *Erythroxylon coca*, var. *novo-granatense*, Morris.

being about 5 Cm. long by 2½ broad, and of the Peruvian about 4½ Cm. long by 2 Cm. broad. The midrib in the Bolivian leaves is usually of a reddish tint on the under surface and in the Peruvian of a pale colour. Cultivated coca leaves are also imported from Ceylon and Java. Those from Ceylon usually consist of the Bolivian variety, but those from Java differ from the ordinary Bolivian leaves in having a paler green colour, and in tapering more in proportion towards the apex. From the Peruvian leaves they differ in having a distinct ridge above the midrib and in tapering less to the base, being, in fact, intermediate in character between the Bolivian and Peruvian leaves (see Figs. 1, 2, 3). The Bolivian leaves are usually referred to *Erythroxylon coca*, Lam., var. *Bolivianum*, Burck; the Peruvian to *E. coca*, var. *novo-granatense*,

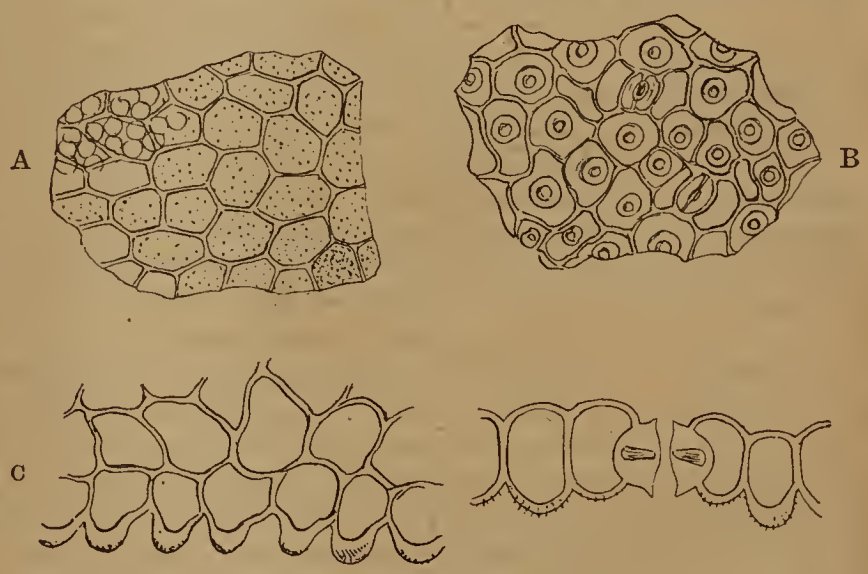


COCA.—Leaf of *Erythroxylon coca*, var. *spruceanum*, Burck, natural size.

Morris; and the Javanese to *E. coca*, Lam., var. *spruceanum*, Burck. The Javanese leaves are not mentioned in the Pharmacopœia, possibly because the alkaloid isatropyl cocaine, which is stated by Liebreich to be a poisonous base, has been found in them. Neither the Ceylon nor the Java leaves are as rich in cocaine as the Bolivian and the Peruvian kinds, although richer in total alkaloids in some samples, and are, therefore, not preferred for pharmaceutical preparations. The quality of the leaves depends much upon the time they have been kept and how far they have been subject to atmospheric moisture, or to imperfect drying. The freshness of their appearance and the degree of numbing sensation experienced on tasting the leaves may afford some indication of their activity. The Peruvian leaves do not all present the somewhat truncate appearance indicated in Fig. 2, this character varying on the leaves of the same twig, nor are they uniformly marked with the two longitudinal lines near the midrib on the under surface.

MICROSCOPIC CHARACTERS OF COCA LEAVES.

Epidermis.—The epidermis of the upper side seen in surface view consists of polygonal cells covered with a somewhat granular

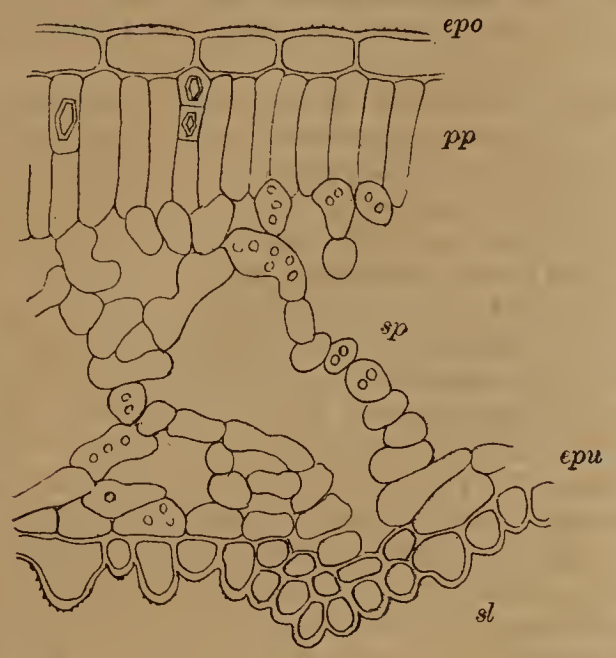


COCÆ FOLIA.—*Erythroxylon coca*.—A, Upper epidermis in surface view, showing granular cuticle and underlying palisade parenchyma. B, Under epidermis in surface view, showing ringed appearance due to papillæ, also the small stomata. C, Under epidermis in transverse section. D, Stoma in transverse section. (A D after Tschirch, B C after Moeller.)

looking cuticle. In transverse section the cells are tangentially extended in one row and are free from stomata. The epidermis of the under side is also seen in surface view to consist of polygonal cells; but they are rather smaller than those of the upper surface,

and in the middle of each is a double ring; stomata are abundant they are small, possessing two guard cells, but are unaccompanied by subsidiary cells.

In transverse sections the cells of the lower epidermis are, for the most part, slightly elongated tangentially, and the outer walls project in the form of small papillæ, which are the cause of the double rings seen upon the cells when viewed on the surface. The guard cells of the stomata are slightly depressed, and are not papillose. The epidermal cells covering the midrib on the under surface are extended along the nerve and are not papillose.



Cocæ Folia.—*Erythroxylon coca.*—Transverse section of leaf. *epo*, Upper epidermis. *epu*, Under epidermis. *pp*, Palisade parenchyma. *sp*, Spongy parenchyma. *sl*, The characteristic surface line. *c*, Crystal of calcium oxalate. (After Tschirch.)

Mesophyll.—Immediately beneath the upper epidermis is one row of palisade parenchyma; between this and the lower epidermis is situated loose spongy parenchyma. The two characteristic longitudinal lines upon the lower surface of the coca leaf are due to differences in the structure of the epidermis and the subjacent mesophyll; the epidermis is here slightly raised, and consists of somewhat smaller cells which are not papillose, and the underlying tissue is made up of a few collenchymatous cells closely compacted together.

Coca.—*Erythroxylon coca.* Peruvian variety.—Transverse section through midrib of leaf, showing semicircular arrangement of the vascular bundles and absence of the ridge on the midrib. (After Godfrin.)

The midrib contains a vascular bundle in which the xylem is arranged in radial rows, separated by narrow medullary rays passing into the phloem situated on the under side. The whole bundle is surrounded by a sheath of sclerotic fibres and is semicircular in the Peruvian leaves, but is somewhat flattened in the Bolivian variety.

Coca.—*Erythroxylon coca.*—Bolivian variety. Transverse section through midrib of leaf.

In Bolivian coca leaves the midrib on the upper surface is developed into a well-marked ridge or keel which consists of collenchyma. The cells of the epidermis over the midrib are extended longitudinally; but over the lateral veins they are of the same character as over the rest of the leaf.

Cocæ Folia.—*Erythroxylon coca.*—Transverse section through midrib of Bolivian variety. *k*, Keel. *v*, Vascular bundle. *bs*, Sclerotic bundle sheath. *lv*, Lateral vascular bundle. *ph*, Phloem.

Cell Contents.—These consist of chlorophyll, starch, and tannin in special receptacles contiguous to the palisade parenchyma. Solitary crystals of calcium oxalate are numerous in both parts of the mesophyll and are found in large quantities in chambered fibres accompanying the sclerotic sheaths of the veins.

Distinctive Characters.—The absence of hairs; the papillose under epidermis; the structure of the longitudinal lines; the absence of cluster crystals and, in Bolivian coca, the presence of the keel along the upper side of the midrib. In the Peruvian leaves the semicircular vascular bundles in the midrib as compared with the more flattened ones in the Bolivian leaves.

AUSTRALIAN INDIGENOUS VEGETABLE DRUGS.*

BY J. H. MAIDEN.

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(Corresponding Member of the Pharmaceutical Society of Great Britain.)

PART I.

Besides dealing with the indigenous substances of vegetable origin which possess medicinal properties, or are supposed to do, I propose to take cognisance of some active principles which have been discovered in genera which also have representatives in the flora of Australia.

My notes are arranged in botanical sequence. I have put forth a number of suggestions for research, and if any chemist (analytical or pharmaceutical) or medical man decides to undertake any of the work I will endeavour to assist him in getting material.

I am cultivating as many exotic and indigenous plants in the Botanic Gardens as possible, while my collection of herbarium specimens of such plants is very extensive.

I would suggest reference to my paper on "Plants reputed to be Poisonous to Stock in Australia," in the 'Agricultural Gazette' for January, 1897, and also to my Presidential Address to Section C, Brisbane meeting of the Australian Association for the Advancement of Science, in which I have made a number of suggestions to those interested in research on our native drugs.

I have only referred to gums, etc., and oils; these may be separately dealt with as a matter of convenience.

In regard to "New Remedies," it will be well to remember the judicious remarks of Sir Joseph Hooker in his introductory essay on the Flora of Australia, appended to the 'Flora of Tasmania.'

"I have not alluded to pharmaceutical plants; such may exist, and multitudes of the weeds, seeds, and roots of Australia will no doubt enjoy a more or less substantial reputation as drugs for a period, and then be consigned to oblivion. This is the pharmaceutical history of the plants of all countries that have long been inhabited by civilised man, and Australia will form no exception to them, the fact being that of the multitude of names of plants that appear in pharmacopœias, the number of really active and useful plants is extremely small."

Queensland is by far the richest of the colonies in plants concerning which medicinal properties have been recorded (and a Queenslander, Dr. T. L. Bancroft, deserves the credit of having made the most valuable experiments in regard to the physiological effects of them); but the great majority of these will be found to be also common to India and the Archipelago, and to have been employed by the natives of those countries.

With the exception of some plants not endemic in Australia, which have already been utilised by dwellers in older countries, most of the plants of this continent reputed medicinal have been inquired into only when their true botanical positions were assigned. We are aware that certain properties are possessed by plants belonging to certain genera and natural orders; when an Australian plant is found to belong to such an order or genus, we can usually make a sagacious surmise as to its properties. The science of botany, therefore, may save the student of materia medica from groping about and testing plants in an empirical way. Nevertheless, there is still much empiricism in the study of vegetable materia medica, as it is only of comparatively recent years that the analyst and physician have recognised the mutual advantage of co-operation with the botanist. Yet comparatively few genera have been tested for medicinal properties throughout the world, so that the limit of the aid afforded us by analogy is easily passed.

* From the *Agricultural Gazette* of New South Wales.

The main work of the classification of our plants has already been performed, and the student of materia medica now can reap the advantage. There is no doubt that many observations of early colonists on the medicinal properties of plants have been lost to us through their lack of botanical knowledge, or lack of facilities to have plants named in which they are interested. And considering the circumstances under which many of the pioneers of this Colony worked, it becomes a matter of surprise to us, not that they have recorded so little, but that they have recorded so much, and in such detail, in regard to the economic properties of our indigenous flora. Of course drugs form but one group or division of substances which have been pressed into the service of man.

In fairness to ourselves we must confess ourselves very little indebted to the Australian aborigine for information as to the medical (or in fact any other) properties of our plants. The poor black chiefly takes interest in the vegetation as supplying him with his scanty food, or as affording him fibre useful in securing fish and other animal sustenance. As far as we know, the materia medica of the blacks is of a very meagre description, yet the acquisition of even such little knowledge as they are supposed to possess has been slow and difficult, inasmuch as persons who have lived in a state of nature with them have not been distinguished for either their medical or botanical knowledge. Civilised or semi-civilised blacks frequently know but little about their native materia medica, and the difficulty of obtaining reliable information is enhanced (as I have experienced to a slight extent) through the extreme willingness of blacks to impart information in regard to any plant which may be shown them, which impresses one with the thought that they are too willing to oblige. But perhaps this is mainly owing to asking them leading questions.

With the native materia medica of India, for instance, the case is very different. While some remedies are evidently used fancifully, and others for every disease to which the human frame is liable, much of the knowledge in regard to it is exact, the outcome of intelligent observation and inquiry, and the work of the European practitioner to classify the native drugs is a comparatively easy one.

There is an important matter which I have often heard referred to by medical men and others. It may be only an ingenious surmise, but I am inclined to think it is more than that, as evidence to prove its truth is from time to time brought forward. It is this: Native Australian drugs will probably be found peculiarly efficacious in the treatment of diseases, or modifications of diseases, which are co-extensive with their distribution.

The number of really useful New South Wales drugs, as far as our knowledge at present extends, is, as will be seen, but very limited, and in regard to these even, our knowledge lacks precision. It will thus be seen how little trodden has been this particular field of inquiry. Yet it is not too early even now to attempt to systematise such knowledge as we possess—this has been the object in view in submitting the few pages which follow.

MAGNOLIACEÆ.

Drimys aromatica, F. v. M., and *D. dipetala*, F. v. M.—"Pepper-bush."

These tall shrubs possess aromatic properties, particularly in the bark, which so closely resembles the Winter's bark (*Drimys winteri*), of the Straits of Magellan that it is said to be sometimes substituted for it. I sent barks of both these species several years ago to the Pharmaceutical Society of Great Britain, in whose museum no doubt European chemists may be able to examine them, since colonial ones do not appear to be desirous of taking the matter up.

The latest researches on the bark of *D. winteri* are by Arata and Canzoneri ('Gazzetta,' 18, 527, 'Journ. Chem. Soc.,' 58, 405). O. Hesse has also worked at the bark and leaves of *D. granatensis* ('Annalen,' 1895, 286, p 369; 'Journ. Chem. Soc.,' 70, 62).

D. aromatica occurs in Tasmania, Victoria, and Southern N.S.W.; *D. dipetala* in coastal N.S.W. and Queensland.

MENISPERMEÆ.

Pericampylus incanus, Miers. (Syn. *Cocculus moorei*, F. v. M.)

The bark of the rhizome of this plant has a bitter taste. It contains an active poison which can be precipitated from a decoction by many alkaloidal reagents, but not by alkalies or their carbonates. The poisonous substance is apparently new and worthy of careful investigation by chemists. The physiological action it has upon frogs suggests that it might be a useful therapeutic agent; frogs affected by it remain quiet, apparently asleep, no convulsions occur, and the heart comes to a standstill in diastole. Neither motor nerves nor muscles are primarily affected. (T. L. Bancroft, M.B., in 'Proc. R.S., Qd.,' 8.)

Coastal New South Wales and Queensland.

Sarcopetalum harveyanum, F. v. M.

The stem of this plant has a bitter-sweet taste. An extract of it is very poisonous; in physiological action it behaves like *Pericampylus incanus*. There are two alkaloids at least in this plant; they can be separated in the following manner:—Make a decoction, to which add carbonate of ammonia until no further precipitation occurs; separate the precipitate, which is an alkaloid, whose salts have a bitter-sweet taste and physiologically little effect upon frogs. To the decoction now add tannic acid, which causes a precipitate of the active principle. (T. L. Bancroft, in 'Proc. R.S., Qd.,' 8.)

Victoria, New South Wales, and Queensland.

Stephania hernandiæfolia, Walp.

The root of this plant is bitter. An extract of it is extremely poisonous to frogs. These animals are affected by it in a most remarkable manner. After they have had the poison injected into a lymph-sac, they remain perfectly quiet until suddenly they are attacked with violent convulsions, which last one or two minutes, after which they become flaccid and have spasmodic contractions of all the limbs every moment or so, the contractions getting weaker and weaker until they cease. The heart continues to beat regularly for many hours and stops in full diastole. There is a great increase of secretion of the skin.

Frogs that have had less than a lethal dose become very irritable; there is a marked increase of reflex excitability. It is difficult, however, to make them jump; when one does so it lands upon its belly, and this causes a spasm. There is a loss of co-ordination of muscular movement.

If the brain of a frog be destroyed previous to poisoning with this substance, some convulsions appear, but they are not of so violent a kind as when the brain is intact.

The physiological action of this substance appears identical with that of picrotoxin, the active principle of *Cocculus*, but I failed to obtain picrotoxin from this plant, and found that the active principle was a totally different substance, apparently an alkaloid. (T. L. Bancroft, in 'Proc. Linn. Soc. N.S.W., [2], 4, 1063.)

At this point, Prof. E. H. Rennie and E. F. Turner took up the chemistry of the subject and read a paper "On the Poisonous Constituents of *Stephania hernandiæfolia*" before the Royal Society of S.A., 17, p. 186. They give a full account of their operations, and state: "It will be seen that the figures obtained by us for the substance from *Stephania* come well within the limits of those obtained from different samples of genuine picrotoxin. We have no doubt whatever, therefore, that the crystalline substance obtained as above described from *Stephania* roots is picrotoxin or a mixture of picrotoxin and picrotoxinin." See also some notes by the same authors in 'Proc. Aust. Assoc. Adv. Science,' 6, 277. The research is not complete, but there is, however, a very poisonous alkaloid present, which appears to have a yellowish colour. It produces in frogs gradual paralysis followed by violent convulsions and death.

Victoria, New South Wales, and Queensland.

NYMPHEACEÆ.

Brasenia peltata, Pursh. (Syn. *Cabomba peltata*, F. v. M.)—A "Water Lily."

The leaves are astringent, and have been employed in phthisis and dysentery in North America.

Victoria, New South Wales, and Queensland.

Nelumbian speciosum, Willd. (Syn. *Nelumbo nucifera*, Gaertn.)—"Pink Water Lily."

The milky viscid juice of the flower-stalls and leaf-stalks is used in India as a remedy against sickness and diarrhœa. (Endlicher, quoted by Bailey.) The petals of the flower are also stated to be astringent. It is commonly distributed in the warmer regions of Asia.

Queensland.

PAPAVERACEÆ.

Papaver horridum, DC.—"Native Poppy."

All parts of the plant have a slightly bitter acrid taste. An extract is very poisonous to frogs, *Hyla cærulea*, *Chiroleptes australis*, and *Limnodynastes salminii*, but in none of these frogs are there any tetanic spasms developed. *Hyla* developed tetanus after poisoning with morphine.

"I endeavoured to prepare morphine from an extract of this plant according to the method described by the British Pharmacopœia, but failed to get even a trace of that substance, or, indeed, of any other substance. Judging from this and from the physiological effect on frogs, it would appear that the active principle is not morphine. It is, however, quite as poisonous as morphine." (T. L. Bancroft, 'Proc. Linn. Soc., N.S.W.' [2], 4, 1063.)

In all the colonies except Western Australia.

CAPPARIDEÆ.

Polanisia viscosa, DC. (Syn. *Cleome viscosa*, Linn.)

Used by the aborigines to relieve headache. (Mr. H. W. Stone, quoted by Mr. Bailey.) It is also used in Cochin China as a counter-irritant, in the same way as sinapisms in Europe, and also as a vesicant; and in the United States the roots are said to be used as a vermifuge. In India the leaves boiled in ghee are applied to recent wounds, and the juice to ulcers. The seeds are occasionally given in fevers and diarrhœa. (Ainslie, Lindley.)

South Australia, New South Wales to Northern Australia, and Western Australia.

VIOLACEÆ.

Ionidium suffruticosum, Ging. (Syn. *Hybanthus enneaspermus*, F. v. M.)

Mr. F. M. Bailey ('Proc. Linn. Soc., N.S.W.,' 1883, p. 3) points out that the roots of this species are used in India in diseases of the urinary organs, and the leaves as an external application. Other species are used medicinally in various parts of the world, and there is no doubt that the Australian species possess medicinal properties. This particular species is widely spread over tropical Asia and Africa.

All the colonies except Victoria and Tasmania.

PITTOSPOREÆ.

Pittosporum undulatum, Vent.—"Native Laurel," "Mock Orange."

I am not aware that this plant is employed medicinally, but the following chemical investigation of the bark will be found inter-

esting, and may do something towards preparing the way for its utilisation :—

Pittosporine.—Glucoside of the bark and fruits of *Pittosporum undulatum*. The pulverised bark is extracted with hot alcohol, filtered when cold, mixed with an equal bulk of ether, filtered again, and evaporated. It is a whitish loose powder, sweetish at first, afterwards bitter and acrid ; dissolves in water and alcohol, not in ether ; froths with water, gives precipitates with acetate and sub-acetate of lead. Separates, by boiling with diluted acids, into sugar and a white substance, insoluble in water. (Mueller and Rummel, in Wittstein's 'Organic Constituents of Plants.')

Dr. Thomas Bancroft informs me that this genus is physiologically inert, or practically so.

All the colonies except South and Western Australia.

POLYGALEÆ.

Comesperma volubile, Labill.—"Blue Creeper."

The root is very aromatic, like true sarsaparilla root, and can be used as an alternative. (Stirling, in 'Proc. R. S. Vict.,' 1 [new ser.], 94.) The Shepherd's Wreath (*C. volubilis*), the roots of which, when freshly taken up, diffuse an agreeable though fleeting smell, of a very peculiar character. (W. Archer, in 'Proc. R. S. Tas.,' Dec., 1860.)

In all the colonies.

Polygala japonica, Houtt. (Syn. *P. sibirica*, Linn.)

See a note in 'Agric. Gazette,' 9, 602, as to the use of this plant in New England as a sudorific by Chinese.

Victoria to Queensland.

PORTULACEÆ.

Portulaca oleracea, Linn.—"Common Pigweed" or "Purslane."

This plant is a native of most warm parts of the world. It has been cultivated from very ancient times, and possesses antiscorbutic properties. The young shoots are sometimes put in salads, and the older ones are used as a potherb or for pickling.

It is better known as a food and as a forage-plant.

All the colonies except Tasmania.

MALVACEÆ.

Abutilon indicum, G. Don.

This species, together with many others of this natural order, possesses demulcent properties, and is used for that reason.

The Marshmallow (*Althæa*) belongs to this order.

Queensland and Northern Australia.

Adansonia gregorii, F. v. M.

Adansonine, a doubtful alkaloid, bitter, crystallising in needles, and with an odour resembling that of aloes or gentian, has been found in the bark of this species and of the bark of the African baobab (*A. digitata*). See Sohn, p. 5, also Duchassaing ('Pharm. Journ.,' 8, 89), where the bark of *A. digitata* is proposed as a substitute for quinine. See also Walz, 'Jahrb. f. Pharm.,' 24 ; Wittstein, 'Viertelj. sch. f. Pharm.,' 441.

Northern Australia.

Bombax malabaricum, DC.—The "Simool Tree," or "Malabar Silk Cotton Tree," of India.

The young roots are considered to have restorative, astringent, and alterative properties (Dymock), but Waring ('Pharm. of India') thinks the roots generally attributed to this species may belong to *Curculigo orchioides*, Gaertn.

Queensland and Northern Australia.

Hibiscus diversifolius, Jacq. (one of the Kurrajongs).

The native physicians of Fiji use the juice of the leaves to procure abortion. (Seemann.) I believe, however, that it is physiologically inert, or nearly so.

New South Wales and Queensland.

Sida rhombifolia, Linn. (Syn. *S. retusa*, Linn.)—"Queensland Hemp." Called "Paddy Lucerne" on the Richmond and Clarence Rivers, New South Wales

This herb is largely used by the natives of India in consumption and rheumatism. It is given as an infusion, and is said to promote perspiration ; the leaves are used as a poultice for snake-bites, and in cases of the stings of wasps and other insects. It contains a quantity of mucilage, which, no doubt, accounts for its use in diseases of the chest. ('Pharm. of India.') Its colonial name of "Jelly Leaf" is in allusion to its mucilaginous nature.

For full account of this plant, with an illustration, see 'Agric. Gazette' for August, 1894, p. 537.

South Australia ; New South Wales to Northern Australia.

Thespesia populnea, Corr.

The fruit abounds with a yellow viscid juice, which is a valued local application in scabies and other cutaneous diseases amongst the natives of Southern India, the affected parts being also washed daily with a decoction of the bark of the tree. ('Pharm. of India.')

Queensland and Northern Australia.

Urena lobata, Linn.

This common tropical weed possesses mucilaginous properties, for which reason it is used medicinally in India. In Brazil a decoction of the root and stem is used as a remedy for windy colic, and the flowers as an expectorant in dry and inveterate coughs, according to Mr. F. M. Bailey.

Queensland and Northern Australia.

TILIACEÆ.

Grewia polygama, Roxb.

This plant is used by the aborigines of North-Western Queensland as a remedy for dysentery. Mr. W. E. Armit states that on one occasion, having had to treat dysentery following on fever and ague, this plant was pointed out to him by a native as a sure remedy. He collected a quantity of leaves, and having made a pale, sherry-coloured decoction of them, he administered about two tablespoonfuls for a dose. Repeating this every four hours throughout the night, the sixth dose made a complete cure. "Since then," says Mr. Armit, "I have tried this remedy in scores of cases, and I have never known it to fail in any case, however serious. I have made it a rule to inform the carriers and travellers I meet of the cure they have always at hand, in case it may be required, and all are unanimous in extolling its truly magical properties." ('Journ. Linn. Soc.' [Bot.], 20, 69.)

Queensland and Northern Australia.

LINEÆ.

Linum marginale, A. Cunn.

A glucoside (*Linamarin*), bitter, odourless, and in silky needles, is contained in linseed (*Linum usitatissimum*) ; 2¼ lb. of the germinated seeds yielded 15 Gm. of the glucoside. (See A. Jorissen and E. Hairs, 'Journ. de Pharm.,' Anvers ; also Sohn, p. 61.) It is not likely that any body contained in linseed is not contained in the seed of our native flax (*L. marginale*).

All the colonies.

Erythroxylon australe, F. v. M.

Mr. Staiger finds that the leaves do not contain cocaine (the well-known alkaloid of *E. coca*), but they contain coca-tannic acid.

Queensland.

(*To be continued.*)

VISUAL OPTICS IN THEORY AND PRACTICE.—IV.

BY LIONEL LAURANCE.

Instructor of Visual Optics at the Official Classes of the Worshipful Company of Spectacle Makers.

When making out prescriptions the optician cannot be too careful to write them in such a manner that no necessary details are omitted and no errors made. Among the commonest mistakes that occur is leaving out the plus or minus sign in front of the number of a lens or leaving out the decimal point or leaving out the location of the axis of a cylinder. The requisite details are the sign and number of each lens, the size of the eye, and if a spectacle is needed, there must be given also the interpupillary distance, the height and set of the bridge, the kind of side and of bridge, and the material of frame. Frequently, also, the length of the side and the width of the bridge might be required, also the angle of the eye-pieces. If the frame be a pince-nez, the description of it as to material and the size of eye usually suffices. Were opticians more careful in the writing of prescriptions, much confusion, trouble, and delay would be avoided, for if details be omitted, the wholesale house has to write for information, and if the details be indefinite or wrong, there is the probability or the certainty of the optician not getting what he needs.

One of the most frequent causes of confusion is due to the want of uniformity in the angle notation for the axes of cylindrical lenses. No one can be quite certain what the writer means when he indicates the axis of a cylinder as being so many degrees out and down, and of the numerous styles of trial frames which are on the market but few correspond as to the angle notation of the two eyes.

The proper method, and one that ought to become universal, is that in which the zero is on the right-hand side of each eye and passes upwards and to the left; or, if the frame be one of the "drop" variety, the notation commences at zero on the left hand of each eye and passes downwards over to the right. When wholesale houses and their customers understand that this system of notation is employed, it is simply necessary to indicate the axis of a cylinder by the number of degrees, say 45 or 160; and if a single lens of certain calibre be required it is not necessary to indicate whether it be for the right or for the left eye.

The writing of a prescription in the body of a letter should always be avoided—it is unbusinesslike in the highest degree, because when a letter reaches a wholesale house it has to be replied to in the office, while the prescription or order for special frame has to be sent to the workshop, and there is a fair chance of either the communication or the order not receiving proper attention because of its delay in one or other of the departments.

In addition to recording the visual acuity of each eye without glasses, the name, address, age, and occupation of the client should be entered straightaway. Sometimes the two latter details can hardly be inquired into properly without a client thinking it is rather inquisitiveness on the part of the optician than that it constitutes information which he needs in order to make a proper selection of the glasses required. It is, therefore, as well to explain why these particulars are required or else to wait until a little later in the test when the optician has gained somewhat more of the confidence of his client. Especially delicate is the asking of the age of a lady, but it can be done all right if done in a proper manner.

The proportion of eyes that do not require any visual aid is very small, and it is only reasonable to suppose, if a person calls on an optician in regard to his eyes, that he does really require glasses, either because his sight is defective or because it is painful. Almost the first question that would be asked is as to what the trouble is. The reply will frequently give the optician some information, but, of course, the really important thing to know is what is the degree of visual acuity, and this should be learned at once by seating the client 6 metres from the distance card and occluding the left eye. Then the client is asked to read with his right eye the letters on the card, commencing from the largest. When he reaches the line in which he makes errors, vision equals the line immediately above it. The occluder being then put in front of the right eye the visual acuity of the left is taken. Although this seems a very easy thing to do, it is quite curious how clients frequently try to shirk giving the information needed. They will not respond to the optician's request to read the letters; they may reply that they can see them all, or that they cannot see below number 3 or some other line, thus leaving the optician quite ignorant as to what can and what cannot be distinctly seen. The knowledge is required and must be obtained, and it is necessary for the optician to firmly request that all the letters be read. The taking and recording of the visual acuity should not occupy more than an extremely brief period of time.

People who are presbyoptic, hypermetropic, or slightly astigmatic usually tell the optician that they can see very well at a distance but have difficulty with close work. It is true that they see comparatively better at a distance, but it by no means follows that their distant sight is good; it might be found considerably sub-normal. The myope, on the other hand, generally has the tale of how well he can see near to him, but that he cannot make out distant objects.

Those who have been in the habit of wearing glasses before and have had their sight tested, generally possess some knowledge as to what the true condition of their eyes may be, but the majority of people know very little about it and many have most peculiar ideas on the subject. Most of those who cannot see well at a distance, even if they be very highly hypermetropic, call themselves short-sighted, and it does not do for the optician to take for granted anything that he may be told before testing, unless it be the history of pain felt or of headaches. Such information can only be obtained from the client himself, and concerning them there is not likely to be any mistake.

The more natural the method of leading up to the test the less nervous are clients and the better success attends the testing. For instance, when wanting to know about the visual acuity, it is as well to ask what can be read on the card before putting on the trial frame, the one eye being occluded by means of the opaque disc held before it, and when the frame is being put on, it might be mentioned what it is, for some people are apt to regard so huge an apparatus with a considerable amount of awe.

Some clients when they require glasses for close work almost object to having the distant sight tested, and the optician must then explain that in order to select the proper glasses for near, he must first find out about the distant vision. It is also just as well for the optician to mention the fact that he is going to cover up the one eye, otherwise clients sometimes try, by moving the head on one side, to avoid the disc.

When there is the condition of anisometropia, that is, a different refractive power in each eye, it is usually accompanied by a difference in the visual acuity, and clients are often much astonished to learn that the one eye is of comparatively little use so far as the distant sight is concerned, and that they have always been seeing objects with the one eye alone. It is not an unknown

thing for people to learn for the first time, in the optician's chair, that the one eye is entirely blind.

The one eye must not be occluded by allowing the client to close it with his fingers. If this be done, that will not see for some little time so well as it should on account of the effect of the pressure made on the globe.

There are many points that can be observed outwardly and which help the optician to form a reasonable judgment as to a case of refractive error, such as the size and prominence of the globe, the size, shape and equality of the pupils, the relative distance of each eye from the middle line, the appearance of the conjunctivæ and lids, wrinkles, and expression of the brows, the inclination of the head sideways, etc., etc. These things can be seen almost at a glance by one who has had any experience.

Other points, that can be learned only by asking, are the condition of the eyes in a bright light or in the wind; whether there be headaches; whether the eyes ache, and if at night more than during the day; whether glasses have been used before, etc. If glasses have been previously used, and they be available, their kind and power should be learned; that is, they should be analysed and neutralised, which work is greatly facilitated by the possession of a lens measure.

If the vision be sub-normal, and the error of refraction be not quickly determined, the pin-hole disc should be brought into use; it will decide as to whether the sub-normal vision be due to a refractive error to an amblyopic or diseased condition. The difficulty in using this disc consists of getting it into the line of vision, and it, therefore, is decidedly better to allow the client to hold it himself than to place it in the trial frame where the aperture might be anywhere but in the line of visual axis. It should be held in the right hand for use with the right eye, and in the left hand for the left eye, the other eye being meanwhile occluded by the optician.

If the sight be improved by means of the pin-hole disc, the sub-normality of the vision is due to a refractive error, and should be correctable by lenses, but if the sight be not improved, it is perfectly useless trying to find glasses for the case; there must be causes for the defective vision, which are not to be corrected by lenses. No time should be spent over such a case, but it should be immediately sent to an oculist.

It does not follow that because the sight is improved by the pin-hole disc that a case is purely optical. Many such also might have to be referred to the medical man, but perhaps the decision as to its necessity might not be arrived at so quickly without the pin-hole. While it is so decidedly wrong for an optician to deal with cases that do—or that might require—medical treatment, or which he does not understand or that he knows require atropinisation, or those of children under fifteen, it is also not right to cause clients undue inconvenience, expense, and trouble by sending to the medical man those more simple cases which he can perfectly well treat from an optical point of view.

Most valuable information is obtained from the knowledge of the location of the near point; in fact, it might be said that it is impossible to form a perfectly just estimation of the refractive condition without finding it. The measurement might be taken after the sight has been tested at 6 metres, but it is, perhaps, better to do it before, because then the optician starts out, very frequently, with considerable knowledge as to the condition of the eyes, only he might be led astray by the existence of astigmatism if it be done before the distance test. In certain cases, also, but not often, it is good to know how small a line of letters can be read on the hand card.

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

(*Continued from page 437.*)

SALICACEÆ.

Salix.—The Latin name for the willow. The origin of the word is doubtful, but it has been suggested that it is derived from *salio*, to spring out, on account of its rapid growth. Other writers attribute it to the Celtic words *sal* (near) and *lis* (water) on account of the damp situations in which it flourishes. *S. alba*, Linn. Latin, white. The under surface of the leaf is whitish with silky hairs, giving the grey colour which is characteristic of the white willows.

THYMELACEÆ.

Daphne.—The Greek δάφνη (daphne) signified the bay laurel (*Laurus nobilis*). The genus receives its name from the fact that the foliage of many species resembles that of the true laurel. *D. mezereum*, Linn. This is said to be derived from the Persian *Madzariyun*, the name of this or an allied species.—*D. laureola*, Linn. Latin diminutive of *Laurus*, the laurel, the leaves of which bear some resemblance.—*D. gnidium*, Linn. Gnidus or Cnidus was an old province of Asia Minor, where the plant was probably indigenous.

EUPHORBIACEÆ.

Mallotus.—Greek, μαλλός (mallos), wool. The younger branches and under surfaces of the leaves are covered with dense woolly hairs. *Rottlera*, another name for the genus, is from Rev. Dr. Rottler, a Danish missionary to India *M. philippinensis*, Müll. The tree is a native of the Philippine Islands, as well as India (where kamala is collected) and other parts of Asia. Kamala is the native name for the drug in Bengal.

Ricinus.—Latin, a dog-tick, from the resemblance which the seeds bear to this parasite. *R. communis*, Linn. Latin, common. *Palma-Christi* is an old name for the plant, the seeds of which yield castor oil.

Croton.—Greek, κροτών (kroton), the equivalent of the Latin *Ricinus*. These seeds also bear some resemblance to the tick. The Greek word appears to have been also applied to the castor oil seed. *C. tiglium*, Linn. Etymology unknown.—*C. eluteria*, J. J. Bennett. From Eleuthera, one of the Bahama Islands, of which the shrub is a native. Cascarilla is the diminutive of the Spanish *Cascara*, bark.

Euphorbia.—Greek, ἐυφόρβιον (euphorbion), the resin obtained from some of these plants. It is said to be named after Euphorbus, a physician to Juba, king of Mauritania, who first used the plants for medicinal purposes. *E. resinifera*, Berg. Latin, resin-bearing. The concrete milky juice is the gum resin, euphorbium.—*E. pilulifera*. The inflorescence is arranged in small globular masses.

Hevea.—The Caribbean name for the tree is Hevé. *H. brasiliensis*, Muell. The source of Para rubber, Para being a province in Northern Brazil.

Stillingia.—After Dr. Benjamin Stillingfleet, an English botanical author of the eighteenth century. *S. sylvatica*, Linn. Latin pertaining to woods, indicating the habit of the plant.

PIPERACEÆ.

Piper.—Latin, pepper. The Sanskrit *pippali* and Greek πέπερι (peperi) are from the same root. *P. angustifolium*, Ruiz and Pavon. Latin, narrow-leaved. The leaves are oblong-lanceolate in shape. *Matico* is the Spanish name for the shrub.—*P. cubeba*, Linn. Probably derived from *kababan*, the Arabic, or *kebaba*, the Indian name of the spice.—*P. longum*, Linn. The long, dried, unripe spike is the long pepper of commerce.—*P. nigrum*, Linn.

Latin, black. The berries are red when collected, but become black on drying.

ARISTOLOCHIACEÆ.

Aristolochia.—The classical name for certain species. Greek, ἄριστος (aristos), best; λοχεία (locheia), child-birth. This and the English equivalent—birthwort—indicate the esteem in which certain of these plants were held for their supposed efficacy in child-birth. *A. serpentaria*, Linn. The plant is known in America as Virginian snake-root. It was supposed to be an antidote to the bites of serpents, but is not now regarded as of any value for this purpose.—*A. reticulata*, Nutt. The leaves are prominently reticulated on the lower surface.

SANTALACEÆ.

Santalum.—*Sandal* is the Arabic and *sandul* the Persian for the aromatic wood yielded by the following species. They are doubtless derived from the Sanskrit equivalent *Chandana*, the derivation of which is unknown. *S. album*, Linn. Latin, white, indicating the light colour of the wood, and distinguishing it from other varieties, and especially from the red sandal or sanders wood, the product of *Pterocarpus santalinus*, Linn.

CONIFERÆ.

Taxus.—The Latin name for the yew. The derivation is uncertain, but it is supposed to be connected with the Greek τόξον (toxon), a bow, as this weapon was frequently made from the wood. *T. baccata*, Linn. Latin, bearing berries. The fruit, although not botanically a berry, is similar in appearance.

Juniperus.—Latin for the juniper tree. The etymology is uncertain, but it is supposed to be connected with the Celtic *joneprus*, rough, in allusion to the short, pointed leaves. *J. communis*, Linn. Latin, common. This is the most frequent species of the genus.—*J. sabina*, Linn. The Latin name for the plant. *Savin* is a corruption of the same word.—*J. oxycedrus*, Linn. Greek, ὀξύς (oxus), pointed, κέδρος (kedros), cedar. The leaves are sharply pointed.

Pinus.—The Latin name for *Pinus pinea*, Linn. The origin of the word is unknown, it has been attributed by some writers to the Celtic *pin* or *pyn*, meaning rock, from the mountainous habitats of the tree.—*P. pinaster*, Solander. The name given to a species of pine by Pliny, probably from *pinus* and *astrum*, a star, from the radiate arrangement of the leaves.—*P. sylvestris*, Linn. Latin, wild, pertaining to a wood. The Scotch fir is still found as a native in some of the Highland forests.—*P. australis*, Michaux. Latin, southern. This is the common pine of Florida and other south-eastern states of North America. It is not found in the northern states. The older name for the tree is *P. palustris*, but this has been discarded, from the fact that it inhabits dry plains and is not found in marshes.—*P. tæda*, Linn. Tæda is the Latin name for some species of pine tree.—*P. larix*, Linn. The Latin name for the larch. Its origin is probably the Celtic, *lar*, fat, from the abundance of opaque oleo-resin secreted by the tree. Venice turpentine is obtained from this tree. It is produced in the Tyrol, and at one time was largely exported from Venice.—*P. abies*, Du Roi. The Latin name for this, the silver pine. The derivation is unknown, but it is also supposed to have a Celtic origin.—*P. balsamea*, Linn. The balsam fir, so-called from the liquid oleo-resin, known as Canada balsam, which is obtained from it.—*P. canadensis*, Linn. This fir, the hemlock spruce, is widely distributed in Canada, extending also into the northern parts of the United States.—*P. pumilio*, Hæneke. Latin, dwarf. This is one of the smaller species of pine, being only about 20 feet in height.

Picea.—Latin, *pix*, pitch. *P. excelsa*, Link. Latin, high. This, the common spruce fir, has long been a source of pitch and turpentine. So-called Burgundy pitch is the oleo-resin obtained from this tree. It is not, however, produced in Burgundy, but comes mostly from Finland and the Black Forest.

Callitris.—Greek, κάλλιστος (kallistos), most beautiful; referring to the graceful character of the tree. *C. quadrivalvis*, Ventenat. The female catkin has four oval lobes.

ZINGIBERACEÆ.

Zingiber.—This and the various allied names for ginger are originally derived from the Sanskrit. Zingiber is the Indian name for the rhizome. *Z. officinale*, Roscoe. Latin officinal. The source of the ginger of commerce.

Elettaria.—*Elettari* is the native name for the cardamom plant in Malabar, where it is cultivated. *E. cardamomum*, Maton. The Greek word καρδάμωμον (kardamomon) appears to have been the name of some Indian spice. The Greek, κάρδαμον (kardamon) indicated a kind of cress.

Amomum.—Greek, ἄμωμον (amomon), an Indian spice, possibly the seed of a species of *Amomum*. The Greek word is probably derived from the Arabic name *hamauma*, from *hamma*, to warm, indicating the burning taste of the spice. *A. melegueta*, Roscoe. The name first appears in the thirteenth century as *melegetæ*, which was applied to the seeds of this plant then exported from Tripoli (Africa). It has been suggested that the word is derived from *melica*, millet, from a similarity in the appearance of the seeds, but this is hardly probable. Grains of Paradise, an old name for the seeds, indicates the esteem in which they were held.

Curcuma.—The Arabic word *kurkum* was applied to turmeric and saffron, both being used as a yellow dye. *C. longa*, Linn. Turmeric consists of the elongated tubers or root stock. The round and long varieties are both obtained from this plant; the former, being the central rhizomes, are ovate; the latter, being the secondary or lateral tubers, are longer and more cylindrical in form.

Alpinia.—Named after Prospero Alpini, a distinguished Italian physician and botanist, who died about 1615. *A. officinarum*, Hance. Latin, *officina*, a workshop, hence useful. It is the source of galangal, an aromatic stimulant.

IRIDACEÆ.

Iris.—Iris, in mythology, was the messenger of the gods and the goddess of the rainbow. The genus is appropriately associated with this goddess, as it includes flowers of every variety of colour and of the most exquisite beauty. *I. florentina*, Linn. The plant has for long been cultivated in the district around Florence for its rhizome, which, when scraped and dried, is popularly known as orris root, probably a corruption of iris root.—*I. pallida*, Linn. The flowers are usually of a pale lilac colour. It is another source of orris root.—*I. germanica*, Linn. The plant is a native of Southern Germany and neighbouring countries. The rhizomes are collected with those of the two former species for the production of orris root.—*I. versicolor*, Linn. Latin, various coloured. The flower includes the two typical colours of the iris—purple and yellow.

Crocus.—Greek, κρόκος (krokos), the purple crocus and saffron which is obtained from it. The origin of the word is uncertain, but it would appear to have some connection with the Greek, κρόκη (kroke), a thread; saffron consisting of the thread-like stigmas with parts of the styles attached. *C. sativus*, Linn. Latin, cultivated. The plant has from very early times been cultivated for the production of saffron. It is not known in a wild state. The name saffron is derived from the Arabic word *asfar*, yellow. It was formerly cultivated in the neighbourhood of Cambridge and Saffron Walden.

(*To be continued.*)

REVIEWS AND NOTICES OF BOOKS.

Animal Simples Approved for Modern Uses of Cure. By. W. T. Fernie, M.D. Pp. xxiv. + 565. 8vo. Price 6s. Bristol: John Wright and Co. 1899.

Those who perused the 'Herbal Simples' of the same author will be prepared for pleasant half hours in dipping into the present volume, and they will not be disappointed. It is full of quaint folk-lore, which is sometimes placed in startling juxtaposition to scientific facts, as, for instance, when the statement that "sheep's marrow contains less solid fat (stearin) and more liquid fat (olein) than beef marrow, which will remain fluid at a much lower temperature nevertheless," is abruptly followed by a clever Latin version of "Taffy came to my house and stole a marrow bone."

The author has drawn upon an immense number of books, both ancient and modern, for his facts and fancies. It is interesting at the present time, when a revival of the use of animal remedies in medicine is taking place, albeit they are now administered in a more scientific manner than formerly, to have presented to us side by side their ancient and modern uses, and to note how the results obtained by empiricism have been in many cases confirmed and explained by the scientific research of the present century. The philologist will find much interesting matter, such as that the word Honeymoon is derived from the fact that the honey wine of the Teutons was drank for the first month after marriage. The homœopath will also find it suggestive; indeed, the homœopathic tendency of the author is manifest throughout the work. The animal simples are arranged alphabetically under their English names, and there is an excellent index, both of remedies and of the diseases for which they have been used. The only fault of the book is that the very miscellaneous and condensed information it contains suggests that notes have been pigeon-holed for some years under the various heads, and have finally been rather hastily strung together, so that the articles often lack continuity. But this may be overlooked in view of the very interesting and often very amusing and exceedingly varied character of the matter, and the difficulty of connecting it into a continuous narrative. It is one of those books that are well worth adding to a library, since it will not be read through and then laid aside as done with, but will be used again and again for information regarding superstitions and practices that continue till the present day, but about which it is often difficult to find an explanation, except by careful perusal of many volumes of 'Notes and Queries' or similar publications.

Flora of Kent. By F. J. Hanbury, F.L.S., and E. S. Marshall, M.A., F.L.S. Pp. i.-lxxxiv. + 444. 8vo. Price 12s. 6d. London: F. J. Hanbury. 1899.

It is now more than a quarter of a century since this work was commenced by Mr. Hanbury. For many years most of his leisure was spent in personal investigation of each of the districts into which he had divided the county for botanical purposes. But the increasing demand made upon his time by business duties hindered the completion of the work, and in 1890 the Rev. E. S. Marshall undertook the revision of the accumulated materials and the bringing of the work down to the present day. The 'Flora' has been compiled after the standard set by Trimen and Dyer's 'Flora of Middlesex.' The history of botanical investigation in the county is traced from the tenth century to the present day, and the topography of the county is described, including its river, drainage, and the chief altitudes. An excellent sketch of its geology with a geological map is given, and a chapter is devoted to the meteorology of the county, and another to the delimitation of the botanical districts. A tabular comparison of the flora of Kent with that of the adjacent counties is given, also a list of those who have contributed information, numbering in all over one hundred botanists. The list of books quoted, and of the herbaria consulted and where they are to be found, will prove very useful for those who may in the future explore the county, for, although the flora of Kent is a remarkably rich one, there are many parts of the county that will certainly be found to yield additional localities for uncommon species. A couple of pages devoted to botanical notes give, in a small space, the most interesting points with respect to the flora. Naturally maritime plants form a prominent feature, owing to the extent of the Kentish seaboard. Moorland and subalpine plants are comparatively rare, the highest point in the county not exceeding 811 feet. The orchids are perhaps the most distinctive feature of the county, thirty-three out of a total of forty-four British species having been found in it, although three of these are now probably extinct—viz., *Liparis læselii*, *Orchis militaris*, and *O. simia*. *O. hircina* is stated not to have been gathered during the last few years, but singularly enough, only this week its rediscovery in the county has been recorded in the newspapers. *Eryngium campestre*, *Diotis candidissima*, *Cyclamen hederæfolium*, and *Carex depauperata* also seem to have become extinct, at all events in the known localities in the county.

The only two plants that appear to be restricted to the county are *Orchis arachnites* and *Orobanche caryophyllacea*.

The text is clearly arranged, heavier type being employed for the names of species, genera, and families. In nomenclature the last edition of the London catalogue appears to have been followed. The index is comparatively poor, the names of species being given only in the two large genera *Rubus* and *Carex*. On the whole, it forms a very satisfactory work, and one that may well take its place in every botanist's library as a flora of the highest standard, and as reliable as it has been possible to make it. A few copies have been published in limp covers for pocket use by field botanists who may wish to study their own particular neighbourhood. The editors evidently do not regard the discovery of additional species, or of additional localities for known species as impossible, for they state in the preface that they will be "pleased to receive notes (accompanied, if possible, by voucher specimens) of any additional discoveries which may either add new species to the Kent flora or show an extension in the distribution of any plant into fresh divisions of the county."

SELECTED PRACTICAL FORMULÆ.

Cheron's Mercuric Chloride Serum.

This is composed of mercuric chloride, 50 centigrammes; sodium chloride, 2 Gm.; phenol, 2 Gm.; sterilised distilled water, 200 Gm. 20 C.c. of this is injected every six or eight days in the treatment of syphilis.—*Schweiz Woch.*, **37**, 94.

Magnesium Flash-light Powder.

J. Schwarz and W. Knauer have patented the following formulæ for flash-light powders:—(1) Magnesium, 1 part; boric acid, 1 part. (2) Magnesium, 1 part; silicic acid, 1 part. These mixtures burn quickly and make very little smoke.—*Pharm. Centralh.*, **40**, 190.

Creosote Pill Mass.

Creosote, 3; sweet almond oil, 1; lard, 1; magnesia, 1. These ingredients are mixed in the order given, the mixture set aside for 24 hours, again mixed, and preserved in a well-stoppered earthen vessel.—*Pharm. Centralh.*, **40**, 152, after *L'Union Pharm.*

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MONOPOLY, PRIVILEGE, AND VESTED INTERESTS.

Companies of unqualified persons taking advantage of the judicial decision that companies do not come within the scope of the Pharmacy Acts, and carrying on the business of chemists and druggists, put forward two pleas in justification of that procedure, both of which appeal to popular prejudices and are, at first sight, calculated to enlist the sympathies of those who are imperfectly acquainted with the circumstances of the case. One of the pleas relied upon for the purpose of defending the action of companies is that the statutory restriction of the chemist and druggist's business in the sale of poisons and the dispensing of medicines constitutes a monopoly, operating to the advantage of a special class, and that it is, therefore, an interference with freedom of trade prejudicial to the general interests of the community. If that view of the matter were correct it might furnish a valid argument against those provisions of the Pharmacy Act which restrict the sale of poisons to legally qualified persons. Such an argument would apply with equal, if not greater, force to the restrictions hedging the professions of law and medicine. But at the best it is a view that regards the sale of poison as a matter of ordinary trade, and only takes cognisance of some of the circumstances to be considered. It overlooks the very important fact that the restriction of the sale of poisons was established entirely in the interest of the public and in connection with the proviso that freedom from the restriction should be obtainable only by persons satisfying requirements held by the Legislature to be essential in the public interest, *i.e.*, qualification under the Act. The exclusive privilege conferred upon such qualified persons is, therefore, in no sense a monopoly in their favour; but a necessary consequence of the statutory provision for the safety of the public. The conditions prevailing at the time the Act was passed were, unfortunately, such as to give undue prominence to the trade character of the chemist's business; for the dispensing of medicine and the whole practice of pharmacy was open to any persons however incompetent; and even the Legislature was then chiefly impressed with the necessity of providing against danger arising from the retail sale of poisons across the counter.

The other plea put forward on behalf of companies, constituted of persons having no pharmaceutical qualification, is based on the fact that such companies have long carried on the business of chemists and druggists. Hence, it is argued that by such continued usage they have obtained possession of the chemist's privilege, have acquired prescriptive rights and, by the use of capital, a vested interest sufficient to override any presumed intention of the Pharmacy Act to confine the exercise of the chemist's business to legally qualified individuals. That argument might, also, have had some cogency if the Pharmacy Act had been intended to promote the interests of chemists and druggists; it would have given support, in that sense, to the judicial decision that a company is to be regarded outside the scope of the Act; but even as a measure of protective legislation, protection of the public was the declared object of the Pharmacy Act, and the exclusive privileges it conferred on qualified chemists and druggists had only that object in view. So that if the argument were good that vested interests have been created by usage, or if the decision as to companies being outside the scope of the Pharmacy Act were conclusive, there would be an end of the object for which the Act was passed. Even the possession of the qualified chemist's privileges by companies is no evidence of their right to them, since it is in direct opposition to the object of the Act. If pharmaceutical qualification is to be of any value to the public, the rightful owners of those privileges —established for public protection—must, on that ground, prove their exclusive title to them and dispossess their appropriators. Nothing short of that can be sufficient for the proper regulation of the practice of pharmacy in this country. Though possession is proverbially nine points of the law, justice and right will be with the tenth point in the case of wrongful possession. Moreover, if the question as to the rightful exercise of exclusive privileges under the Pharmacy Act is to be considered as a question of vested interest, the claim of those who have legitimately acquired such interests may more reasonably be expected to prevail over claims avowedly based upon predatory acquisition.

The position of the Lord Chancellor in regard to the state of pharmacy law shows that he has recognised the existence of serious anomaly; but it seems evident that he still fails to recognise that the decision of the House of Lords was more relevant to the defects of the Pharmacy Act than to the essential circumstances of the case. Legislative action must now take account of those circumstances and also of the defects of the Act, by reason of which its real object was obscured and unqualified persons, incorporated as companies, were judicially held to be outside its scope. Another point to be considered is the relation of public interest to the practice of pharmacy, not merely as a branch of trade; but as an occupation requiring, in the public interest, competence, responsibility, and professional status on the part of those engaged in it on their own account. The suitable qualification of assistants employed by principals entrusted with the exclusive privileges conferred upon them for the protection of the public, is, of course, an important consideration, and it is one to be provided for by the legally qualified principals upon whom responsibility properly devolves. To expect adequate performance of those important duties from a company which cannot in itself possess the competent practical knowledge requisite for that purpose, or to expect its vicarious performance by employés of a company, constituted of unqualified individuals, would involve contradiction of the

principle of the Pharmacy Act and reversion to the state of affairs existing before the passing of that Act. The only alternative is radical reform of pharmacy law, by which the exclusive privileges of qualified chemists will be maintained for their proper purpose, and the titles indicative of qualification will have their proper significance. For securing those important objects the suggestions put forward by the Council of the Pharmaceutical Society present a reasonable programme, consistent with public interests, supported by the general body of legally qualified chemists and druggists—as stating their just claims to recognition—and of a nature calculated to promote the advance of pharmacy as a professional occupation, without creating monopoly, or interfering with any ordinary trade interests that are properly subject to influences of a different kind.

THE BEGINNING OF THE CAMPAIGN.

Lancashire has made the first move in preparing for the application to Parliament which must, in some way, be made before long, to obtain an amendment of the law that will establish throughout the country necessary and adequate regulation of the practice of pharmacy in a manner consistent with the requirements of the public and the medical profession, with the just claims of qualified chemists and with the progress that has been made during the thirty years that have elapsed since the Pharmacy Act was passed. As stated by Mr. George Ball at the meeting reported in this week's Journal (see page 497), chemists are weary of "the tinkering and trifling" that has been practised with them. The Southport chemists have well taken advantage of the opportunity afforded them by the election of a parliamentary representative of their division, to make known the views held by chemists generally concerning the interference with their business which has resulted, partly from the imperfections of the Pharmacy Act, 1868, and further from the development of a system that was not contemplated when that Act was passed. The proceedings at the meeting held last Thursday, and at the subsequent interviews with the parliamentary candidates, show that the Southport chemists understand their position, the injustice they are subject to and the claims they are entitled to make as persons legally qualified to carry out responsible functions of importance to the general public. It is evident they know what they mean and what they will have to agree upon, among themselves, in order to effect the object they have in view. In those respects the Southport chemists have very effectively set an example that should meet with approving response throughout the country and, when opportunity offers, that example may be usefully followed elsewhere by all qualified chemists, as suggested by Mr. J. Smith (see p. 501), the local secretary for Liverpool, who took part in the work. To secure the general unanimity that will be necessary, there will probably be, here and there, some occasion for internal concessions and modification of particular opinions; but the chief need will be to educate the public as to their relation to qualified chemists, to instruct public men as to the main facts of the chemist's position, to dispel various prejudices as well as the extraordinary ignorance that prevails in regard to a matter of great importance to the general public; also to prove that "there is boundless theft in limited professions," and that, as Sir George Pilkington remarked, improper bolstering up of limited company trading creates the greatest danger to free trade.

ANNOTATIONS.

Pharmaceutical Tension—undoubtedly high last week—has now been satisfactorily reduced to a tolerably clear perception of what will have to be done. The past traditions of the Pharmaceutical Society and the previous policy of the Council will not have to be sponged out to make way for a trading drug store programme; nor will it be necessary, in the interests of the craft, to transfer the administration of the Pharmacy Acts from the Council of the Society to—well, say Artillery Row.

After-dinner Speeches have lately been the subject of much censorious treatment as having generally little meaning; but those delivered at the annual dinner of the Pharmaceutical Society were at least marked by some plain speaking that affords useful indication of authoritative opinions which are well worth consideration. In the first place the utility of the Pharmaceutical Society as a public institution was heartily recognised from the point of view of the Legislature, of the medical profession, and of science. Its importance as an organisation necessary for, and capable of, defending and promoting the interests and welfare of the body it represents was also recognised, as well as the practical influence the Society has exercised upon the advance of pharmacy and the technical qualification of those engaged in the practice of the art. Not less useful were other expressions of opinion in regard to the want of more appropriate distinction between the functions of the medical practitioner and those of the pharmacist; to the abuse of advertisement and of medical charities; to the present inadequate restriction of the sale of poisons, as well as to the recently alleged prevalence of nefarious practices that would be, in any case, discreditable and are, we hope, really more imaginary than probable. Conditions existing at the present time give expressions of opinion on those subjects special significance, and on the occasion referred to, they were generally of a nature to inspire confidence that, in the arduous work which now lies before the members of the pharmaceutical body, the action taken by the Council of the Society, as their representative, will meet with encouragement and support from the several quarters represented by the speakers at the Society's annual dinner.

Paucity of Talk at the Society's anniversary meeting was very beneficially compensated for by the uncompromising manner in which opinions were expressed as to a variety of subjects that very materially concern qualified chemists. In that respect the remarks of the President were conspicuous and, bearing in mind his habitual consideration for the opinions of others, the pointed remarks made by him on that occasion may be regarded as conveying their full meaning. Thus, for instance, in regard to financial affairs, the adverse balance was spoken of as not affording ground for the alarm that has been affected in some quarters. Putting aside as undeserving of argument those manifestations of hostility which pretend to be criticism, though really little more than hereditary jealousy, the President was in no degree reticent in declaring his belief that the action taken by the Council in regard to the Lord Chancellor's Amendment of the Pharmacy Bill last year, carried out the general desire of members of the Society. Equally pointed was the statement that the suggestions for amended pharmaceutical legislation sent to the Lord Chancellor were a wise enunciation of the principle involved in pharmaceutical qualification and a proper declaration of policy on behalf of qualified chemists, at once consistent with the public welfare and with the traditions of the Society. Lastly, but not least important, the President's

declaration that chemists and druggists—so far as they are entitled to call themselves pharmacists—stand in the same professional position as members of the medical or the dental profession. That statement furnishes the keynote to future action, either in defence of the acquired rights of the craft, or with the further object of placing the practice of pharmacy upon a more satisfactory footing than it has yet held in this country. Mr. Hills' presidency has been marked by distinct advances in that direction, which may safely be accepted as giving promise for the future.

The Post-Diluvian Doctrine propounded by Mr. Barrett, in opposition to the view put forward by Mr. Hyslop and avowedly based upon the belief that his pharmaceutical qualification had not done him any good or been any use to him, disclosed a peculiar state of mind that is not a little inconsistent with Mr. Barrett's subsequent remarks in reference to the pharmaceutical qualification of dispensers being desirable for those engaged in that work by medical men, as well as for those employed by chemists. But the difference between Mr. Barrett and Mr. Hyslop may perhaps be correctly traced to the kind of diluvian influence exercised by the Pharmacy Act, 1868, in obliterating to a great extent the ancient landmarks and principles of the Society, and overlaying them with the detritus of a trade-interest notion that the legally qualified chemist and druggist is merely a licensed monopolist of the trade in poisons instead of being a person engaged in a responsible business that is something more than trade, for the success, respectability, and welfare of which professional qualification is the most essential thing—the only condition that can extend any protective influence over the purely trade portion of his business. The epoch of the deluge by which Mr. Hyslop's views seem to be separated from those of Mr. Barrett may, therefore, be fixed as that of the passing of the Pharmacy Act, 1868, when the qualification of an acting assistant was substituted for that appertaining to the more important and responsible position of a proprietor of a pharmaceutical establishment. The disastrous influence that substitution has had upon the professional position of chemists and druggists, and even upon their trade interests, is now matter of common knowledge, and the correction of its evil effects will fully engage the energies of the involuntary sufferers for some time to come.

The Result of the Council Election, last week, is the strongest possible indication of the fact that the members thoroughly approve of the policy of the Pharmaceutical Society's Executive during the past year. For, whilst the members who take a practical interest in the affairs of the Society—as witnessed by the fact that they vote steadily at all elections, from year to year—seem to have voted as consistently as ever, the newer members were evidently influenced by very similar ideas. Change for the sake of change does not commend itself to the members of the Pharmaceutical Society as a body, and no amount of shrieking on the part of glorified trade circulars is likely to convert them to views differing appreciably from those they have recently so forcibly expressed. The impertinence of attempting to bring outside interference to bear upon the election has signally failed, and a severe rebuke administered to the Council's would-be guides, philosophers, and friends. The proffered guidance is much too erratic and the philosophy as false as is possible for that of a glorified trade circular to be, whilst the vaunted friendship is of the kind that permits of fair-speaking face to face and the dissemination of the vilest slanders on other occasions. The members of the Pharmaceutical Society, however, have shown by their decisive action how utterly they repudiate the advice of irresponsible and self-appointed critics, and for the future it may be anticipated that wiser counsels will prevail in the dark regions of trade journalism.

Further Analysis of the Votes Recorded last week, so far as such analysis is possible from the published figures, seems to indicate that the faithful two thousand old members did their duty by exercising their voting power once more, and that about four-fifths of those who have recently become entitled to all the privileges of membership took full advantage of the opportunity so early afforded them of expressing a definite opinion on the conduct of the Society's affairs. Virtually, the increased vote coincides exactly with the net increase in the strength of the Society, and that fact may be accepted as a happy omen for the future. The prospects of the Society are exceptionally bright at the present moment and there can be but little doubt that the continuance of interest in its affairs, to the same extent as now prevails, must prove of the very greatest advantage to the whole pharmaceutical body. The voice of the registered chemists of Great Britain can find utterance in no other way than through the Pharmaceutical Society, and though that body at present includes only two-fifths of those whose names appear upon the Register of Chemists and Druggists, its influence is not so inconsiderable as malevolent critics would have it appear.

The Assistants' Votes probably number between seven and eight hundred, and it is interesting to note, therefore, how many assistants—members of the Pharmaceutical Society—either failed to return their voting papers or allowed practical rather than sentimental considerations to influence them. Evil advice from prejudiced journalists and mischievous circulars sent out broadcast by some ill-advised pharmacists did their worst, but that worst has proved to be nothing beyond the rejection of one of the oldest, faithfullest, and most highly-respected representatives the members of the Society had. That, too, by the small matter of less than sixty votes. Great and quite unnecessary alarm had been manifested with regard to the position of one retiring member whose seat has proved to be the safest of the lot, and there is good reason to believe that the absurd steps taken by the alarmists to prevent the loss of that tried representative have proved too efficacious only in securing the rejection of another, the loss of whose services is widely deplored.

The Average Number of Votes recorded for each of the successful candidates was 2140, the highest being 2575 and the lowest 1779; the average recorded for the rejected candidates was 998⅔, the highest being 1722 and the lowest 465 only. The result, therefore, is a very decisive one, and the members may well be congratulated on having indicated their wishes in so unmistakable a fashion. They are satisfied with the work done for them in the past, and they desire more work of the same kind to be done for them in the future. The one change in the constitution of the Council is, nevertheless, significant, for much earnest work for the craft has been gratefully recognised by the nineteen hundred odd voters who have enabled Mr. Glyn-Jones to secure a seat, and there is a widely prevalent opinion that the action of that large section of the members will prove to be fully justified. But that must be left to the future to reveal. Meanwhile, it is well to bear in mind that there is much to be done by the members of the Society. Each one should do his best to persuade another registered chemist to join, and all should strive to do as much as, if not more than, any of their fellows in the direction of improving the position of the Society and, as a consequence, the status of the craft.

A LARGE MEETING of the pharmaceutical chemists and registered chemists and druggists, carrying on business within the parliamentary division of Southport, was held on May 18 (see p. 497), for the purpose of ascertaining their views as to the Lord Chancellor's Pharmacy Bill. The chair was taken by Mr. George Ball, and a resolution was passed that the Bill now before the House of Lords would be "disastrous to the safety of the public, inimical to the best interests of pharmacy, and must be strenuously opposed." It was then decided to interview the two parliamentary candidates and request them to oppose the Bill. On the motion of Mr. J. Smith, seconded by Mr. Henry Ball, it was also decided to ask the respective candidates to support an amendment to Lord Halsbury's Companies (Medical Profession) Bill, to the effect "that chemists be included in that Bill." A deputation was then appointed to wait upon both candidates.

THE DEPUTATION was received on Friday morning by Mr. C. B. Balfour, and was introduced by Mr. Councillor Foggitt. It was represented that Lord Halsbury's Bill would legalise companies consisting of unqualified and irresponsible persons in carrying on the business of chemists and druggists, contrary to the intention and provisions of the Pharmacy Act, 1868, so as to prejudice public safety, and operate unfairly against legally qualified chemists. Mr. Balfour said he looked at the matter as affecting the protection of the public, not as a chemists' monopoly, and he was entirely with the deputation in regard to the first question put to him by the deputation. He thought the law relating to the sale of poisons and drugs and to the dispensing of medicine should be made stronger rather than relaxed, and that, in the interest of the public, there should be duly qualified chemists. He thought that people who did not pass the requisite examinations were not entitled to call themselves chemists; but that the public ought to be enabled to distinguish between qualified and unqualified persons. In reference to the insertion of chemists with medical men and dentists in the Companies (Medical Profession) Bill, Mr. Balfour asked on what ground that was desired, and it was explained that, since the legal qualification for the practice of pharmacy is of a nature analogous to that for the practice of medicine or of dentistry, no invidious distinction should be drawn, and that companies, being incapable of qualification, should not be permitted to carry on either practice any more than unqualified individuals. Mr. Balfour subsequently informed Mr. Righton, after having considered the whole subject, that he was prepared to block the Pharmacy Bill, and to vote for giving qualified chemists the same privileges proposed to be given to medical men, dentists, and midwives by the Companies (Medical Profession) Bill, provided the effect would be to protect the public, raise the status of chemists, and prevent unqualified persons from dispensing medicine or selling poisons.

SIR GEORGE PILKINGTON was afterwards interviewed, the deputation being introduced by Mr. George Ball, and after its objects had been explained, he said his answer was that he was generally in favour of free trade and against the establishment of monopoly; but he had looked into the matter for himself, and, after due consideration, he saw no reasonable objection to the views of the deputation. The first consideration was the protection of the public, and it seemed to him that Lord Halsbury's Pharmacy Bill would enable a limited liability company, backed by wealthy capitalists, to crush out the individual chemist who had qualified himself for his work. He would unhesitatingly oppose that measure, if returned. As to the second question, he could not see why certain branches of a noble profession should be privileged, and one—not the least important—left to companies and other unqualified persons, unless it was to bolster up some lucrative company monopoly. In regard to the introduction of the words "chemist and druggist" into the Companies (Medical Profession) Bill, Sir George said he was in favour of that being done as a safeguard to the public.

"SIR EDWARD CLARKE, LIMITED," as the title of a joint-stock company, perhaps comprising tinkers, tailors, candlestick makers, etc., as a purveyor of law "at store prices" and depending for qualification upon a few briefless juniors and a certificated clerk, is the genial Laboucherian suggestion by which the proposition of the Lord Chancellor, in regard to the practice of pharmacy, is held up to ridicule in the pages of this week's *Truth*.

THE PERUSAL OF A LEAFLET sent by the North-East Lancashire Chemists' Association has served the useful purpose of enlightening the Editor of *Truth* as to the Gilbertian idea embodied in Lord Halsbury's proposal of allowing some half-dozen ignoramuses to form themselves into poison-dispensing companies, having the right to trade under the title of pharmaceutical chemists. Such a project is naturally regarded as not only absurd in itself, but also as such a grave injustice to those who, before opening a chemist's shop, have spent time and money in qualifying themselves for the protection of the public, that it is considered to justify the profound discontent that has been aroused among qualified chemists.

"DRUDGERY" is the epithet made use of in last week's *British Medical Journal* by a writer over the initials G. P., as being applicable to the dispensing of medicine by medical men, which he, as well as many other general practitioners, would gladly be relieved from, by such an arrangement with chemists as that referred to in a previous number by Dr. Reginald Farrar. One difficulty mentioned in connection with giving prescriptions is that they are used without sanction, otherwise than intended and that there is no means of knowing to what extent that goes on.

Dr. E. S. NUTTING, writing from Warsop, also remarks that there are few general practitioners who, after a long day's work, would not be thankful if Dr. Farrar's suggestion could be carried out, and he adds that the time spent in dispensing medicine might be much better employed to the benefit of a doctor's patients. To meet the difficulties that would have to be overcome in devising a scheme workable for club practice, Dr. Nutting considers that greater union among medical men is the only remedy for this and many other much-needed reforms, and that such union will never be effective until some body like the British Medical Association takes the matter in hand and becomes to the medical profession what the Incorporated Law Society is to the legal profession. As chemists are also largely interested in the rational arrangement of this matter of dispensing, it seems highly desirable that a settlement of it should be undertaken, on their behalf, by the members of the Pharmaceutical Society in conjunction with the British Medical Association, so that doctors might in future "dispense advice" and chemists dispense medicine.

THE EDITOR LEARNS WITH REGRET from various sources, that owing to some circumstances beyond his control, the Journal was not received last week as it should have been throughout the country by the early post on Friday, and that it did not reach many of the members until Saturday. That circumstance was especially unfortunate, as so many would have been anxious to learn the result of the election and to read the report of proceedings at the annual meeting.

SOUTHPORT CHEMISTS AND PARLIAMENTARY CANDIDATES.

On Thursday evening, May 18, a meeting of the chemists and druggists and their assistants carrying on business within the Southport parliamentary division was held in the Young Men's Christian Association Rooms, Eastbank Street, Southport. The meeting was convened by circular, which stated the business as follows :—

1. To bring before the meeting a resolution *re* the present Pharmacy Bill of the Lord High Chancellor.

2. To appoint a deputation to wait upon the candidates to present the resolution and obtain their views upon the same.

The circular was signed by Mr. Jas. Righton, local secretary of the Pharmaceutical Society. There were about forty chemists and assistants present, and Mr. George Ball was elected Chairman of the meeting.—Letters expressing inability to be present were read from proprietors : Messrs. F. Round, B. Wyles, J. H. Whitworth, E. Surr, Geo. Crook, C. H. Chester, Robert Mackie, W. Kirk, J. M. Wimpenny, R. P. Hirst, W. J. Smith, Wm. Blackburne, R. Pheysey, and S. Kershaw ; assistants : Messrs. T. A. Winfield, Alfred Scales, E. B. Flemens, and J. R Chipendale, the writers of which all sympathised with the object of the meeting and expressed their decided approval.

The CHAIRMAN said he presumed they would take Mr. Righton as the Secretary in that matter, as he was the local secretary of the Pharmaceutical Society. This was agreed to, and Mr. RIGHTON then read the circular convening the meeting, the reason of issuing which he briefly explained was owing to the short time they had in which to get to work, as the election had been thrown upon them so suddenly. At the outset he had communicated with some of his brethren, and there was a general opinion that they ought to take some active part in connection with that matter. He had received letters from the local secretaries at Waterloo, Blundellsands, Freshfield, and other places within the parliamentary division, and in putting himself in communication with the chemists of the town he gathered that there was a strong feeling that they should have a meeting. He had posted copies of the circular to all the chemists within the division, and those who had written expressing their inability to be with them that night were all pretty much of the same opinion—that the Pharmacy Bill ought to be most strenuously opposed.

The CHAIRMAN, Mr. Geo. Ball, said they had heard from the circular and from Mr. Righton's explanation what the object was in meeting there that evening. It was due to the action of the Lord High Chancellor, who was a very high official in Her Majesty's Government, having introduced a Bill into Parliament, which, if it became law, would simply put them back to the time of the Charter of 1843. It practically meant a repeal of the Act of 1868. What the object was in taking that step he really could not conceive ; but of this he was convinced, and he thought most of them would agree with him, that they were absolutely tired of the tinkering and trifling with a body of men whose responsibilities were certainly very great, and whose remuneration was perhaps scarcely equal to their responsibilities. That might, or it might not, be a selfish idea. His own calling, although he was a pharmaceutical chemist, was somewhat different from the routine which most of them who were before him followed. But he heartily associated himself with their sentiments, and personally should use his best endeavour to further what they then had in hand. He then called upon Mr. Pearson to move the following resolution, and said he hoped they would have some very decisive speaking on the matter.

> That in the opinion of this meeting the Bill formulated by the Lord Chancellor, Lord Halsbury, the Pharmacy Act Amendment Bill (1899), now before the House of Lords, is disastrous to the safety of the public, inimical to the best interests of pharmacy, and must be strenuously opposed.

Mr. PEARSON said he had very great pleasure in proposing that resolution. The Bill seemed to him to be a very unjust one, and it certainly was a very unsafe Bill, having in mind the interests of the public. It was aimed at what should be the foundation of every profession — individual qualification. The Bill would enable ordinary joint-stock companies to carry on the business of chemists and druggists, to deal in poisons, and to sell them in a commercial way. In that respect it was dangerous to the public. There was no individual proprietary responsibility, the whole business would be handed over to a board of directors, and from them to a hireling. That was directly opposed to the Act of 1868, which was primarily framed in the interests of the public. Such a proposition, affecting a body of men who, like themselves, had spent large sums of money in qualifying themselves for the position they held was, moreover, a very unjust thing indeed.

Mr. HY. BALL said he had very great pleasure in rising to second the proposition. It appeared to him that the Lord Chancellor was under great misconception with regard to the matter. Looking back over their history he thought they need not be ashamed of what pharmacists and chemists had accomplished. When he mentioned on the one hand the name of Scheele, and on the other of Pasteur of later years, he thought they had every reason to be proud of their association with such men ; and when the Lord Chancellor at one fell swoop would deprive them of the title to which they had done honour since 1868—although they had done their best to observe the law and follow out all it required of them—when the Lord Chancellor proposed that they should have this title taken away from them, he (the speaker) said emphatically, "No, you shall not," and they would try to teach the Lord Chancellor to respect them. The speaker maintained that chemists were not mere traders ; society had called them into being, it demanded their services to-day, and they must take care never to lose sight of the professional side of their calling, for therein lay their future success.

Mr C. M. ADAMS said he thought they were all convinced that the Bill was wrong. They were as much entitled to consideration as other professional men, though as a pharmaceutical chemist he had no objection to being called a "trader." Mr. Adams said he was prepared, if neither candidate promised to vote against the Bill, to abstain from voting in this election. He would not vote for a man who would not vote for him. What he wished was to oppose the Bill ; he asked every man in the room to pledge himself in the same way, and not to let politics come in at all. If they could get the whole of those present to pledge themselves in that way, they could go to the candidates and offer that number of votes to the one who was most favourable to their demand.

Mr. SMITH (Waterloo) agreed with much that Mr. Adams and Mr. H. Ball had said. He thought Mr. H. Ball was quite right in attaching importance to the chemist's professional position, and he agreed with Mr. Adams that they were met to formulate strenuous opposition to the Bill in question. He thought they ought to prove to the candidates in that division that they were opposing the Bill of the Lord Chancellor consistently with the interests of the public, and as a matter of justice to themselves. They did not ask for concession, or claim anything they were not entitled to. They ought to explain to the candidates that the measure introduced into the House of Lords was in direct opposition to the spirit of the Act of 1868. That Act was passed solely for the protection of the public, to ensure the public against the careless handling and misuse of poisons and dangerous drugs by incompetent persons ; the position now occupied by limited companies was not one which they had earned. It was only a negative position which they occupied, and the present Bill, if passed, would legalise and perpetuate an anomalous state of things. He was convinced that unjust state of things could not be allowed to continue. and they ought at the present moment to sink all political differences for the sake of pressing their personal claims. They would be able to show that it was necessary for the proprietor of a chemist's business, who had the controlling voice in the purchase and manufacture of drugs, to be qualified and to have a knowledge of their properties, as well as the person who is employed in their preparation or sale.

Mr. S. J. ELLIOTT (Southport) said he had very great pleasure in being there for the first time for many years at a meeting of Southport chemists. He thought they would have to tie themselves to the one point, that the Act of 1868, passed for the protection of the public, was now found to be insufficient, because it did not deal with what was not contemplated then, viz , the action of limited or other companies. He thought that was the point on which they must try to educate the candidates and the public and eventually, through the Pharmaceutical Society, the House of Commons and the Legislature as a whole.

The CHAIRMAN then asked if there was any amendment to the proposition which had been moved by Mr. Pearson and seconded by Mr. H. Ball. No amendment was proposed, and the resolution was carried unanimously and with acclamation.

The Chairman afterwards introduced two questions which might be put to the respective candidates, which read as follows:—

1. Will you, if returned to the House of Commons, oppose to your utmost ability the present Pharmacy Bill (1899) of Lord Halsbury, which has already been read for the first time in the House of Lords?
2. Will you support an amendment to Lord Halsbury's (Medical Profession) Bill, 1899, "that chemists be included in that Bill," and that Clause No. 1 read, "It shall be unlawful for a company under the Companies Acts, 1862 to 1898, to carry on the profession or business of a physician, surgeon, dentist, chemist, or midwife, and if any company contravenes this enactment it shall be liable on summary conviction to a fine not exceeding £5 for every day during which the contravention happens?"

The Chairman left it for the meeting to decide whether the first or both of those questions should be put to the candidates.

Mr. Hy. Ball said it was quite certain that there was prospective legislation for the chemists, and he thought they should not let the present opportunity go by, but ask the candidates to do what they wanted, and to look upon them as a body of men who wanted merely rational treatment. He did not care so much how the question was put; but they should not miss the opportunity; let them put the question to the candidates whether they were prepared to look after the interests of the chemists in the division when they took their seat in the House of Commons. If they replied in the affirmative, they would support them, if not, they would not.

Mr. C. M. Adams proposed that the first question only be put to the candidates.

Mr. Jas. Righton seconded Mr. Adams' proposal.

Mr. Smith (Waterloo) said he did not think there would be any harm in asking both questions. They wanted pledges from the candidates as to what they would do in the future. Everyone must be convinced that before long pharmacy would have a good thrashing out in the House of Commons, and now they had a splendid opportunity to insist upon their interests being looked after by the candidate who was returned for Southport. He thought that as a matter of policy they ought to get support from the candidates on some such question as the second one as well. He proposed as an amendment that both questions be put to the candidates.

Mr. H. Ball seconded that amendment.

The amendment was then put to the meeting, and was carried by 23 votes to 7.

Mr. C. M. Adams then proposed, and Mr. Smith seconded, that the deputation (which had to meet the respective candidates on the following morning) should consist of the following gentlemen:—Messrs. H. Threlfall (solicitor), Pearson (Waterloo), Smith (Waterloo), Stockdale (Blundellsands), Geo. Ball, Hy. Ball, J. R. Cave, J. Joye, Jas. Righton, S. J. Elliott (Southport), and Wilding (Birkdale).

Mr. J. R. Cave proposed that their best thanks be given to Mr. J. Righton for his services as Secretary in that matter.

Mr. H. Ball seconded, Mr. Ratcliffe and the Chairman supported, and thanks were accorded with acclamation.

Mr. S. J. Elliott (Southport) then proposed that a local association be formed of the chemists in the Southport parliamentary division; and after considerable discussion, the motion was seconded by Mr. H. Ball and carried.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

The annual general business meeting of this Association was held at the Westbourne Restaurant, Craven Road, Paddington, W., on Wednesday, May 24. There was a large attendance of members, and the President, Mr. J. F. Harrington, occupied the chair.

As the day was the occasion of the Queen's birthday, the President, in the course of a loyal speech, invited all present to drink Her Majesty's health with him. The toast was drunk with enthusiasm, and the President then said there was no particular subject down for discussion that evening, but he wished to bring one or two matters before the meeting. Referring to the minutes of the last meeting, in which reference was made to the then forthcoming Council election, the members of the Association pledging themselves to support his candidature, the President said they doubtless were all aware that he had been elected and that he took a very fair position in the list of successful candidates. He desired to take that opportunity to tender his sincere thanks to the Association and to all who supported him at the poll. He hoped to be able to give his undivided attention to the work of the Council during his three years of office and to assist in bringing about some good for the benefit of pharmacy generally.

The President then referred to the fact that the Secretary had received a number of letters urging the Association to take steps to oppose

The Lord Chancellor's Pharmacy Bill.

They were aware that the Pharmaceutical Council had decided not to oppose the Bill in the House of Lords, but to wait until it reached the House of Commons, when every member of that and other associations would be asked to endeavour to urge upon the gentlemen in the House the necessity of opposing the Bill. He thought it would be best for that Association to leave the matter for the present in the hands of the Pharmaceutical Council, and with its own Committee, and to be ready to act when called upon. He might say, however, that there seemed to be an opinion abroad that the Bill will never reach the House of Commons.

The next matter to be dealt with was with regard to the

British Pharmaceutical Conference, 1900.

The Association had decided to send an invitation to the Conference to hold its meeting next year in London, and he had every reason to believe that the invitation would be accepted. There had been a provisional committee appointed to act in the matter, but it would be necessary for a resolution to be passed by the members.

Mr. J. W. Taplin said he should like to propose that the President, Messrs. Cracknell, Gulliver, Mathews, Parker, and Philp be appointed as delegates to attend the meeting of the British Pharmaceutical Conference at Plymouth, to invite the Conference to hold its next meeting in London. He thought if that were carried it would give the Committee of the Conference plenty of time to consider the invitation.

Mr. J. C. Hyslop had pleasure in seconding the motion.

Mr. W. Martindale supported. It was more than twenty years since the Conference met in London, and he thought it would be a good thing for it to be held in London again. The Conference seemed to bring a number of people to London the last time, who thus were brought into closer touch with the Pharmaceutical Society than they would otherwise have been, for undoubtedly the Conference was a great deal more popular than the Society. He could only account for that by the fact that so many chemists' sons often had to come up again and again in order to pass the examinations, hence the Society was not looked upon very favourably in some quarters. Of course, it was the duty of the Society to pick out the best men to follow the occupation of chemists. There were far too many undesirable persons already following, and others anxious to enter, the craft, and if the status of chemists was to be improved it was necessary to have a better class of men. Matters were bad enough now in pharmacy, but it would be far worse if the obnoxious Bill now before the House of Lords should pass. It would be a retrograde step, and they ought to fight that Bill with all the energy possible if it ever reached the House of Commons. They would have to raise the warcry "For our Safety." Coming back to the motion before the meeting, Mr. Martindale said that if the Conference was again held in London there would no doubt be a hearty welcome. On the last occasion it had a London president (Mr. T. B. Groves), but he thought it would be advisable next time to have a good representative country chemist as president. He also thought that the invitation would come better from that Association than from the Society.

Mr. Taplin's motion was then put and carried unanimously.

Other Business.

The President then referred to the annual outing of the Association, which was usually decided upon at that meeting. He thought under the circumstances it would be well to postpone the outing, and to put all their energy into the arrangements which would be necessary if the Conference accepted the invitation.

Mr. Mathews and Mr. Martindale having spoken, it was decided to postpone the annual outing till next year.

The President thanked Mr. Martindale for reminding him that while the invitation to the Conference would go from that Association, it was not intended that it should carry out all the arrangements. A representative committee of London chemists would have to be appointed for that purpose.

The next business was to fix the date and place of the annual dinner of the Association, and a suggestion was made by Mr. Marsh that ladies should be allowed to attend. The Association, he said, was only a small one, and he did not see why the members should

not be able to invite their lady relatives or friends. He thought ladies were now sufficiently educated to smoking and would not object to it.

Several gentlemen having expressed their views, it was decided to discuss the subject at the meeting to be held the third Wednesday in October.

On the motion of Mr. Cracknell, seconded by Mr. Mathews, it was agreed to hold the annual dinner at the Café Royal, Regent Street, W., on November 15 next, the President and Messrs. H. Cracknell, J. H. Mathews, and G. S. Taylor being appointed a Committee to carry out the arrangements.

Mr. Taplin then brought up the question of a more suitable room in which to hold the Association's smoking concerts, the present one being in his opinion too confined for the purpose.

It was decided to leave the matter in the hands of the Secretaries to look out for a room and report to next meeting.

FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION.

The annual meeting of this Association was held at Kirriemuir on May 24. On arrival, members were taken for a drive round the district, on the invitation of Mr. Ford. It proved very enjoyable. At the business meeting, Mr. Kerr was elected President, Mr. Doig Vice-President, Mr. W. Cummings Secretary, and the Committee as before, except that Mr. McFarlane takes the place of Mr. Fowler (Forfar.).—Mr. Kerr gave a résumé of the work done at the several meetings held during the year, and said they might fairly be congratulated on the results of their efforts. In addition the Committee had devoted much time and attention to the various subjects brought under notice by the Pharmaceutical Society and the Federation.—The Secretary presented the financial statement, which showed a favourable balance, and was considered satisfactory.

The Annual Dinner.

The annual dinner was held at the Ogilvy Arms Hotel, and about twenty sat down to an excellent dinner.—Mr. Kerr was Chairman and Mr. Ford, Croupier.—Mr. J. W. Russell, who proposed "the Pharmaceutical Society," said he did so with pleasure, as it was evident it was now on a more popular basis since chemists were eligible to be members of the Society.—Mr. Jack (Arbroath) replied.—Mr. Thomson (Lochee) proposed "The Federation of Local Pharmaceutical Associations," which he said was a necessary link to bind the different associations together for effective action.—Mr. Currie (Glasgow) replied, and said he was gratified at the activity shown by the Forfarshire Association, which showed a good example to others. He commended the wisdom of meeting in the principal towns of the district by turns as a means of creating local interest and good feeling.—Mr. Kerr, in replying for the Forfarshire Association, said he would attain his pharmaceutical jubilee in June, and that he should now make way for younger men in the Association.—Mr. Naysmith proposed "Kirriemuir" which he said was now one of the most celebrated towns in the kingdom, thanks to Barrie.—Mr. Ford replied and thanked the Association for the honour of their visit.—Mr. Ferrier (Brechin) proposed the "Chairman," and Mr. John Anderson (Dundee) the "Croupier."

NOTES OF ROYAL INSTITUTION LECTURES.

The Structure of the Brain in Relation to Its Functions.

BY FREDERICK WALKER MOTT, M.D., F R S.

The earliest information that was known concerning the brain was the relationship between the nerve cells in the grey matter to the fibres in the white matter. Of late years many workers have attacked the subject, with the result that in countless ways the structure of the brain has been proved to have a definite relation to its functions.

Though all brains are architecturally built on the same plan, they increase in complexity as they rise in the zoological scale. In man the microscopic nervous units of the brain are more numerous, more varied, and more complex than those of the lower orders of creation. Broadly speaking, the centre part of the brain is white, and is surrounded by a mantle, rind, or cortex of grey matter, composed of millions of cells. A piece of the brain of the size of a pin-point was magnified and shown to contain two hundred nerve cells. These cells are rendered visible by depositing silver upon them; each cell is then seen to be a separate unit, in contiguity to its neighbours, but not in continuity with them. Each nerve unit is in communication with one fibre, and may branch. The branchings are protoplasmic processes, and are known as dendrons. The fibres in the white matter carry impressions to the nervous units. There are certain other fibres, arranged transversely, that form a connection between the impression and the subsequent voluntary movement, thus, as it were, providing a connection between the arrival and departure platforms. In the absence of these transverse fibres the individual suffers from paralysis.

When blood fails momentarily to gain access to the grey matter unconsciousness is the result. The number of nervous units is increased in proportion as the substance of the brain is convoluted. The greatest number of convolutions will be found in the brain of the cultured European. It is important to know that intelligence is dependent on the size of the superficial area of certain regions of the brain, and not on its weight. The injury of one region affects articulate speech; the injury of another causes word deafness, whereby the individual can speak and read, but cannot understand when spoken to. All the centres are connected by neurons, or nerve units, and when certain parts are free specific disorders are set up, *e.g.*, disorders of speech. All the senses have their centres, *e.g.*, those of sight, taste, smell, and hearing. No special function has yet been allocated to parts of the brain amounting in all to two-thirds of the whole, but such discoveries as have hitherto been made have been of great value to physicians and surgeons.

In the new-born infant certain parts of the cerebral region are prepared for functional activity before others; thus, the power of vision is soon established. It remains, then, for stimuli from without to rouse the brain to volitional movements. After the development of the nervous units the sensory impressions are made to co-ordinate with the motor channels. A vast amount of knowledge has yet to be gained concerning the centres of memory, judgment, and the higher functions of mind. The frontal lobe is thought to be associated with intelligence, in spite of an accident that befell an American surveyor, which goes to prove the contrary to be the case. He was superintending some blasting operations, when, owing to a premature explosion, a crowbar was driven into the frontal part of his brain. After skilful medical treatment he recovered, and was as capable of performing his arduous duties as before. The brains of many remarkable men, *e.g.*, Baron Liebig, have shown extraordinary convolutional development of the posterior lobe, and the brains of Beethoven and John Sebastian Bach have shown that marked musical talent may be associated with a similar development.

Many theories have been propounded to account for sleep, unconsciousness, trance and hypnotism, and artificial unconsciousness produced by anæsthetics. A prevalent view is that these phenomena are due in the first place to retraction of the terminal twigs of the neurons on the surface of the brain. Against this view a case is recorded of an animal being under chloroform for four hours without retraction taking place. Some observers think that cerebral activity is associated with the cutting off of inter-neuronic connections.

The substance of the neuron consists, biochemically, of two parts, one stainable with certain aniline dyes, the other unstainable. The former is a food substance, and is used up when the brain is active. When the brain is exhausted the amount of unstainable substance increases. The destruction of the nerve units is marked by the extrusion of the nuclei. The brain of a man who died from the effect of successive epileptic fits showed, on examination, that the nuclei were nearly extruded. Though little is known of the composition of the nervous elements, the lecturer emphasised one point, viz., that the neuron is an independent unit—a microcosm in a macrocosm.

Multiple Colour Illumination.

The exhibits included a magnificent series of microscopic objects, diatoms, etc., illustrating Mr. Julius Rheinberg's methods of multiple or differential colour illumination. These were arrived at by following up the discovery that the interposition of a piece of coloured glass between the lamps and the mirror caused the uncoloured object under observation to assume a sensible difference in colour from its background. It is possible to make any object assume any colour at will by optical means. In many circumstances also definite parts of the same object may be made to assume different colours; *e.g.*, a white silk fabric may be so illuminated that the horizontal threads appear blue, whilst the vertical ones appear red—the whole on a black ground.

The three methods of multiple colour illumination are each brought about by the placing of transparent discs, whose central

portions differ in colour from the periphery, somewhere in the path of the rays of light proceeding from the source of illumination. Briefly the methods are as follows:—1. The refraction method; the colour disc is placed in the diaphragm holder of the substage condenser, a low or medium power objective is used, and the object is illuminated by the full aperture of the condenser. Just as in the well-known dark ground illumination, the central portion of the disc intercepts the whole of the light that can get into the objective, provided there is no object in the field. The colour of the central portion of the disc therefore becomes the colour of the background. When the object is placed in the field, the light which has passed through the peripheral portion of the colour disc impinges on it obliquely. The object alters the direction of this light and refracts it into the objective. Now, as this oblique light proceeds from a much larger surface area than that which reaches the objective after passing the central portion of the colour disc, the object assumes the colour of the peripheral portion.

2. By the diffraction method, for objectives of high and medium powers, the colour disc is placed above or between the lenses of the objective, and the light transmitted by the substage condenser is cut down by the iris diaphragm to a narrow cone that only just fills the centre of the disc, leaving the surrounding part unilluminated. The colour of the central portion gives the colour to the background, while the object assumes the colour of those rays which it diffracts; these rays pass through the peripheral portions of the disc.

3. The composition method, which is suitable for objectives of all powers, is based on the combination of different coloured rays of light, by means of prisms or lenses, to form white light. The disc, preferably with a red centre and a green periphery, is placed in the diaphragm holder as before, and the iris diaphragm closed until the light is approximately white. The background therefore appears uncoloured. When an object is placed in the field, the ridges, etc., take up more of the oblique green rays, while the finer and more transparent structure catches and passes up more of the red light. The object appears, as a consequence, in various shades of green and red on a white background.

Some Features of the Electric Induction Motor.

BY PROFESSOR C. A. CARUS WILSON, M.A., M.INST.E.E.

The lecturer first performed and discussed the experiments which had led up to the single phase alternating motor, in which the moving parts were supplied with momentum by means of a fly-wheel big enough to carry it over the "dead-point." Owing to certain disadvantages, this form of motor was little used in industrial enterprises. Better results were obtained by making use of magnetic momentum, as in the electric induction motor. Many beautiful experiments were shown, illustrating points connected with the "rotating field," which is incidental to the action of the induction motor, rather than necessary to it. The many different views that are held as to the action of the induction motor were then alluded to. In the lecturer's opinion it is most easily treated of as a transformer.

At the Royal Institution no lecturer on an electrical subject allows to slip by a chance of eulogising Faraday. Professor Wilson, on this occasion, remarked that one who asked Faraday what was the use of some of his investigations on electric induction received the following characteristic reply: "I am quite content to investigate the principles underlying the main facts of electric induction, and leave their developments to other times." Faraday, in truth, discovered electric induction; he laboured, and the present generation is entering into his labours.

New Alkaloidal Precipitant.—Silicotungstic acid, $(WO_3)_{12}.SiO_3.2H_2O$, or its alkaline salts, is stated by Bertrand to be a very delicate precipitant for alkaloids, giving precipitates which are voluminous, easy to collect, perfectly stable, insoluble in water or dilute acids, but readily liberating the alkaloids when treated with fixed alkalies or ammonia. These precipitates have the formula $(WO_3)_{12}.SiO_2.2H_2O$. 4 Alkaloid + nH_2O. Oxidising agents readily decompose these compounds, so that the silicotungstic precipitate may be used directly to obtain characteristic colour reactions, such as that of strychnine with bichromate and sulphuric acid.—*Comptes rend.*, 127, 742.

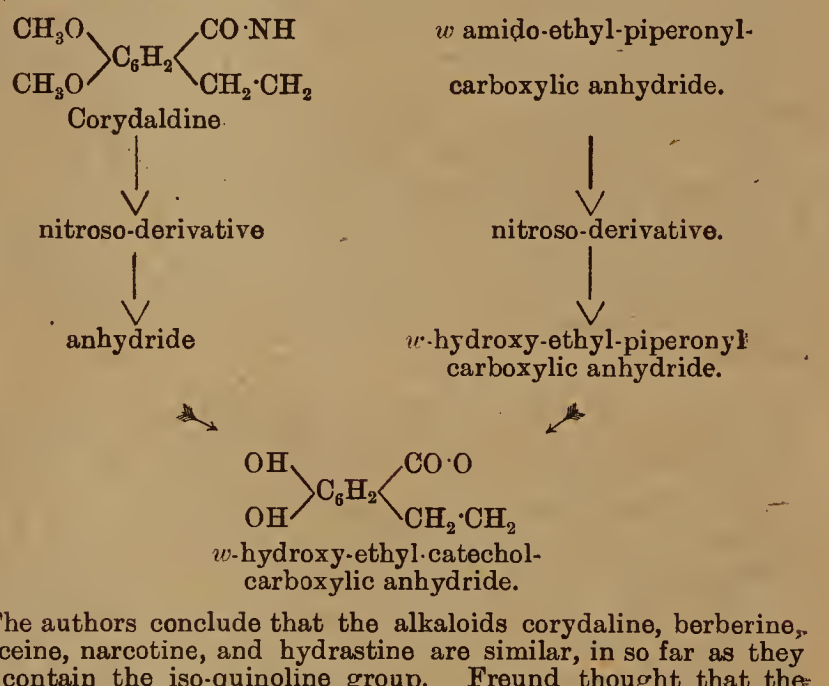
CHEMICAL SOCIETY.

A meeting was held on Thursday, May 18, the President, Dr. Thorpe, F.R.S., in the chair.

The first paper, by J. J. Dobbie, Ph.D., and A. Lauder dealt with

Corydaline,

this being the sixth communication by the authors on the subject. They have definitely established the relationship that exists between the alkaloids corydaline and berberine. On oxidising corydaline with potassium permanganate and extracting with chloroform the product corydaldine was obtained, having a neutral reaction; it gave no addition product with phenylhydrazine. With nitrous acid corydaldine gave a nitroso-derivative, which, when warmed with sodium hydroxide, gave off all its nitrogen, passing to the difficultly soluble anhydride. The phenolic derivative was found to be identical with the *w*-hydroxy-ethyl-catechol-carboxylic anhydride obtained by Perkin from berberine. The following table shows at a glance the relationship between these alkaloids:—



The authors conclude that the alkaloids corydaline, berberine, narceine, narcotine, and hydrastine are similar, in so far as they all contain the iso-quinoline group. Freund thought that the $\cdot CH_3$ groups were attached to the nitrogen in such alkaloids, but with this opinion the authors disagree. The investigation of the acids, including hemipinic acid, obtained as oxidation products of corydaline, leads to the conclusion that corydaline is most like berberine and papaverine. The corydalic acid of a former paper of the authors turns out to be an acid salt of hemipinic acid.

Mr. Wyndham R. Dunstan, in congratulating the authors on what he termed a very brilliant piece of work, remarked that it had resulted in a nearly complete knowledge of the constitution of the parent alkaloid corydaline.—The President, taking up a similar strain, paid a compliment to Professor Dobbie on account of the lucid manner in which he had set forth the details of this somewhat intricate subject.

Mr. C. F. Cross then followed with an account of the

Oxidation of Furfural by Hydrogen Peroxide,

by himself, in conjunction with Messrs. E. J. Bevan and Th. Heiberg. The paper led up to a subject of deep interest, the oxidising action of hydrogen peroxide. Of the oxidation of furfural itself little need now be said. The attempt was made to convert a hexose into a pentose, and various unsaturated compounds were tried. It was anticipated that the investigation might possibly lead to some evidence as to the constitution of ligno-cellulose, and throw some light on the mechanism of the action of hydrogen peroxide as an oxidising agent. The oxidation product was variously treated. With phenyl-hydrazine acetate it gave a mixture of hydrazones, all with a $C_5H_4O_2$ residue. Barium acetate gave a salt, which left no doubt that the authors were dealing with the furfural phenol.

They conclude that when hydrogen peroxide acts as an oxidising agent it first splits up into hydrogen and oxygen. They have every reason to believe that hydrogen peroxide is reduced oxygen, and not oxygenated water.

The formation of furfural phenols was to be expected from the action of furfural derivatives generally. When benzene is treated with hydrogen peroxide the yield of phenol is from 10 to 20 per cent. It is readily isolated in the usual way by distilling the product with steam.

The PRESIDENT then called for a discussion, remarking that the work was of considerable importance and range, embracing a variety of topics. He said he should much like to hear the opinions of the members as to the mode of action of hydrogen peroxide, and suggested that it was desirable to discuss the validity of the theory put forward by Mr. Cross and colleagues.

Mr. FENTON, rising in response to a nod from the President, contented himself with congratulating the authors and sympathising with them in that some French workers have recently entered the same field of operations uninvited.

Dr. WYNNE preferred to think that oxygen and water agree to act as if they were hydrogen peroxide.

Mr. DUNSTAN, while doubting the splitting of hydrogen peroxide into hydrogen and oxygen, agreed with the theory that hydrogen peroxide is reduced oxygen and not oxygenated water.

Professor COLLIE said he had lately found hydrogen peroxide an exceedingly useful oxidising agent in the laboratory in the case of compounds containing upwards of five carbon atoms. He was averse to the view that hydrogen peroxide acts as if it were water plus oxygen, as a full amount of oxygenated products is not obtained by its use. According to Brill's recent researches, the refractive index shows that it is not di-hydroxyl. It must therefore be either reduced oxygen or oxygenated water, between which Professor Collie himself could see no difference. The enormous work done by hydrogen peroxide in nature must, he thought, lend an additional interest to the inquiry into its mode of action.

The PRESIDENT also considered the di-hydroxyl theory untenable. The fact has been established that the viscosity of a liquid is connected with the number of hydroxyl groups which it contains. As hydrogen peroxide is not particularly viscous, those who study the relationship between viscosity and chemical constitution have strong evidence against this di-hydroxyl theory.

Mr. CROSS having replied to the various points brought forward, a steady outflow of members set in, while Mr. R. H. ADIE gave an incomplete account of some rough experiments on

The Reactions between Sulphuric Acid and Various Elements.

The author explained that a recent paper on the subject forced him to give to the Society the results of incomplete experiments done some years ago, in order to claim for himself a right to that field of investigation. Quantitative determinations were made; as a result it is found that almost every element except platinum decomposes sulphuric acid below its boiling point. In nearly every case the temperature of decomposition is lowered as the atomic weight rises. Two sets of elements were given as an example: (1) zinc, 250° C.; cadmium, 205°; mercury, 120°; (2) arsenic, 110°; antimony, 90-95°; bismuth, 90°. The zinc was a pure sample of that used by Professor Ramsay for the determination of its atomic weight. The elements nickel and palladium give sulphides as well as sulphates when acted upon by sulphuric acid.

At the conclusion of the paper the author left hurriedly to catch his train and the members indulged in a sort of conversation about the results brought forward. It was generally agreed that, considering the extreme difficulty of obtaining arsenic, antimony, bismuth, and other elements in a state of absolute purity, the figures must be taken only as approximations.

Two papers were taken as read, the hour boing late:—"Chemical Changes Produced on Lead by Immersion in Distilled Water," by F. Clowes, and "The Action of Ethylene Dibromide and of Trimethylene Dibromide on the Sodium Derivative of Ethylic Cyanacetate," by H. C. H. Carpenter and W. H. Perkin, jun.—The meeting then adjourned.

TANNOCASUM (CASEIN TANNATE).—G. Romijn prepares this compound by the following method: Purified caseine, 1 kilo., is dissolved with sodium carbonate in water, 10 litres, and a solution of tannin, 700 Gm., in water, 3 litres, and formaldehyde solution, 100 C.c., are stirred in. The mixture is neutralised with very dilute hydrochloric acid, the precipitate pressed and dried with heat. A light brown substance is obtained, which readily powders. It is introduced as a substitute for tannalbin, tannoform, etc.—*Pharm. Zeit.*, 44, 179, after *Pharm. Weikbl. v. Nederl.*

LETTERS TO THE EDITOR.

Chemists and the Southport Election.

Sir,—Though a resident in Liverpool, I happen to have a vote in the parliamentary division of Southport, and formed one of the deputation which interviewed the candidates in the forthcoming election, but I have no claim to any portion of the credit for the splendid success which has attended the action of the Southport chemists. Nor, by the way, have I any share of the responsibility for the solicitor's (Mr. Threlfall) extraordinary exposition of present and prospective pharmacy law. In the circumstances I feel at liberty, without the fear of appearing to appropriate personal credit, to write freely upon the subject. The chemists of the Southport division have set an example which might be profitably followed in every parliamentary division in tho kingdom. In that town there is no local association or other organisation for consolidating the interests of pharmacy, and yet a few active men were able to get a satisfactory and representative meeting of chemists, who pledged themselves to sink politics in the interest of their calling. Within a day or two of the announcement of the names of the candidates arrangements were made for ascertaining their views, the meeting was called, and the deputation appointed. The questions put to the candidates, together with their replies, will no doubt appear on another page (see pp. 496, 498). The purpose of this letter is to call attention to the potential influence that lies within our grasp. What has been done in Southport can be done elsewhere. It is possible that now and again we may put our money on the wrong horse, but if the same action be taken in other constituencies, especially where the contest is likely to be a close one, the aggregate gain to us cannot fail to be considerable. As a man who, though to some extent a participant, was little more than a looker-on, I feel impelled to record my experience of the immense advantage which has resulted from the combined action of the Southport and district chemists. I believe every man will honourably abide by the pledge he has given. There is no political question of national importance before us at the present time, we may therefore devote our attention to a settlement of the question of pharmacy law. When that settlement has been arrived at we can return to general politics.

164, Aigburth Road, Liverpool, JOHN SMITH.
May 22, 1899.

Unqualified Opinion.

Sir,—I beg to protest most strongly against any opportunity being given in the pages of the *Pharmaceutical Journal* for the expression of opinions upon pharmaceutical matters by the pirates of the drug trade. They may express themselves elsewhere—they have never been slow to do so—and we have no right to protest, but when they venture to invade the pages of our one official Journal, I think we have every right to protest. They know that they do not merit any consideration at our hands. Is it not a fact that almost every advertisement these men publish is an ungentlemanly and uncourteous attack upon qualified men? Have they not billed the very House of Commons itself with vulgar circulars, printed in red, and blue, and green, and magenta, and yellow ochre, in a vain effort to stop the wheels of pharmaceutical progress? I consider that after all this it is a piece of unmitigated impudence that they should venture to address us in our own Journal. You yourself said at the time that the circular which was distributed in the House of Commons was a most impudent production. Why then should we treat them with courtesy or consideration? If a shoemaker or tailor were to set up practice in medicine, and offer his opinion upon medical matters to the *British Medical Journal*, think you that they would be published. I think not. So unjustly have the chemists of this country been treated in recent years that I have been wondering whether my views of justice and right are not at fault, and so I have been looking in the beatitudes this morning to see whether it is not set down there that "Blessed are the impudent, for they shall inherit the earth." The words of the good old Book have not, however, become transformed yet, and its declarations in regard to morality and justice remain unchanged. Although these men may by a long course of injustice have persuaded themselves that their conduct is not so reprehensible after all, the wheels of God have not stopped. These wheels are axled on justice, and I will never believe that they are so slow in their movements as to fail of overtaking these men. If I did not believe that this is a fight between moral right and moral wrong, between justice

and injustice, I would never take further part in it. It is just because I firmly believe in the final triumph of justice that I am so certain of the overthrow of these men. It is, I protest, a sight to make angels weep to see young men struggling through a long course of study, labouring through hard examinations, emerging with faces lighted up with triumph at the examination room door, only to find these leeches waiting to suck the very heart blood from them. To me it appears infinitely worse than pocket-picking. If one loses one's purse, one feels it for a week, a month, a year, but these leeches never leave the backs of qualified men until the last sod is placed over their graves. It is lifelong slavery. It is an injustice to the existence of which the country is fast awakening, and no red herring of boasted shareholders will save these men. No matter what effort they may make to paint themselves as just men and public benefactors, I would urge upon chemists to remember that there is no precedent for their position. It has never been declared just, by either the moral law or the law of the country, that unqualified persons should be allowed, by any device or evasion of the law, to conduct practice in professions for which the State has demanded special individual qualification, and I still trust that no such odious principle will ever be established in this or any other civilised country.

Dumfries, May 22, 1899. JAMES REID.

Sir,—With regard to the concluding portion of Mr. Boot's letter; if he knows of the sale of poisons being made by unqualified persons, is it not his duty to inform the official Registrar, who would bring the cases before the body charged with administration of the Pharmacy Act in the public interest. Further, with regard to the implied charge that the Council of the Pharmaceutical Society is not impartial in regard to the prosecution of companies and of chemists infringing the provisions of the Act; but is unduly lenient towards the latter, my impression is contrary to Mr. Boot's statement, and I would remind Mr. Boot of two prosecutions within recent years, viz, the prosecution by the Pharmaceutical Society of one of its past-Presidents and also of one of its local secretaries for infringements of the Pharmacy Act. These cases and an impartial inquiry into the general administration of the Act would, I feel certain, lead Mr. Boot to a very different conclusion.

Edinburgh, May 23, 1899. CLAUDE F. HENRY.

A Correction.

Sir,—Referring to the action the Pharmaceutical Society *v.* Carter and Long, mentioned in the *Pharmaceutical Journal* of May 20, we notice it was stated in the evidence that the "Sloane Pharmacy Stores, Ltd.," purchased the business from Bishop's, Ltd. We beg to point out that we are not a limited liability company, the only persons interested being the two partners, Edward James Bishop and Robert Vincent, both qualified chemists. We shall be glad if you will kindly rectify this in your next edition.

460, Holloway Road, N., May 20, 1899. BISHOP AND VINCENT.

Re The Ulster Medical Hall (Davidson and Hardy), Belfast.

Sir,—In regard to the paragraph appearing in "Irish News" in your issue of May 6, and objected to by Mr. Hardy (Davidson and Hardy), I beg to say that it was founded upon a very general rumour in pharmaceutical circles in the city for some time previous to its publication, and was written as *bonâ fide* news without any ulterior or malicious motives whatever. However, in face of the absolute denial of its accuracy by Mr. Hardy, I regret having written it, and beg unreservedly to apologise to Messrs. Davidson and Hardy for its publication.

May 18, 1899. BELFAST CORRESPONDENT.

Mr. T. Maben.—Your third letter on the subject of Preliminary examination regulations is considered to be as unsuited for publication as the previous ones were held to be. The opinion you desired to express in opposition to the editorial remark (p. 417) as to the effect of the exemption made by Scotch Universities has already been published in your own words (see p. 468) and, after conferring with the President, the Editor is of opinion that further discussion in the Journal is undesirable. Officially it is considered that members of the joint committee, who may naturally have influenced its action in regard to details, should not discuss those points in the Journal. The Editor therefore, proposes to place your letters before the General Purposes Committee of the Council next month.

Pepsine Testing.

Sir,—In your reference to pepsine testing (page 466) you allude to the "lighting back" of the Bunsen flame when low temperatures are required. This difficulty can be overcome by the use of wire gauze caps fitted over the orifice of the Bunsen. A flame so small as to be almost invisible can easily be thus obtained, and it does not deposit soot. These little devices I have for a long time recommended and had in daily use in my laboratory. Another useful plan when many samples of pepsine have to be examined is to use a large volume of water at the required temperature, and float in it wide test tubes containing the pepsine mixture, by inserting them through holes made in large cork bungs. Each test tube should carry a suitable stirrer, as stirring is an essential part of the operation.

Birmingham, May 23, 1899. F. H. ALCOCK.

Why do Not More Subscribe?

Sir,—I have read with much interest Mr. Osborne's letter in last week's Journal. If his suggestions could be carried out I feel sure they would greatly strengthen the ranks of the Society.

Fleet, Hants, May 24, 1899. A. GOWEN.

The Recent Council Election.

Sir,—May I, through your columns, thank very heartily the 1498 gentlemen who were good enough to support my candidature at the recent election for the Pharmaceutical Council, and assure them that, although unsuccessful, I am not the less obliged to them for their kindness.

118, High Street, Oxford, May 24, 1899. G. C. DRUCE.

ANSWERS TO QUERIES.

Pharmaceutical Chemist (P. W. J.—29/6).—Certainly, anyone who has passed the Major examination is entitled to use the abbreviation "Ph.C." or "Ph.Ch." after his name.

Lemon Syrup for Seltzogene (R. R. L.—28/29).—Fresh grated lemon-peel, 4; alcohol (90 per cent.), 8 fl. pts. Macerate for seven days, strain, and press. Dissolve citric acid, 1, in water, 2, and add the solution to simple syrup, 90 fl. pts.; then mix the lemon tincture.

Dryobanalops Aromatica (J. C. S.—29/1).—We understand that the museum specimen referred to has been kept in the same bottle for more than twenty-seven years. Volatilisation has taken place to a slight extent but, as Pereira has pointed out, one of the distinguishing characters of the substance is that it does not sublime so readily as ordinary camphor.

Botanical (W. R.—29/18).—We are not aware that there is any book specially devoted to the anatomy of British plants. Most systematic books give an account of the morphological characters of the different species. Hayward's 'Botanists' Pocket Book' (G. Bell and Co., 4*s.* 6*d.*), and Fitch and Smith's "Illustrations of the British Flora' (L. Reeve and Co., 10*s.* 6*d.*) should answer your purpose.

Chemical Barometer (H. R. F.—29/13).—Potassium nitrate, 30 grains; ammonium chloride, 30 grains; camphor, 120 grains; rectified spirit, 56 overproof, 2 ounces. Put the mixture in a test tube about 10 inches long; tie over the mouth with a bladder or piece of parchment paper, and prick a pinhole in it. When fine weather is anticipated, the crystalline precipitate will settle and the solution remain clear. When rain impends, the precipitate will gradually rise; for some hours before a sudden storm, the suspended matter will be partly on the surface, or rise and fall, and the liquid will be turbid.

To Dye Fair Hair Grey (W. T.—29/7).—This is an unusual requirement; the reverse is more frequently desired. Probably your most likely method of obtaining the desired tint would be to bleach the hair thoroughly by the free application of hydrogen peroxide, previously carefully removing all the natural fatty matter by washing with dilute ammonia in soft (rain) water. Then very cautiously darken the bleached hair to the required tint by the application of a very little dilute ammonio-nitrate of silver solution. The latter must be very dilute, or you will darken the hair too much. Cut off a small lock and experiment with it before applying the solutions to the head.

ROYAL COLLEGE OF SURGEONS 2 JUN 99

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Crystalline Calcium Phosphide.

By carefully heating a mixture of calcium phosphate and lampblack in the electric furnace, H. Moissan has succeeded in obtaining calcium phosphide in the form of minute, deep red crystals. These have the composition Ca_3P_2; by heating metallic calcium and phosphorus together *in vacuo* the same body is obtained in an amorphous condition. The action of the compound with various bodies is fully recorded and attention directed to the fact that most of the binary combinations of calcium are readily decomposed by water, giving calcium hydrate and a hydrogen compound of the other original constituent. Thus calcium hydride with cold water evolves hydrogen; calcium carbide, acetylene; calcium nitride, ammonia; and calcium phosphide, phosphoretted hydrogen; while Lebeau has shown that calcium arsenides and antimonides, under like conditions, give similar hydrogen compounds.—*Comp. rend.*, **129**, 787.

Silico-Tungstic Acid as an Alkaloidal Reagent.

Further particulars are now available of this reagent, a brief notice of which appeared in last week's issue (see p. 500). G. Bertrand reports that it is free from the objections raised against many reagents at present employed for the purpose. Thus, it does not precipitate the salts of potassium and ammonium, as is the case with platinic chloride. It is cheap, is well adapted for the extraction of alkaloids, and gives stable, well-defined salts, which are easily analysed with exactness. For some analytical determinations the molecular weight of silico-tungstic acid (about 3000) renders it especially suitable. It is the most sensitive of all the known alkaloidal precipitants, and nothing is easier than to obtain the alkaloids from the precipitates. The free acid $12WO_3{\cdot}SiO_2{\cdot}2H_2O$, or its alkaline salts, may be used. Wyrouboff recommends for qualitative analysis a solution made with five grammes of the crystallised acid or the sodium salt, in a hundred cubic centimetres of distilled water. The precipitates are insoluble or slightly soluble in cold water, and a little more soluble in boiling water. The ease with which the alkaloids are liberated from the precipitates is one of the principal advantages in using this reagent. They are instantly decomposed in the cold by alkalies. The action of silico-tungstic acid has been tried on a number of glucosides, *e.g.*, amygdalin, arbutin, coniferin, digitalin, salicin, etc., also on starches, tannin, gum arabic, and asparagin. Except with albuminoid bodies, for which the acid is a delicate reagent, no precipitate was obtained in acid or neutral solution.—*Bull. Soc. Chim. de Paris*, **9**, 434.

Antiseptics in Food.

At a recent meeting of the Incorporated Society of Medical Officers of Health, a paper was read by Dr. Alfred Hill, the Medical Officer of Health and Public Analyst for the City of Birmingham, on the subject of the use of preservatives or antiseptics in food. A number of medical officers of health and public analysts were present, and as the result of a discussion the following resolutions, according to the *Analyst*, were adopted:—(1) "That the Incorporated Society of Medical Officers of Health strongly disapproves of the practice of adding preservative chemicals to milk and other foods; (2) That if preservative chemicals be added to any food, a full disclosure as to the nature and amount thereof should be made to the purchaser." Resolutions of this kind passed by a body of men well fitted to form an opinion as to the consequences that may ensue as a result of adulteration cannot fail to leave their mark on the minds of those who frame laws regulating the sale of foodstuffs. It is manifest, however, that the use of preservatives for foods is on the increase, judging by the large quantity of tinned and potted meats, fruits, and vegetables that now find a place in every shop where food is sold for human consumption. How far chemical substances enter into the preserving processes it is difficult to say. Obviously a line of demarcation must be drawn between chemical preservatives that are harmful and those that are innocuous to man. To do this, much careful and personal observation is necessary on the part of medical men as to the precise effect of known chemical food preservatives on the health of human beings. At present, opinions are divided, say, for instance, as to whether or not boric acid is harmful. Possibly no chemical substance is more generally used for the purpose than boric acid, especially in the case of the preservation of milk. Supposing that boric acid should prove to be harmless, it would be unwise to restrict its use, inasmuch as it is better to supply food in a sound condition than in an unfit state, even if artificial means have been resorted to in order to attain the desired end. Even then the adoption of the second resolution of the Incorporated Society of Medical Officers of Health should be insisted upon, so that such milk might not inadvertently be employed for the nourishment of infants and invalids.

Variation in Desmids.

G. West has shown, in a paper read before the Linnæan Society, that the Desmidieæ are morphologically specialised and exhibit a marked pattern and symmetry of form, major and minor symmetries being recognisable in many species. Variations in form and symmetry were specially dealt with in the paper, and a summary was given of all that is known concerning the variation in the cell-contents and in the conjugation of Desmids. Observations were also made on the variability of the pyrenoids and moving corpuscles in the genus *Closterium*. The structure of the cell-contents appears to be one of the most constant features exhibited by a species, but one of little classificatory value owing to the large number of species which possess the same structure and arrangement of the chromatophores. The outward form of the cell, as seen in front view, varies within certain limits which are usually very small, but which may in exceptional cases be considerable. The form of the vertical is, as a rule, a more constant feature than the form of the front view. The ornamentation of the cell-wall is relatively constant, being always arranged according to a definite law, which is only transgressed by variations in one or more of the individual component groups which constitute the pattern of arrangement. The prolific growth and rapid division of immense numbers of Desmids have a tendency to produce variations from the typical forms; but slight changes in the conditions of environment cannot affect the characters of a species unless they act for long periods of time.

Deposit in Hydrastis Extract.

The nature of the deposit which separates from fluid extract of hydrastis has been stated by E. Schmidt to consist of berberine and its salts, together with phytosterin. F. Lœbner confirmed this, and found that it contained practically no hydrastine. O. Linde, however, now states that the sediment contains hydrastine as well as berberine and phytosterin. Three samples examined by him contained from 22·24 to 26·7 per cent. of berberine, and from 4·5 to 37·5 per cent. of hydrastine, also 0·9 per cent. of phytosterin.—*Archiv*, **236**, 698.

A NEW WORK ON MATERIA MEDICA.

AN INTRODUCTION TO THE STUDY OF MATERIA MEDICA. By H. G. GREENISH, F.I.C., F.L.S. Pp. xxi. + 511, with 213 illustrations. Price 15*s*. London: J. and A. Churchill. 1899.

It is evident that this work is not intended as a text-book or a work of reference, but merely as an introduction to the subject. Indeed, in the preface the author states that it is the outcome of the keenly felt "want of a suitable work" to place in the hands of students "to relieve them of the necessity of taking and copying out copious lecture notes," and that hence he has been induced to collect, arrange systematically, and in some respects amplify, the details that have served him as a basis for lectures on the subject. The author also points out that it is assumed that the student who begins the study of materia medica has already acquired some knowledge of inorganic and organic chemistry, and of the morphology and anatomy of the plants or organs of plants of which drugs consist.

This is, no doubt, the ideal state of things, but it is by no means wise to assume that it exists, nor to suppose that students will not take "copious" notes, even when they have a work on the subject to refer to. But undoubtedly the book will serve an excellent purpose by enabling students to correct and check the notes they take at lectures, which are not always an accurate representation of what they hear or see. The author also makes a strong protest against treating the subject of materia medica in so utilitarian and commercial a spirit as for the student to restrict his knowledge to such details as may be considered necessary for examination purposes or directly convertible into pounds, shillings, and pence during his subsequent business career. The author's idea is that the student should be encouraged to regard a complete knowledge of each drug as the object to be aimed at, and to be attained only by patient and far-reaching study.

Naturally this is the professorial point of view; but it must be confessed that from the business point of view the knowledge that the student desires is such as will not only enable him to pass his examination successfully, but to understand his wholesale price list, to meet the wants of various customers, and to make preparations from the drugs he employs such as will give satisfaction to the medical man who prescribes them. The author's work, however, can only be fairly judged from the point of view from which he has written it.

The arrangement of the drugs differs but slightly from that of the lectures on materia medica as shadowed forth in the syllabus of the School of Pharmacy of the Pharmaceutical Society, viz.:—Leaves; flowers; fruits; seeds; herbs and entire plants; woods; barks; rhizomes; roots; hairs, glands, and extracts and dried juices; gums; resins; gum resins; oleo-resins; balsams; fixed and empyreumatic oils, fats, waxes, etc.; animal substances. The chief difference in this arrangement is that cryptogamic substances are now classed under "Herbs and Entire Plants," and that hairs, glands, etc., follow after roots instead of being placed first where they have hitherto stood, and where, on account of their simple structure, they were reasonably placed. A convenient table is given at the end of the book, in which the natural orders are arranged alphabetically, with the scientific names of the plants, etc. yielding drugs also alphabetically arranged, so that it is easy to see at a glance how many of the drugs are obtained from any given natural order. The discrepancies that occur in the use of the term bark by botanists and pharmacognosists have been met by the author in an ingenious and very satisfactory manner, and it may be hoped that the solution of the difficulty proposed by him will be generally adopted. It may be quoted here as an instance of the clearness and precision that characterise the whole work.

"The restriction by botanists of the common English terms, bark and cortex, to portions only of the bark and cortex has rendered an intelligible description of the structure of barks exceedingly difficult. I have used the term *bark* in its ordinary English signification—that is, to denote all the tissues of the stem and root exterior to the cambium—whilst I have restricted the term *cortex* to that portion of the bark extending from the epidermis, cork or phelloderm, as the case may be, up to and including the endodermis. Cortex corresponds, therefore, to the 'middle bark' of many pharmacognosists. I have employed the term *bast* to denote the tissue extending from the endodermis to the cambium, corresponding therefore to the 'inner bark.' For the tissue to which botanists restrict the term bark I have retained the old name '*outer bark*,' as it forms the outer portion of those barks in which it is formed."

An excellent feature in the text is the way in which the distinctive characters of each drug are emphasised by the use of italics and a special arrangement of the type, so that the student can find them without any loss of time. The illustrations have been carefully selected from the works of Planchon and Collin, Berg, Moeller, Luerssen, Maisch, Bentley and Trimen, Pereira, Vogl, and the *Pharmaceutical Journal*. A few which have been engraved from photographs are inferior in teaching value to the others, with the exception of those of the foxglove leaf and of ipecacuanha root, which are excellent.

The book which has hitherto been largely used in the School of Pharmacy, viz., Maisch's 'Materia Medica,' was felt by students to contain too little concerning the drugs chiefly used in this country, and too much about the drugs used in the United States but not in this country, whilst the 'National Dispensatory' contains too voluminous an account for easy perusal. Neither of these faults pertains to the work under consideration, due weight being given to the more important features of the drugs, and to the principal constituents. If any deficiency is observable, it is that comparatively little is said about articles in common use, such as menthol, and especially of the oils, such as almond, linseed, etc., and that comparatively little information is given about the qualities of drugs as met with in commerce, whilst in some cases space is wasted by allusions to articles that are simply curiosities, such as the five varieties of manna mentioned on page 473.

In the absence of any bibliography, brief references to authorities for statements are occasionally given, and in some cases the year of publication also, but unfortunately not in all. As a rule the information given has been most carefully ascertained, but in some instances the statements are open to question, as the substitution, at least in English commerce, of the bark of *Croton malambo* for cascarilla. In this country Malambo bark has generally been sold as a substitute for *Cinnamodendron corticosum*, and *Croton niveus* for cusparia. The statement that "northern senega does not reach the European market to any appreciable extent," and the placing of dragon's blood in tears (which is the produce of a different plant) under *Calamus draco*, are statements that belong to the same category, whilst the description of Socotrine and Zanzibar aloes by no means represents the commercial varieties of those drugs. But with these few exceptions the work is as free from errors as it is reasonable to expect any work on such a subject to be, and it is certainly the most reliable and the best work of its kind, so far as it goes, that has appeared of late years. It may be noted that the author proposes to devote a subsequent volume to the minute structure of drugs, and that will doubtless be found as invaluable to pharmaceutical students as the present volume must undoubtedly prove to be.

PRACTICAL POINTS.*

BY F. J. WULLING.

Few pharmacists and chemists anneal their glassware. It pays to take the little trouble involved. Whenever graduates, funnels, flasks, pipettes, test tubes, and glassware of any description are purchased, it is wise to put it into a boiler, add cold water, apply heat as gradually as possible until the water boils, and allow the boiler and contents to cool very slowly. Glassware and porcelain treated in this manner will stand sudden changes in temperature without fracture. Into a flask or graduate thus treated boiling water can be poured suddenly with impunity, and solutions of rapidly dissolving salts made in them will not cause the bottom to fall out.

Small quantities of emulsions may be quickly and efficiently prepared by means of a good-sized piston syringe. It is only necessary to put the ingredients into a mortar or other convenient vessel, and manipulate the piston rapidly for a few minutes. Eight ounces of a 50 per cent. emulsion of cod-liver oil thus made in three minutes (including the time needed to weigh out the acacia and tragacanth, and to measure the oil and water, etc.), has not separated after three months.

Large weights for weighing one, two, or three or five pounds or more of substances frequently sold in large quantities (copperas, oilmeal, bleaching powder, etc.) can be made conveniently by counterbalancing standard weights with heavy bottles, to which is added a sufficient amount of clean sand or gravel. The bottles should be conspicuously labelled to designate their weights.

Many pharmacists keep their lime water in two-gallon bottles and pour the water from the bottle as needed. This is a cumbersome way, and always results in spilling some and disturbing the layer of calcium hydroxide at the bottom. A cleaner and more satisfactory way is to use a glass tube syphon, to the longer arm of which is attached a small length of rubber tubing, holding a pinch cock. To the other end of the rubber tube may be attached a two or three-inch piece of glass tubing.

Corks may be kept moist and flexible by keeping in a metal tray fitted into a block tin-lined drawer, in which is kept a little water.

Glass stoppers that have become fastened in the necks of bottles usually may be removed by heating the neck of the bottle, turning the stopper and pulling it upward before the expansion caused by the heat is communicated to it.

Insects can be kept out of herbs, barks, roots, leaves, etc., by adding a few drops of chloroform to the container when first putting away. A small piece of camphor will answer the same purpose.

In sifting tooth powders, powdered drugs, and moistened powders, before packing into percolators, the common sieve requires too much time and manipulation. A new kind of flour sieve provided with a rotary mechanism may be cheaply had at any hardware store. Such is far more useful to the busy pharmacist than the kind he usually uses. They may be had for coarse and fine powders.

A large-sized nutmeg grater is a useful thing to have in a pharmacy. With it a number of drugs can be grated to a coarse powder, which could not be reduced in a mortar or in a drug mill. In grating, the drug should not be firmly pressed against the grater, but should be only lightly passed over it.

Pharmacists sometimes have calls for hard pomades for chapped hands, etc., to take the place of the soft cold cream. An efficient preparation, and one that has given satisfaction to users, may easily be made by melting together 1 part of borax, 25 parts of almond oil, and 75 parts of cocoa butter. Flavour with oil of rose sufficiently, or omit the flavouring, as the odour of the butter is quite agreeable. Pour the mass before it is entirely cool into small, flat ointment jars of two drachms or half an ounce capacity. Patrons who first suggested a toilet article of the nature of cold cream, but much harder, and others, readily paid 25 cents for the half-ounce package, neatly put up. A preparation hardened with wax or spermaceti did not meet with as much favour as that made with the cocoa butter.

The so-called double boiler, to be had made of tin or agate ware in any house-furnishing establishment, is really a water bath, and with care may be also used as a steam bath. It is an economical and convenient substitute for the expensive copper water bath.

Agate or granite ware is useful in the laboratory. The porcelain casseroles, infusion jars, evaporating dishes, etc., are expensive and fragile. Agate ware is cheaper and answers most purposes better than porcelain ware. A good quality should be selected, because in the poorer the glazing is sometimes imperfect. Tin measures, funnel, etc., should not be used when the clean, non-corrosive agate ware can be had nearly as cheaply.

One of the best iodoform diluents is finely powdered zinc carbonate. A mixture of one part of iodoform and two parts of zinc carbonate is very popular with some physicians known to the writer.

A home made mercurial ointment is sometimes ordered by physicians. The following prescription was brought to a pharmacist with a request over the telephone by the physician to be sure to dispense a freshly prepared ointment: ℞. Ung. Hydrarg. noster, 33 per cent., 15 Gm.

The boy was put at triturating 5 grammes of mercury in a mortar with 4 grammes of lard, but after 15 minutes' trituration the undertaking seemed hopeless. Thereupon 5 grammes of mercury were triturated with purified lanolin, and after ten minutes the mercury had become invisible to the unaided eye, and after five minutes' additional triturating a 20-diam. glass failed to reveal globules of mercury. To the contents of the mortar were then added 6 grammes albolene and the ointment flavoured with oil of lavender, as directed by the physician. The resulting ointment was very satisfactory to the physician, and he prescribes it whenever he needs mercurial ointment.

In applying the thalleioquin test for quinine or quinidine, chlorine water is not always at hand, and the official method requires apparatus and time. It will answer the purpose just as well, besides save time, to introduce a grain of potassium chlorate into a one-ounce bottle, add 3 drops of the official hydrochloric acid, stopper the bottle lightly, heat gently until the gas is evolved, and then add 6 fluid drachms of water and shake. In applying the test success is usually had by adding half a grain of quinine to a drachm of the chlorine water, shaking, and adding about half an ounce or 6 drachms of water. Then add drop by drop ammonia water until the green colour appears.

Sulphuretted hydrogen water will retain its strength longer if the ground surface part of the glass stopper is well covered with vaseline. The vaseline aids in making the bottle airtight.

A method for cutting bottles, successful at the hands of the writer, is the following: Introduce cottonseed oil into the bottle up to the point at which the fracture is desired. Heat one end of an iron rod (the rod in an ordinary retort stand will do) that will go into the bottle, until it is white hot; introduce it into the oil carefully in a way to avoid splashing, and hold there for a time. Soon a cracking will be heard, and upon examination it will be found that the fracture is a perfect one. If the glass of the bottle is thick, the fracture can be hastened by having the bottle standing in cold water.

* From the *Pharmaceutical Era.*

A tall narrow bottle can be quickly converted into a cylindrical percolator by cutting about half-an-inch from the bottom. A tall quart olive oil bottle can be converted into a tube suitable for use in a well-tube percolator by cutting just below the neck and again just above the bottom.

A file-mark will facilitate the fracture. If desired, the sharp edges may be ground on a smooth stone (flag-stone) or on glass with sand and a little turpentine and vaseline.

A person asking how to remove a blackish colour on teeth resulting from neglect was advised to use peroxide of hydrogen as a wash. Brushing the teeth several times daily with a dilute solution and thorough rinsing afterwards resulted in restoring the original whiteness in less than a week. No harm to the enamel was apparent, but the gums had to be hardened with a little tincture of myrrh in water.

The compound powder of tragacanth of the British Pharmacopœia is an excellent vehicle for insoluble powders when it is desired to administer them in suspension. It is composed of powdered starch, acacia and tragacanth, of each one part, and powdered sugar three parts. A drachm of the powder to an ounce of water serves as a good vehicle for salol, camphor, phenacetin and such drugs.

A syphon may be easily started by attaching a piece of rubber tubing to the long arm and compressing the tubing near its upper end and pulling it in the direction of the arm. Before permitting the tubing to relax, compress it with the other hand near the upper end. By repeating this procedure a number of times both arms of the syphon will be sucked full of the liquid and the flow will proceed.

Ink stains were removed from a piece of valuable old point lace by first soaking the lace in soft warm water, and then dipping the stained portions into a solution of chlorinated lime containing a little acetic acid (4 drops to the ounce), and rinsing quickly and sufficiently in a very dilute solution of sodium hyposulphite, and afterward in pure water. Care should be taken not to have the solution too strong, nor to allow too long a contact, else the chlorine destroys the fabric.

Pharmacists are in a position to advise laundrymen to use an antichlor. It is undoubtedly the experience of many who need to resort to the "steam laundries" that their expense for linen, etc., is out of all proportion to what it was when the washerwoman cared for it, though the latter charged more for her work. An inspection of the "rapid method" of a number of laundries put the writer into a position to advise the operators to use a little sodium hyposulphite in their "last water." This salt has no action upon the linen, and by forming new compounds with bleaching solution renders the latter harmless. The laundrymen will not only be grateful for the advice, but will usually thereafter buy quantities of hypo. from the pharmacist who undertook to advise them.

Pharmacists can usually create a sale for paraffin by advising housewives, during the preserving season, to pour melted paraffin over the top of the preserve when cooled. The paraffin, being lighter than the preserve, remains on top, and, on cooling, forms an airtight covering. No other cover of any kind is necessary. When the preserve is desired for use, the layer of paraffin is easily removed, and the preserve will be found in perfect condition.

BISMUTH SALICYLATE AND LACTOPHENINE FOR CHILDREN.—In cases of acute intestinal affections occurring in children from six to twelve years of age, the following powders are recommended:—Lactophenine, 15 grains; bismuth salicylate, 10 grains. Divide into six powders. One to be given in a wafer or capsule every three hours.—*Therapist.* 9, 96.

BRITISH PHARMACEUTICAL CONFERENCE.

Subjects for Papers.

The annual meeting of the Conference will this year be held at Plymouth, commencing on Tuesday, July 25, and the following subjects are suggested by the Executive Committee for investigation. New subjects have been added to the list, to replace those worked out, and the Committee will be glad to receive questions that may have presented themselves as desirable for investigation. Authors are specially requested to send the titles of the papers they intend to read to the Hon. Gen. Secretaries, 17, Bloomsbury Square, London, as soon as possible, and not later than two or three weeks before the annual meeting. The subjects will then be publicly announced, and full interest thus be secured. All manuscripts of papers should be sent in as soon as possible afterwards (*at least ten days before the meeting*), and must be sent exclusively to the Hon. Gen. Secretaries, who will supply full information to all journals interested, in due course. All applications for copies or abstracts of papers should therefore be referred to the Hon. Gen. Secretaries.

PLANT ANALYSIS.

1. **Strophanthus.**—The chemistry of this drug requires further elucidation, the statements of various authors hitherto published being conflicting. (See 'Year-Book of Pharmacy,' 1888, pp. 60-62; also 1889, pp. 449 69; *P. J.* [4], **3**, p. 463.)

2. **Cascara Sagrada.**—What is the nature of the various resins contained in this bark? (See 'Year-Book of Pharmacy,' 1893, p. 131, from *Comptes rendus*, **115**, pp. 286-288.)

3. **Spigelia marilandica.**—This plant, which is used as an anthelmintic, is reported by Dr. A. H. Hare to possess poisonous properties allied to those of *Gelsemium.* (See *Practitioner*, July, 1887, p. 61.) A systematic examination is required. (See *Journ. de Pharm. et de Chim*, 1888, p. 541.)

4. **Cimicifuga racemosa (Actæa racemosa).**—Report on the chemical nature of the constituent or constituents to which the rhizome of this plant owes its activity. (See 'Year-Book of Pharmacy,' 1885, p. 149.)

5. **Euphorbia pilulifera.**—Required, a report on the chemistry of this drug.

6. **Astringent Drugs and Preparations.**—The various methods employed for the estimation of tannin in these give very discrepant results. Required, a thorough research into the comparative merits of these processes.

7. **Mezereon Bark.**—What is the chemical nature of the acrid principle of this bark?

8 **Arnica.**—What is the active principle, and what are the relative proportions of it in the root and flower?

9.—**Chamomile.**—Research on the bitter principle contained in the flowers of *Anthemis nobilis.* (See *Bulletin de la Société Chimique de Paris* [2], **41**, p. 483.)

10. **Castor Oil.**—A research, having for its object the isolation of the purgative principle, either from the oil or the seed.

11. **Taraxacum.**—Little that is definite appears to be known regarding the active principle of taraxacum root. A research is required to clear up the point. (See 'Proceedings American Pharm. Assoc.,' 1896, p. 160.)

12. **Colchicum autumnale** — The chemistry of *Colchicum autumnale* is still in an unsatisfactory condition. It has not yet been clearly proved that more than one active principle exists either in the corm or the seeds. A careful proximate analysis of both is urgently needed.

13. **Solution of Hamamelis.**—The imported preparations vary considerably in characters. It seems desirable to determine whether this is due to age or difference in method of preparation. The separation and examination of the volatile ingredient is necessary.

14. **Fucus vesiculosus.**—The medicinal virtues have been attributed solely to the presence of iodine and bromine. It is not improbable that it may also contain some organic constituent of importance. A complete chemical investigation is required.

15. **Lobelia inflata.**—One alkaloid only has been isolated from this drug; the question of the existence of a second is worthy of attention.

16. **Simaruba Bark.**—A comparison of the bitter principles of this bark with those of quassia wood (both Jamaica and Surinam).

17. **Damiana** is reported to contain a bitter substance, resins and volatile oil. The liquid extract of the leaves being now extensively used, a thorough systematic examination of this drug is desirable.

18. **Chelidonium majus.**—Required, a proximate analysis of the fresh juice.

19. **Proximate Analyses** of the following drugs are also needed: *Cactus grandiflora*, *Salix nigra*, *Citrullus colocynthis*, and *Viburnum prunifolium*.

20. **Papaver Rhœas.**—An examination of the red colouring matter of the petals is required.

21. **Senna Fruits.**—A comparison of the constituents of the leaves and the fruits would be of interest.

CHEMISTRY.

22. **Glycerin.**—Required, a good method of estimating this substance, applicable, if possible, to pharmaceutical preparations.

23. **Gun Cotton.**—Does the B P. process yield only the dinitrate of cellulose as stated by some, or (2) a mixture of tetra- and tri-nitrate, or (3) of tetra- and penta-nitrate, as stated by others? (See 'Year-Book of Pharmacy,' 1896, p. 344)

24. **Quinine.**—Results obtained in the titration of this alkaloid suggest the possibility that it is di-basic, and not mono-basic. (See 'Year-Book of Pharmacy,' 1894, p. 351; 1898, p. 424) Further work is needed to clear up the point.

25. **Subnitrate of Bismuth.**—It has been noticed that some samples are much more readily decomposed by alkaline carbonates than others. What is the cause of this?

MATERIA MEDICA AND PHARMACY.

26. **Salix Nigra.**—In what respect do the constituents of this species vary from those of other willows?

27. **Oil of Wintergreen.**—What is the percentage of salicylate of methyl in the commercial varieties of synthetic oil of wintergreen, and what is the nature of their impurities?

28. **Standardisation.**—It is suggested that the Pharmacopœia preparations of aconite, stramonium, strophanthus, and Calabar bean should be standardised. Processes of assay are required.

29. **Terpeneless Oils.**—An examination of the terpeneless oils in general use, with a view of ascertaining the percentage of their important constituents.

30. **The two Sennas of the British Pharmacopœia are permitted to be used indifferently.**—Do preparations of the leaves of the two varieties of senna differ? If so, to what extent?

31. **Extraction of Drugs by Pressure.**—This mode of extraction (see Dr. Symes' suggestions in the 'Year-Book of Pharmacy,' 1888, p. 356) is likely to produce good results with a number of drugs. Required, a series of experiments in this direction, showing the effect of the process on the quality and yield of extracts as compared with the corresponding products obtained by the ordinary modes of extraction.

32. **Standardised Preparations.**—Report on commercial specimens of official standardised preparations.

33. **Effect of Cultivation, Soil, Climate, and Time of Collection on Medicinal Plants.**—Compare the proportions of active constituents of indigenous plants grown in different districts, and the effect upon these constituents by time of collection.

34. **Musk.**—Chemical examination of commercial samples of natural musk. How far may the odour of natural musk be replaced by artificial products?

35. **Capsules.**—The quality and quantity of medicines in capsules. (See 'Year-Book of Pharmacy,' 1875, p. 285.)

36. **Cotton-Seed Oil.**—Can this oil be used advantageously for any pharmaceutical purposes?

37. **Mispronunciation of Latin Pharmacopœia names is common.**—It is suggested that a short prosody be compiled for purposes of reference.

38. **Standardised Tinctures.**—Certain Pharmacopœial tinctures not now standardised owe their activity to the presence of one or more resins. Is it possible to "standardise" any of these preparations?

39. **Compressed Drugs and Coated Pills.**—Required, a report on the strength and quality of compressed drugs and coated pills of commerce.

40. **Kinos.**—A comparison of the characters of the official and other commercial varieties is much needed.

41. **Aluminium.**—What are the advantages of using this metal for pharmaceutical apparatus?

42. **Digitalis.**—A comparison of the juice with the official preparations is desirable.

43. **Sennas.**—A careful histological examination of Alexandrian and Tinnevelly senna, with the view of ascertaining whether it is possible to distinguish the two drugs when powdered.

44. **Ergot**—The determination of the proportion of alkaloid extracted from ergot by the official processes for the various preparations.

45. **Extracts.**—The official processes for preparing extracts appear capable of considerable simplification and improvement. Experiments in this direction are much needed.

46. **Syrup of Glucose.**—A series of experiments is required to show whether the official syrup of glucose is a satisfactory pill excipient as regards composition and official application.

47. **Green Extracts.**—It is obvious that green extract of belladonna, extract of henbane, and extract of stramonium should be standardised. A simple process of assay and definite proposals for standard strengths are desirable. ('Year-Book of Pharmacy,' 1893, p. 194; 1898, pp. 209 and 359.)

48. **Terebene.**—To what extent do commercial samples of terebene correspond with the characters and tests of the 1898 Pharmacopœia?

FORMULÆ, METHODS, AND REACTIONS.

KNOWN BY THE NAMES OF THEIR AUTHORS.

(Supplementary List).*

Hager (ALBUMIN IN URINE).—A solution of picric acid produces turbidity in urine containing albumin.

Hager (ALCOHOL IN ESSENTIAL OILS).—(1) On shaking an essential oil containing alcohol with an equal volume of a mixture of water, 1, glycerin, 2 (or a solution of sodium nitrate, 1, in water, 3), and allowing to stand awhile, the volume of oil will be diminished in proportion to the amount of alcohol present. (2) If a trace of tannin be added to 5 drops of essential oil containing alcohol and, after shaking, the mixture is left for several hours at the ordinary temperature, the tannin will sink after becoming pasty and adhesive; in the absence of alcohol, the tannin will continue to float, remaining solid and porous.

Hager (AMMONIA).—Solution of mercurous nitrate gives a brown coloration or a black precipitate with ammonia.

Hager (AMYLIC ALCOHOL).—On dipping a roll of filter paper into alcohol containing fusel oil, and mixed with 10 p. c. of glycerin, the odour of the amylic alcohol becomes very pronounced when the paper is dried at a temperature not exceeding 25° C.

Hager (ARSENIC).—(1) Arseniuretted hydrogen is evolved on heating a liquid containing arsenic with excess of potash solution, zinc, and a little magnesium ribbon. (2) An arsenical solution will cause a stain (steel-coloured to brown) when heated to about 90° C. on thick tinfoil, after acidifying strongly with hydrochloric acid. (3) When a substance or liquid containing arsenic is boiled with sodium chloride, ferrous chloride and dilute sulphuric acid, chloride of arsenic and hydrochloric acid are formed, and the arsenic may be tested in any convenient way after passing the products of the reaction into water. (4) In the "Kramato" method, a bluish to black stain or violet ring is formed on letting a drop of a hydrochloric acid solution of arsenic fall upon a strip of bright brass and heating moderately. (5) The substance or liquid is placed in a test-tube with some diluted sulphuric acid and a small piece of zinc; the tube is then closed with a cork in which are two slits, into one of which a strip of lead acetate paper is inserted, and into the other a strip of silver nitrate paper. The lead paper will indicate sulphurous acid and the silver paper arsenic, the stains produced by the latter being unaffected by a 10 p. c. solution of potassium cyanide.

Hager (BRUCINE).—A yellowish to blood-red colour is produced on adding dilute sulphuric acid and manganese peroxide to a solution of brucine and filtering. The colour is changed to violet on heating the filtrate with nitric acid in the presence of stannous chloride.

Hager (CHLOROFORM IN ESSENTIAL OILS).—Shake 15 drops of the suspected oil with 50 to 60 drops of alcohol, and 30 drops of diluted sulphuric acid, then add a few pieces of zinc, and heat. When evolution of hydrogen ceases, add an equal volume of cold water, shake, and run through a wet filter. If chloroform be present in the oil, silver chloride will be precipitated on acidifying the filtrate strongly with nitric acid, and adding silver nitrate solution.

Hager (CITRIC AND TARTARIC ACIDS).—Pour a solution of potassium hydroxide, 1, in water, 2, and alcohol, 1, upon a glass plate, and place crystals of the acid at intervals of 1 to 2 inches. Citric acid dissolves almost entirely without losing its transparency within 1 or 2 hours, but tartaric acid soon becomes an opaque white.

* After Wilder, Schneider, Altschul, etc. Continued from page 388.

Hager (DEXTRIN).—A blue colour is produced on boiling a liquid containing dextrin with ammonium molybdate and a little citric acid.

Hager (ESSENTIAL OILS).—(1) The oils are distinguished by their varying solubility in alcohol, as indicated by the opalescence produced (see 'Proc. Am. Pharm. Assoc.,' 1882). (2) Shake 5 or 6 drops of the oil with 25 to 30 drops of sulphuric acid, and note the heat and turbidity produced; on cooling, add 8 or 10 C.c. of 90 p. c. alcohol, shake briskly, and note the colour and turbidity. See Prescott's 'Organic Analysis.'

Hager (FIXED OILS).—In the "Elaidin" test the oil is shaken with an equal volume of 25 p. c. nitric acid, a strip of copper added, and the mixture set aside at the ordinary temperature; note the appearance of the mixture at intervals of 15 minutes. See Prescott's 'Organic Analysis.'

Hager (IODIC ACID IN NITRIC ACID).—On adding to 3 C.c. of the suspected nitric acid, 3 drops of sodium sulphite solution and, after 1 minute, 5 C.c. of ammonia solution with 1 drop of silver nitrate solution, a cloudiness or precipitate appears in the presence of iodic acid, and does not disappear on the addition of several cubic centimetres of ammonia solution.

Hager (MINERAL ACIDS).—Vinegar containing free mineral acid leaves a crystalline residue on adding one-fourth its bulk of ammonia and evaporating above 70° C.

Hager (NITRIC ACID).—A blue colour is produced with molybdic acid and sugar.

Hager (NITROBENZOL IN BITTER ALMOND OIL).—Pure oil forms a clear solution on gently agitating 10 drops with 10 C.c. of 45 p. c. alcohol; in the presence of nitrobenzol, the solution will be cloudy.

Hager (NITROUS ACID).—Carbolic acid mixed with nitrous acid causes a red coloration, which changes to brown, then to green.

Hager (PHOSPHORUS).—A black stain is produced on taking up phosphorus with ether or benzene, heating to 30-40° C., and exposing a strip of silver nitrate paper to the vapours given off.

Hager (QUININE).—On well shaking 2 Gm. of pure quinine sulphate with 20 C.c. of cold water and filtering, then diluting the filtrate with an equal bulk of water and shaking with 10 or 12 drops of sodium salicylate solution (1:5), the solution is left clear. Other cinchona alkaloids, if present, cause cloudiness.

Hager (SANTONIN).—On well shaking 2 Gm. of pure santonin with 6 C.c. of water and filtering, then adding 1 or 2 C.c. of saturated picric acid solution, no cloudiness or precipitate should occur.

Hager (SODIUM SALTS).—A white cloudiness is produced with sodium salts on adding a mixture of crystallised stannous chloride, 5, water, 10, and a sufficiency of potassium hydroxide solution. This test may also be employed to detect lithium and ammonium salts.

Hager (STRYCHNINE).—Sulphuric acid and lead peroxide give a bluish-violet colour with strychnine.

Hager (SUGAR IN GLYCERIN).—A blue colour is produced on boiling 5 drops of glycerin containing sugar with 100 drops of water, 3 or 4 Cgm. of ammonium molybdate, and 1 drop of 25 p. c. nitric acid.

Hager (TURPENTINE IN COPAIBA).—(1) The odour of turpentine becomes very apparent when 1 drachm of copaiba containing it is mixed with 5 or 6 drops of water and sufficient litharge to make a thin paste. (2) Pure copaiba forms a clear mixture with $1\frac{1}{2}$ volumes of 90 p. c. alcohol, and the mixture becomes turbid on adding $1\frac{1}{2}$ volumes more; in the presence of turpentine or other adulterant the result is different.

Hahnemann (Lead and Copper in Wine).—A black or brown precipitate is thrown down on adding the clear liquid obtained after dissolving tartaric acid, 1, in water, 64, shaking briskly for some time with calcium sulphide, 1, and then decanting.

Hairs (Saccharin in Presence of Salicylic Acid).—After extracting the suspected liquid with ether, the ethereal residue is taken up with hydrochloric acid, and the salicylic acid precipitated by the addition of bromine water; the excess of bromine is removed from the filtrate by a current of air, and the saccharin isolated by extraction with ether; it may then be identified by Börnstein's test.

Hamlin (Alkaloids).—Note the colour reactions produced by the action of sulphuric acid with potassium bichromate, followed by chlorinated lime. See 'Proc. Am. Pharm. Assoc,' 1881.

Hammarsten (Globulin in Urine).—A saturated solution of magnesium sulphate or crystals of magnesium sulphate are used as a precipitate of globulin in urine.

Hammarsten-Robbert (Thymol).—A reddish-violet colour is produced on mixing a solution of thymol with half its volume of glacial acetic acid, then adding an equal volume of sulphuric acid and heating.

Hardy (Alcohol).—A blue colour is produced with guaiacum, hydrocyanic acid, and copper sulphate.

Hardy (Alcohol in Chloroform).—Hydrogen is evolved on adding sodium.

Harnack (Iodine in Urine).—A blue coloration is produced on shaking with starch paste and carbon disulphide.

Hartig (Ammonia Carmine-Stain).—Commercial carmine is suspended in distilled water, and dissolved by the gradual addition of solution of ammonia, then filtered at a moderate temperature.

Haslam (Albumin in Urine).—A whitish zone is formed on mixing the urine with a few drops of sodium chloride solution and pouring ferric chloride solution cautiously on top.

Hassalt (Aconitine).—A violet colour is produced on dissolving aconitine in syrupy-phosphoric acid and cautiously evaporating.

Hatschett (Reaction for Copper).—Traces of copper salts give with ferrocyanic acid and its salts a brown precipitate (Hatschett's brown).

Haugk (Hyposulphites).—The colour of potassium permanganate solution is changed to bluish-green.

Hayem (Microscopical Examination of Blood).—Sodium chloride, 1; sodium sulphate, 5; mercuric chloride, 0·5; in distilled water, 200 fl. pts.

Hefelmann (Bombay Mace).—Basic lead acetate gives a white precipitate with an alcoholic extract of genuine mace; with Bombay mace it gives a red precipitate. According to Waage (*P. J.* 5, 57), the above test is not always trustworthy.

Hehner (Formaldehyde).—One drop of aqueous phenol solution is added to the liquid suspected to contain formaldehyde, and the mixture poured upon a concentrated sulphuric acid; a carmine red ring is produced at the juncture of the two liquids if formaldehyde be present.

Hehner (Formaldehyde in Milk).—Sulphuric acid, 94 p. c., is added. If the milk contains formaldehyde, a blue colour appears. A part of the milk may also be distilled, and the distillate, after adding some peptone, tested with sulphuric acid. According to Leonard, the blue colour only appears when a trace of ferric chloride or other oxidising medium is present in the sulphuric acid.

Heidenreich (Fixed Oils).—These oils are distinguished by the varying colour reactions produced on mixing 10 to 15 drops of each with 2 drops of concentrated sulphuric acid.

Heijningen, Van (Quinine).—A crystalline precipitate is produced on adding ammonium oxalate solution.

Heinrich (Glucose).—Dissolve mercuric iodide, 18 Gm., and potassium iodide, 25 Gm., in water, *q.s.*; then add potassium hydroxide, 10 Gm., and sufficient water to make 1 litre. On heating the resulting solution and adding the suspected liquid, reduction occurs if glucose be present.

Heinsius (Albumin).—Mix 5 to 10 C.c. of the suspected liquid with 1 or 2 drops of diluted acetic acid, and boil; then add so much sodium chloride solution that the whole liquid shall contain at least 4 per cent. of sodium chloride. If albumin be present, it will then be precipitated.

Heise (Kermes Colouring in Wine).—Shake 20 C.c. of the wine with 10 C.c. of 10 p. c. alum solution and 100 C.c. of sodium carbonate solution 10 p. c., and then exactly neutralise with the latter solution. The filtrate gives the following reactions in the presence of kermes colouring matter:—Amyl alcohol extracts no colour from either acid or alkaline solutions. The solution acidulated with acetic acid is not altered by sodium bisulphite. It is coloured yellow by caustic alkali. The colouring matter of beetroot gives similar reactions.

Helwig (Blood Solution).—1 part of potassium iodide dissolved in 4 parts of water. This removes dried-up and old blood stains without altering the colouring matter of the blood.

Helwig (Solanine).—A cherry-red colour is produced on adding a mixture of equal volumes of sulphuric acid and alcohol.

Hempel (Iodides).—A rose-red colour is produced on adding to a liquid containing an iodide a little ferric chloride solution and sulphuric acid, followed by starch paste.

Henninger (Nitrobenzol in Bitter Almond Oil).—Potassium hydroxide solution produces a green coloration.

Henry (Iodine).—Potassium permanganate solution liberates the iodine.

Henry, De (Indicator).—By monochromatic light, as that of the sodium flame, red litmus appears colourless and blue litmus black.

Henry-Humbert (Iodine; Bromine).—Water containing iodine or bromine is precipitated with acidified silver nitrate solution, the precipitate mixed with silver cyanide, and a current of dry chlorine passed over it. Cyanogen iodide or bromide is formed.

Heppe (Chlorates).—An intensely blue colour is produced on adding solution of aniline sulphate (containing toluidin) mixed with twice its volume of sulphuric acid.

Heppe (Coumarin).—A greenish-golden colour is produced on adding to an alcoholic solution of coumarin a few drops of tincture of iodine and allowing the mixture to evaporate spontaneously.

Heppe (Essential Oils).—Colour reactions are produced on dropping 25 drops of the oils on to small pieces of copper nitroprusside, then heating to boiling and setting aside. See Prescott's 'Organic Analysis.'

Herbst (Atropine).—The odour of bitter almond oil is given off on treating with sulphuric acid and potassium bichromate (or ammonium molybdate) and a little water.

Hermann (Microscopical Fixing Solution).—Platinum chloride solution, 1 p.c., 15; acetic acid, 1; osmic acid solution, 2 p. c., 2–4.

Hertz (Vegetable Colouring Matter in Wine).—Shake 10 to 15 C.c. of red wine with 5 C.c. of saturated solution of tartar emetic. Natural wine gives a cherry-red colour both by reflected and transmitted light. Foreign colouring matters give violet shades.

Herzberg (FREE ACIDS).—Paper tinted with Congo red turns bluish to bluish-black in the presence of free acids.

Herzberg (PAPER).—Wood pulp and jute give lemon-yellow colour with dilute solution of iodine in potassium iodide; linen, hemp, and cotton papers, a brown colour; while wood cellulose, straw, and esparto remain colourless. Strips of the paper are first boiled to a pulp with dilute potash solution, and then washed free from alkali before applying the reagent. Hemp, cotton, jute and linen give a yellow colour with zinc chloride iodine solution; cellulose gives a bluish colour.

Hesse (CODEINE).—A blue colour is produced on dissolving in sulphuric acid and adding ferric chloride solution.

Hesse (CHOLESTERIN).—See Salkowski.

Hesse (MORPHINE IN QUININE SULPHATE).—Mix the suspected sulphate with diluted nitric acid (1 : 4). If morphine be present the solution becomes yellowish to orange-red.

Hesse (QUINIDINE).—No cloudiness should be produced on 0·5 Gm. of pure quinidine with a solution of 0 5 Gm. of potassium iodide in 10 C.c. of hot water, filtering after 1 hour, and then adding 1 drop of ammonia.

Heuschen (AMYGDALIN).—Reduce the suspected substance to fine powder, then add a little chalk, coarse rye flour, and water, and allow to ferment. If amygdalin be present hydrocyanic acid will be evolved and stain cuprous guaiacum paper blue.

Heydenhain (FIXING SOLUTION).—Sodium chloride, 0·5 p. c. solution, is saturated with corrosive sublimate in the warm.

Hilger (ALBUMIN).—A precipitate is formed on acidifying with acetic acid and adding potassium ferrocyanide solution.

Hilger (ARSENIC).—A black stain is produced on acidifying strongly with hydrochloric acid, adding aqueous iodine solution in excess, introducing a piece of pure zinc, and exposing silver nitrate paper to the gas evolved.

Hilger (IODIC ACID IN NITRIC ACID).—On diluting with water and shaking with 25 per cent. of carbon bisulphide, in the presence of a few pieces of rasped tin, the bisulphide is coloured violet.

Hilger-Mai (KERMES COLOURING IN WINE).—Mix 5 C.c. of the wine with 10 drops of a 5 p. c. solution of iodine in potassium iodide, filter the mixture after standing for 2 hours, and treat the filtrate with sodium thiosulphate in excess. Natural wine is decolorised, but kermes gives a red colour which is not destroyed on the addition of sulphuric acid.

Himly (OILED WHEAT).—On shaking the grain with bronze powder and rubbing with filter paper only the oiled grains will appear bronzed.

Himly (MINERAL SUBSTANCES IN FLOUR).—Shake the flour with chloroform, allow to deposit, and examine the sediment.

Himmelmann (ARSENIC).—This is Marsh's method, modified by the substitution for the acid and zinc of an ammoniacal solution of ammonium chloride which has been heated gently with a mixture of equal parts of granulated zinc and powdered iron. The liquid containing arsenic is made neutral or alkaline before adding and arseniuretted hydrogen is evolved.

Hindenlang (ALBUMIN IN URINE).—Strong metaphosphoric acid causes an opalescent cloudiness or produces a precipitate in urine containing albumin.

Hinterberger (ATROPINE).—A blood-red colour is produced on passing a current of cyanogen into an alcoholic solution of atropine.

Hirsch (PHENOL).—A purple colour is produced on adding tincture of ferric chloride to an aqueous solution of phenol.

Hirschsohn (COTTONSEED OIL).—Heat 5 C.c. of the oil to be tested for 20 minutes on the water bath with 6 to 10 drops of a solution of 1 Gm. of gold chloride in 200 C.c. chloroform. The presence of cottonseed oil is indicated on the production of a red colour.

Histed (ALOINS).—On adding a few grains of barbaloin to several drops of concentrated sulphuric acid and gently passing over the surface a glass rod moistened with nitric acid, a red colour is produced; nataloin produces a blue colour.

Hoehnel, Von (SILK).—A saturated solution of chromic acid diluted with an equal volume of water. Mulberry-fed silk is dissolved by heating for less than a minute in this solution. Wild silk is insoluble in the same reagent. Sheep's wool is dissolved like mulberry silk.

Hoffmann (BENZOL).—Heat with fuming nitric acid, subject the resulting nitrobenzol to the action of alcohol, hydrochloric acid, and granulated zinc, then test the aniline produced with chlorinated lime.

Hoffmann (CARBON BISULPHIDE).—Triethyl phosphine gives a rose-red colour.

Hoffmann (CHLOROFORM). — Isonitril is formed on adding aniline, alcohol, and soda. See also *P.J.* [4], 5, 75.

Hoffmann (INDICATOR).—The colour of eupittonic acid is changed from yellow to blue by alkalies.

Hoffmann (PHENOL).—On applying this test cautiously, pour 2 C.c. of the liquid on top of an equal volume of sulphuric acid, and drop into the liquid a few crystals of potassium nitrate. The violet coloration may appear in streaks.

Hofmeister (LEUCINE).—The solution to be tested is heated with mercurous nitrate. If leucine is present, a deposit of metallic mercury is formed.

Hofmeister (PRECIPITANT FOR PEPTONE).—Commercial sodium tungstate is dissolved in hot water, phosphoric acid added to an acid reaction, then strongly acidulated with hydrochloric acid and filtered after standing 24 hours.

Hoppe (ESSENTIAL OILS, ETC.).—See Heppe.

Hoppe-Seyler (XANTHINE).—Calcium chloride and sodium hydrate solution, added to a solution containing xanthine, give at the zone of contact a dark green colour, quickly changing to brown, and finally disappearing.

Horsford (GLYCOCOLL).—A bright red colour is produced on heating with potassium hydroxide solution.

Horsley (ALKALOIDS).—Sodium nitroprusside yields crystalline precipitates.

Horsley (GLUCOSE).—(1) Dissolve copper sulphate, 30, in water, 1440, add tartaric acid, 30, and cool; then add potassium hydroxide, 90, and potassium carbonate, 90. This solution is reduced by glucose. (2) A green colour is produced on boiling glucose with a solution of potassium chromate containing free alkali.

Horsley (MORPHINE).—(1) A red colour is produced several hours after adding potassium ferricyanide solution. (2) A blood-red colour is produced on adding a few drops of silver nitrate solution and adding nitric acid to the filtrate after reduction of the silver.

Horsley (STRYCHNINE).—A purple-violet to red colour is produced on adding potassium bichromate solution to a solution of a strychnine salt and, after separation of crystals, adding a drop of sulphuric acid.

How (ALKALOIDS).—Distinctive colour reactions are produced on adding sulphuric acid and ferric chloride. See 'Proc. Am. Pharm. Assoc.,' 1878.

Hoyer (MICROSCOPICAL MOUNTING MEDIUM).—This is a solution of picked gum acacia and potassium acetate, employed for mounting preparations stained with aniline colours; carmine or hæmatoxylin

stained preparations are treated with solutions of choral hydrate of varying strength, containing 5 to 10 p. c. of glycerin.

Huebl (IODINE SOLUTION).—Iodine, 25 Gm. is dissolved in 500 C.c. of alcohol, 95 p. c.; mercuric chloride, 30 Gm., is also dissolved in the same volume of alcohol of the same strength; the filtered solutions are mixed and the mixture is ready for use after standing for 24 hours.

Huebl-Waller (IODINE SOLUTION).—Similar to the above, but with the addition of 25 Gm. of hydrochloric acid, sp. g. 1·19, to the mercuric chloride solution; this modified reagent is much more permanent than the original Huebl solution.

Huehnefeld (BLOOD IN URINE).—Acetic acid, 2, distilled water, 1, are each mixed with alcohol, 100, and turpentine, 100; 1 C.c. of the mixture and 1 C.c. of guaiacum tincture are mixed together and 3 to 4 C.c. of urine added; in the presence of blood, a blue zone is formed.

Humbert-Henry (IODINE; BROMINE).—See Henry-Humbert.

Hume (ARSENIC).—A black colour is produced on passing arseniuretted hydrogen into ammoniacal silver nitrate solution.

Hume (FREE MINERAL ACIDS).—Free mineral acids in vinegar give distinctive colour reactions when 2 drops of the vinegar are added to the residue left on evaporating a neutral solution of ammonium molybdate to dryness on platinum foil, heating till barely moist and then cooling.

Hyde (THALLEIOQUIN REACTION).—See Brand's test.

Ilimow (ALBUMIN IN URINE).—Cloudiness and a flocculent deposit appear on acidifying the urine, if necessary, with sodium acid phosphate, allowing to settle, cooling and filtering, then adding diluted carbolic acid (1:20).

TO PREVENT WINDOW SWEATING.*

BY ARTHUR E. FRIANT.

I first had two large sections taken up in the window floor so I could see how my windows looked under the space. I found that I could see large cracks, which no doubt let in a great deal of cold air. These cracks I filled with packing, such as is used in caulking seams in a boat. I then filled in the whole space under the window floor with sand about three inches deep. My idea in doing this was to keep all possible dampness out of the window. Then I cut a square hole in the floor under the window floor of the platform which led into the basement. The only space for air to come in was through the large hole, which was perfectly tight all around the air-space. The heat from the top of basement naturally would cause a draught in this air-space, from the fact that the air in the window was cooler than the air in the basement, and, as hot air rises because it is lighter than the cold air, the hot air in the basement rose to the window. The doors leading from the store into the window were taken off their hinges, and this allowed the air from the basement to circulate through the whole window. Then I took a thermometer and tried the temperature of the basement first, then of the window, also of interior of store. They were found to be all of the same temperature.

If you will notice your store doors in the coldest weather you will see that they very seldom freeze or sweat, because the heat of the store strikes the whole glass, and the temperature is alike from bottom of the door to the top. I can step into my windows now with the same amount of comfort that I would walk about the store. I wish to say further that parties who own stores without heat in the basement will find this plan to work by placing a common lamp under the air chamber. This has been tried and found very successful.

* From the *Confectioners' Journal*, through *Western Druggist*.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—XIII.

Internal Structure of Craniata.

A general unity of plan in the structure and arrangement of organs is present throughout the division. In mammals the cœlom, or body cavity, the inner coat of which is the peritoneum, is divided into a thorax containing the heart and lungs, and an abdomen containing the stomach, intestines, etc. These two chambers are separated by a membranous diaphragm. In lower forms the heart lies by itself in a special peritoneum-lined chamber, the pericardial cavity, and there is no diaphragm.

The brain, enclosed in a brain-case or cranium, is a hollow, dilated extension of the central nerve column. It consists at an early stage of three parts—fore-, mid-, and hind-brain. The fore-brain and hind-brain become afterwards divided each into two regions, the former into the prosencophalon and diencephalon, the latter into cerebellum and medulla oblongata, the mid-brain, mesencephalon, remains. From these five regions, which become more lobed and differentiated the higher in the scale, the cranial nerves are given off, ten in the fish and frog, twelve in the reptile, bird, and mammal. Of these nerves the first two pairs spring from the fore-brain, the third pair from the mid-brain, and the remainder from the hinder region. They are all in connection with the anterior structures of the body, eyes, ears, nose, tongue, jaws, and neck, except the tenth pair, or vagus, which by means of branches reaches to the gills or lungs as the case may be, heart and stomach.

The alimentary system consists always of a mouth, pharnyx, œsophagus, stomach, and intestine. The mouth in craniates, contains a tongue, a muscular attachment to the floor of the mouth and in most cases teeth, which are looked upon as exoskeletal structures. The pharnyx in fishes communicates with the exterior by the gill slits. The stomach and intestine form no longer a straight tube, the former being usually curved upon itself somewhat and in some animals divided into several chambers, and the latter more or less coiled. In many fishes the anterior portion of the large intestine possesses an extension of mucous membrane to the inner wall which often runs round in the form of a spiral, and so increases the absorptive surface. The rectum may open externally independently, as in the domestic animals, or into a cloaca or common chamber with the urinary and genital ducts, as in a bird, lizard, and dogfish.

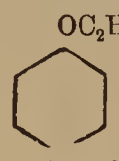
The renal and generative organs in craniates are closely associated, both being ultimately derived from precisely similar structures appearing in the development of the embryo. These structures, which consist of small groups of tubules showing a resemblance to the segmental nephridia of worms, but opening into a common duct which extends back to the embryonic cloaca, develop into kidneys, ovaries, or testes, as the case may be, and their ducts into urinary passages, oviducts, or spermatic ducts.

The blood-vascular system is much more complex than in lower forms. It consists, generally speaking, of the propelling organ, the heart, the arteries carrying blood from it into the capillaries of the system, and the veins conveying it back to the heart.

CORRECTION.—In Zool. Notes, Sec. 12, line 2—for "Protheria" read "Prototheria." On line 4—for "mammal" read "mammæ."

EXPLANATORY NOTES ON THE B.P., 1898.

Phenacetinum.—Phenacetin is closely related to acetanilide. It is para ethoxy-acetanilide, *i.e.*, it contains the ethoxy group, OC_2H_5, in the para position relative to the amido residue.



Both these compounds have antipyretic and analgesic effects, but acetanilide sometimes produces very undesirable after-effects, which are said to be due to the liberation of aniline, $C_6H_5NH_2$, in the body. Aniline is easily derived from acetanilide by the splitting off of the acetyl group. Phenacetin under the same conditions probably yields the corresponding para-ethoxy aniline (phenetidin) $C_6H_4(OC_2H_5)(NH_2)$, which is less toxic than aniline. Phenacetin is obtained by a somewhat complicated series of operations, which may be summarised as follows.

Phenol is liquefied by the addition of a small quantity of alcohol and run slowly into a strong solution of sodium nitrate to which excess of sulphuric acid has been added. This is equivalent to a fairly strong nitric acid, the excess of sulphuric acid taking up the water formed by the nitration of the phenol—

$$C_6H_5OH + HNO_3 = C_6H_4(NO_2)(OH) + H_2O.$$

In accordance with the laws of substitution already stated (*vide* Students' Columns, *Pharm. Journ.*, December 3, 1898, page 593) a mixture of ortho- and para- nitro phenols is thus obtained, but none of the meta-compound. The reaction mixture is kept cool during the addition of the phenol, and when the reaction is completed, the mixed nitro-phenols can be separated as an oily layer. To separate the ortho-phenol, which is not wanted, advantage is taken of the fact that the ortho-compound is volatile with steam while the para-compound is not. The oily layer is therefore introduced into a retort with some water and steam blown through. When no more *o*-nitro-phenol comes over, the residue in the retort is decolorised with animal charcoal and the *p*-nitro-phenol crystallised out. The hydrogen atom of the phenol group is now to be replaced by the ethyl group. This is accomplished by preparing the potassium-nitro-phenol by the action of caustic potash—

$$C_6H_4(NO_2)(OH) + KOH = C_6H_4(NO_2)(OK) + H_2O.$$

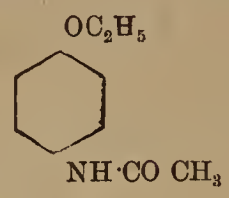
The potassium compound is then heated with ethyl-iodide, which effects the substitution of the C_2H_5 group for potassium—

$$C_6H_4(NO_2)(OK) + C_2H_5I = C_6H_4(NO_2)(OC_2H_5) + KI.$$

The nitro group is not affected in either of these reactions, which are typical of the behaviour of phenols in the preparation of their potassium (or sodium) and alkyl derivates. Compare in your text-book potassium phenol (phenate or carbolate), anisol, $C_6H_5(OCH_3)$, and phenetol, $C_6H_5(OC_2H_5)$. The nitro-phenetol is then reduced by nascent hydrogen (from zinc and hydrochloric acid) to the corresponding amido compound—

$$C_6H_4(NO_2)(OC_2H_5) + 6H = C_6H_4(NH_2)(OC_2H_5) + 2H_2O.$$

This amido compound is para-phenetidin, *i.e.*, a derivative of aniline containing an ethoxy group in the para position relatively to the amido group. This para-phenetidin is then acetylated by boiling with glacial acetic acid, and yields para-acet-phenetidin

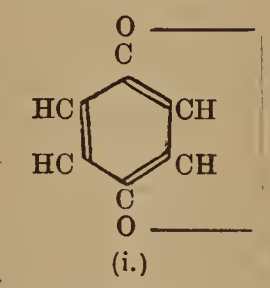


just as aniline yields acetanilide.

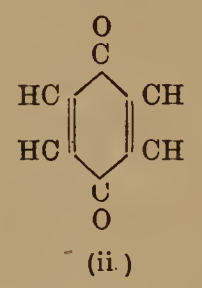
In the official characters and tests neutrality to litmus indicates absence of free acetic acid. In phenacetin the basic character of the amido residue is neutralised by its association with the acetyl group—$CO\cdot CH_3$. When phenacetin is boiled with hydrochloric acid, it is saponified para-phenetidin and acetic acid being regenerated.

$$(C_2H_5O)\cdot C_6H_4\cdot NH\cdot COCH_3 + H\cdot HO = \begin{cases} C_2H_5O\ C_6H_4\cdot NH_2 \\ + \\ CH_3CO\cdot OH. \end{cases}$$

On the addition of chromic acid the para-phenetidin is oxidised chiefly to quinone, and this, reacting with other substances produced at the same time, gives rise to a deep red dye substance. This formation of quinone is characteristic of many *para*-di-derivatives of benzene, the two substituting groups being eliminated and replaced by an oxygen atom. Quinone is one of these bodies which behave towards various reagents in such a way that its constitutional formula may be written in two ways—

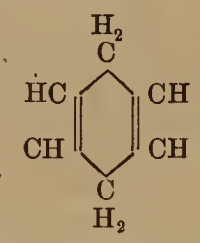


(i.)



(ii.)

Bodies like quinone are said to be "tautomeric." Read in your text-book the description of tautomerism and the evidence in favour of the two constitutional formulæ for quinone given above. Formula (i.) shows quinone as a peroxide of a typical benzene ring, while formula (ii.) exhibits it as a di-ketone of the reduced (di-hydro) benzene compound



The absence of colour when dissolved in strong sulphuric acid excludes many adulterants such as sugar, which are charred by this reagent. The bromine test is very interesting. When acetanilide is brominated ortho- and para-brom-acetanilide are produced, but not meta-brom-acetanilide, in accordance with the laws of substitution, reference to which has been given above. By inspecting the constitutional formula for phenacetin it will be seen that the para-brom compound cannot be formed, because the para position is already occupied by the ethoxy group. Moreover, the remaining four positions not occupied by the ethoxy or acetamido groups are meta- positions relatively to one or other of these, and since bromine entering a benzene ring already containing OC_2H_5 or NH_2 cannot take up the meta position, substitution by bromine does not take place, and no bromo-derivative is therefore produced by phenacetin under these conditions, as in the case of acetanilide. The compound is then said to be "protected."

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THE LORD CHANCELLOR'S PROPOSALS.

THE two Bills introduced by the LORD CHANCELLOR, which have engaged the attention of registered chemists for some time past, are apparently not to be proceeded with in their original form, as their clauses have been included bodily in the Companies Acts Amendment Bill. That measure, as readers of the Journal are well aware, has for some time past been under consideration by a Select Committee of the House of Lords, and it has been considerably modified since it was submitted to that Committee. But, in face of the previous refusal by the Government to deal with the subject of company trading as affecting professional practice, in connection with the Companies Bill, it is strange to find the following two clauses now incorporated in that measure:—

APPLICATION OF PHARMACY ACT TO COMPANY. 31 & 32 Vict., c. 121.—No company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist unless such business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, as the case may require, and unless the name of the person so qualified is conspicuously posted in the shop or other place in which the business is carried on, but, subject to this provision, anything which would be an offence under section fifteen of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

COMPANIES NOT TO ACT AS DOCTORS, ETC.—It shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife, and if any company contravenes this enactment it shall be liable, on summary conviction, to a fine not exceeding five pounds for every day during which the contravention happens.

The danger threatening pharmacy thus reappears in as acute a form as ever, and it behoves registered chemists all over the country to be on the alert and prepared, at short notice, to approach their representatives in the House of Commons on the subject. The new Council of the Pharmaceutical Society will find this very serious business awaiting its attention when it assembles next week, and it ought to feel able to depend upon the support of all registered chemists if it is decided to oppose this or any other clause by means of which it is sought to create a virtual monopoly in favour of companies trading as chemists and to injure the prospects of legitimate pharmacy. The new clause differs but little from that in the LORD CHANCELLOR'S Pharmacy Bill, which read as follows:—

APPLICATION OF PHARMACY ACT TO COMPANY. 31 & 32 Vict., c. 121.—A company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist if and so long only as the business is *bonâ fide* conducted by a manager or assistant being a duly registered pharmaceutical chemist or chemist and druggist, as the case may require, but, subject to this provision, anything which would be an offence under section fifteen of the Pharmacy Act, 1868, if committed by an individual, shall be an offence if committed by a company.

The only material difference lies in the addition of the words requiring the name of the qualified person conducting the business to be conspicuously posted in the shop or other place in which the business is carried on, and that addition will certainly not meet the views of the majority of registered chemists, who are determined, at all costs, to prevent the use of their titles by unqualified persons. Unless, therefore, the clause can be still further modified, the expressions of opinion which have been published from time to time would seem to indicate that the only course open to chemists will be to oppose the passing of the new clause into law, whilst attempting to secure the inclusion of the words "pharmaceutical chemists or chemists and druggists" in the clause intended to prevent companies acting as physicians, surgeons, dentists, or midwives.

In this connection, it is interesting to note that Sir GEORGE PILKINGTON, in his speech to the deputation of chemists which waited upon him a fortnight ago, expressed himself strongly against the LORD CHANCELLOR'S apparent desire to allow limited companies, under the power and influence of large capitalists and the rapid extension of branches, "to crush out the chemist who has spent the whole of his youth in educating himself for the passing of difficult examinations, who has established his business among a community, and who will undoubtedly lose the fruits of his life-work and industry" in the event of success attending the efforts now being made to squeeze him out of existence as a professional man. Sir GEORGE also added that he could not, for the life of him, see why certain branches of a noble profession should be included in one category, and another—not the least important branch, that of a chemist—be excluded, unless it is "to bolster up a lucrative monopoly." That, it may be pointed out, is the view of a person whose peculiar experience has enabled him to grasp the full significance of the company trading movement, so far as pharmacy is concerned. But it is also necessary to educate the "man in the street," so that he may see the matter in a similar light, and it must be the business of registered chemists during the next few weeks to see that as many other persons as possible are educated up to that point of view. Perfect organisation will be needed to prevent encroachments upon the privileges secured to registered chemists by Statute, and strenuous opposition to Government proposals may be called for; the more, therefore, the object-lesson afforded by the action of the Southport chemists, reported last week, is studied and emulated the more certain will be the outcome of the struggle.

THE POLITICAL INFLUENCE OF CHEMISTS.

THE result of the Southport election should give great satisfaction to the registered chemists of that district, and the members of the deputation which waited upon both candidates are to be congratulated upon having staked their money on the right horse. It is a moot point whether it was altogether advisable for the deputation to urge the recipients of their circular to do everything in their power to secure Sir GEORGE PILKINGTON'S return, but fortunately the individual recommended has been returned, and with an increased majority which was doubtless in great measure due to the solid support afforded by the registered chemists of the district. The promptitude with which the local secretary for Southport, Mr. JAMES RIGHTON, acted upon the suggestion published in the *Pharmaceutical Journal* for May 13 last, and the unanimity with which his fellow-craftsmen joined with him in sinking their political prejudices are beyond all praise. Pharmacy was placed before politics for the time being, and no effort should be spared to make it clear to the Government what, in all probability, that involved. It would, of course, be absurd to pretend that the Liberal candidate absolutely owed his success to the support rendered by the registered chemists in his constituency, or even that the large increase in his majority was due to their votes. At the same time those votes cannot be regarded as unimportant numerically, and it is probable that many chemists were in a position to influence the votes of other persons.

The lesson that should be drawn from what has taken place is the desirability, if not the necessity, of perfecting pharmaceutical organisation in prospect of the next general election. The influence exerted by chemists at Southport may then be multiplied many hundredfold, with the possible result that, whatever party be returned to power, a majority of the House of Commons will be pledged to devote due consideration to the just claims of chemists. The organisation required does not need to be very elaborate, the chief requisite being one active individual always on the alert in each constituency, and prepared at a moment's notice to take steps which may result as satisfactorily as Mr. RIGHTON'S ten days' campaign at Southport. The potential political power of pharmacy is enormous, but the energy which is now locked up or running to waste requires direction. That it has received in the case under consideration, and the chief hope for British pharmacy is that what has proved successful in this particular instance may be found capable of application generally.

THE INTEREST OF JUDGES IN COMPANIES.

IN connection with the principle observed in Scotland that no judge can hear or give judgment in any case in which he has a direct pecuniary interest unless both parties in the case consent, an Edinburgh correspondent writes to point out that the Scotch case referred to by Mr. MACKENZIE at the annual meeting (p. 459) was even worse than the account given by him makes it appear. The case was not brought under the Pharmacy Acts, but the company concerned has a fully-equipped pharmacy among its departments. There are thirteen judges in the Court of Session and all of them are shareholders in this concern, against which an action was brought in the Court of Session. In consequence of the principle above referred to there was thus a deadlock, which was got out of not, as Mr. MACKENZIE stated, by finding a judge who was "entirely free from any connection with the stores," but by the pursuer consenting to the case being heard and decided by a judge who was a shareholder. In a case of this kind, it is competent for any pursuer or defender to put the first part of Mr. MACKENZIE'S question "Are you connected with this company?" and if the reply is in the affirmative, either party may object to the judge being allowed to preside. But it would not be competent to put the general question constituting the second part of his query, "Are you interested in such a class of stores as is now before us?" If that were a competent ground of objection it would be impossible for any case for or against any department store to be heard or decided before the High Court of Scotland if either party concerned in the case refused to consent. It is not without interest to state that all the Scotch appeal cases under the Pharmacy Acts have been heard and decided by the judges above-mentioned, all of whom are shareholders in the supply association referred to, which has a fully-equipped pharmacy as one of its departments. Had Mr. MACKENZIE'S general question been a competent one, all the judges might have been successfully objected to in all those cases. As it is, no opportunity has presented itself for proceeding against the company in which they hold shares, whilst they cannot be objected to for hearing cases concerning other companies. It may be pointed out, by the way, that whilst Scotch judges appear to stay upon the bench until they are challenged, English judges retire voluntarily when cases come before them in which they are personally interested.

FIDELITY TO THE CRAFT.

FIDELITY to the craft is the quality which the pharmacist needs to nurture most carefully, and though the maintenance of that quality in the highest state of efficiency may, for the time being, result in a number of minor inconveniences, it is certain in the long run to prove the best weapon, both for defensive and offensive operations, against the enemies of pharmacy. True fidelity to the craft will, among other things, prevent a pharmacist from taking as apprentice a youth of an inferior class or deficiently educated; it will also lead him to decline to dispense medicines, etc., at unremunerative prices, or to have any dealings with registered persons who have in any way acted in a manner that is detrimental to the best interests of pharmacy. Uncultured apprentices, cutting prices, and assistants who have been employed by those who evade the Pharmacy Acts should be alike abhorrent to all good pharmacists; and fidelity to the craft will not permit of the recognition of those and kindred abuses. The test which should be applied whenever unusual circumstances arise in pharmacy is to ask which of the courses that present themselves is the best for pharmacists as a whole and for pharmacy as a profession. Application of that test will yield results which are at least consonant and, if not always immediately satisfactory, may confidently be anticipated to prove so, sooner or later.

As an instance of a case in which the asking of this question evokes an answer which must ultimately prove satisfactory, reference may be made to the discussion which is now taking place on the question of dispensing by unqualified persons. The chemist has been twitted with the necessity of removing the beam from his own eye before attempting to remove the mote from that of the dispensing medical practitioner. It is asserted, in fact, that dispensing is not always performed in pharmacies by duly qualified

persons. To be clear on this point, it is well to consider what are the conditions which ought to prevail, and, at the outset, it must be remembered that there is no legal restriction of the dispensing of medicines to any particular class of persons, though it is held by many that medicines should only be dispensed by those holding a medical or pharmaceutical qualification. But no such restriction prevails at present, and in discussing the question it is well to bear that fact in mind. Any medical man or pharmacist who declines to depute the dispensing of medicines to other than duly qualified persons is doing much more than the law requires of him and, to a certain extent, handicapping himself in competition with those who allow no such scruples to prevail.

At the same time, inasmuch as it seems only right and proper, in the public interest, that all medicines should be efficiently dispensed, it is beyond question that medical practitioners and registered chemists should either dispense all medicines personally or by the hands of duly qualified persons, or that they should at least exercise personal supervision whilst the operations of compounding and dispensing are being conducted on their premises. If it be sufficient, in the eyes of the law, for the sale of poisons to be effected by unqualified persons so long as the operation is supervised by a duly qualified person, it might well be permitted for legally qualified dispensers to delegate their functions to a similarly limited extent. But, as has previously been insisted upon, there are no legal restrictions upon the practice of dispensing, and though such restrictions seem eminently desirable, they need not be expected yet awhile. Probably, however, a majority of registered chemists prohibit the dispensing of medicines in their establishments except by duly qualified persons, unless the operations are personally supervised by themselves or other qualified persons, and the continuance and extension of such a practice ought to be generally encouraged. Chemists are not unaccustomed to do more than the strict letter of the law requires of them, and in regard to the dispensing of medicines they are not likely to fall short of the high standard they have set themselves in other respects.

Another exceedingly important matter in respect of which registered chemists may do much to improve their organisation is one which appears at first glance to be a purely trading affair. In reality, however, it involves nothing less than the obliteration in the public mind of the idea that the pharmacist is primarily and essentially the person of whom all substances used for medicinal purposes should be procured. Reference is made here, of course, to the custom which prevails so widely of supplying drugs and compounded medicines to grocers and small shopkeepers, in order that those unqualified persons may retail the same to the public. Nothing more suicidal can be imagined than the encouragement of such a class of trade by registered chemists who, for the sake of an increased turnover which brings with it but slight pecuniary profit, so far forget what is due to their professional standing and to their fellow-craftsmen as to assist small tradespeople to undermine the business of pharmacy. The fault is a grievous one and must be strongly deprecated, even at the risk of alienating the sympathies of many who are sound on all questions of policy but this. Without seeking directly to restrict to himself the right of vending all substances used for medicinal purposes, the pharmacist might at least do all that lies in his power to discourage the sale of such substances by others, and he ought most decidedly to refuse to supply them for such a purpose himself.

ANNOTATIONS.

The Improvement of Local Organisation, on the lines suggested by the Vice-President of the Pharmaceutical Society, Mr. Newsholme, is a subject that appears to be occupying the minds of registered chemists in other parts of the country than Yorkshire, judging from a letter received from the local secretary for Plymouth, and printed in this week's issue (see p. 521). It will be remembered that Mr. Newsholme's plan, to put it briefly, is to convert the post of local secretary of the Pharmaceutical Society into a semi-political office and to appoint so many extra local secretaries or assistant local secretaries that there shall be one in the constituency of each member of Parliament. As Great Britain is represented in Parliament by 567 members, it is proposed that there should be an equal number of registered chemists—preferably but not necessarily local secretaries of the Society—whose special duty it should be to communicate with the Parliamentary representatives for their respective divisions on all matters affecting the welfare of pharmacy. In Mr. Newsholme's words, "the great point is that, as far as possible, each member of the Commons House of Parliament should be shadowed, as it were, by a registered chemist who is one of his own constituents." Then, assuming that the organisation is made complete, whenever any matter affecting the interests of chemists and druggists came before Parliament, it would only be necessary to set the machinery in operation and the whole of the members of Parliament for Great Britain could be simultaneously and thoroughly informed on the subject, from the same point of view. In addition, if Mr. Newsholme's scheme were carried out in its entirety, the means would be available for calling meetings of the entire craft, on the shortest notice, to consider the self-same questions, and the general effect of the resulting complete national organisation of pharmacy could not fail to be of the greatest possible importance.

An Annual Conference of Local Secretaries forms part of Mr. Newsholme's scheme, and his suggestion that the first one should be held at Plymouth at the same time as the British Pharmaceutical Conference, in July next, receives support from Mr. Freeman W. Hunt, the local secretary for that town, who now formally invites local and divisional secretaries who intend to visit Plymouth on the occasion mentioned to send him their names in good time. As the intention is to call the meeting at such a time as will not clash with any other arrangements, it is hoped that this invitation will be cordially responded to. Much good can be effected by such an interchange of ideas as is proposed, between the various officers of the Pharmaceutical Society, and as the time appears ripe for a thorough revision of the Society's system of local organisation, it would be a pity not to take advantage of the exceptional opportunity afforded by the forthcoming meeting at Plymouth, to discuss the lines on which reform may best be effected. We understand that steps are now being taken in Yorkshire to prove the feasibility of the extended and comprehensive system of local organisation suggested by Mr. Newsholme by attempting to create a model organisation for the West Riding of Yorkshire. If, also, similar steps could be taken at an early date in Devon and Cornwall, the general conference of local secretaries to be held later at Plymouth would have two useful object-lessons for consideration, and the application of "modern methods of treatment" to "the difficulties and problems of modern life and business" would be effectively illustrated by concrete examples.

DISPENSING AS AN OCCUPATION FOR WOMEN is the subject of articles which appear in the general press from time to time and profess to give information as to training, methods of study, etc., but the information given is generally very inaccurate, sometimes ludicrously so. An article on this subject in the current number of a monthly magazine called *The Woman at Home*, though less incorrect than some, contains various mistakes, and is misleading in some of its statements, as is almost sure to be the case when the writer has had no actual practical experience of the matter in hand. For instance, the "Assistants'" certificate of the Society of Apothecaries is spoken of as if it bore some relation to the qualifying certificate of the Pharmaceutical Society, for in dealing with the Minor examination the writer refers to the Apothecaries' Hall examination as "the slighter preliminary one." Then, again, anyone with no previous knowledge of the subject would suppose that the curriculum in the Society's School occupied three years, for the writer states that if a woman "is prepared to devote three years to the study of practical work, her best way would be to join the Pharmaceutical Society's School of Pharmacy," while, as a matter of fact, if the whole time is devoted to study, the course of instruction there occupies nine months only. Women are also advised to go for training "to hospitals rather than to schools of pharmacy," whereas it is necessary that both should be attended—the hospital, that experience of actual routine work may be acquired, and the School of Pharmacy, that the scientific and theoretical side of the subject may be mastered.

THE ABOVE-MENTIONED ARTICLE as a whole tends to make the occupation of dispensing for women a little too much *couleur de rose*; one would gather from it that after about six months' study well-salaried appointments are at once and without difficulty obtainable, while the statement that "the necessary training is neither prolonged nor severe, and the fees are extremely moderate," is, to put it mildly, very questionable. The average woman will find that the work for the Minor examination, if properly done, will fully tax her powers, and the expense incurred in obtaining the qualification of "chemist and druggist" is considerable. The statement that one lady just qualified "reckons her training fees and books as having amounted to £60" is contradicted in the next sentence, which runs: "this, however, includes living for at least six months away from home." The writer does not seem to see that such a statement gives no information whatever as to what was actually spent on fees and books. One can only hope that women who seriously wish to adopt the occupation of dispensing as a means of livelihood will take care to obtain more accurate information about the details of training than is found in the usual run of magazine articles.

SOME CURIOUS FACTS have been educed at the adjourned inquest held last week to investigate the cause of the death of a farm servant's wife at Spalding, who is alleged to have been poisoned by mercuric chloride and strychnine administered by her husband. Algernon H. Molson, chemist and druggist, who described himself as manager of the branch shop of Dr. Talbot's Herbal Remedies Co., Ltd., is reported to have acknowledged that he had on two separate occasions sold an ounce of "white mercury" to the accused, although the purchaser was neither known to him nor introduced by some person known to him. On the second occasion, Molson also supplied the accused with a drachm of strychnine, and on a third occasion he supplied him with another similar quantity. The purchaser asked for some arsenic and prussic acid in addition, but Molson declined to supply them. Curiously enough, laudanum sold by an employé of the same company was the cause of death in a case of suicide investigated at Boston last week by the same coroner. At this inquest, Charles H. Talbot—who is apparently Dr. Talbot's Herbal Remedies Co., Ltd.—stated that the laudanum was supplied by his "chemist," who was "fully qualified." He said he had two chemists in his employment, both qualified men. If that be true, their fellow qualified men may perhaps be inclined to cry shame on those who have stooped so low.

THE PETROLEUM BILL about to be introduced by the Government will, the *Daily Telegraph* understands, contain various useful provisions. It is proposed to establish control over petroleum and admixtures of the same, generally, certain heavy oils excepted. The flash point of 73° will probably remain as the dividing line between oil and spirit, but a system of licensing is to be established for the storage of spirit in all cases, and of oil in cases where it cannot conveniently be kept under registration. Licensed and registered premises will be required to be at a safe and suitable distance from dwelling-houses, churches, or schools, and the quantity of petroleum stored must be limited. There are to be regulations for conveying and hawking both oil and spirit, for marking the vessels containing the liquids, and for keeping and using the article as a motive power. In addition, there is to be adequate supervision and administration by local authorities, and a system of testing will probably be established. As regards lamps, the use of very fragile glass reservoirs may be prohibited, and all reservoirs required, as regards strength and weight, to bear a certain relation to their oil capacity—say, one pound of glass to one pint of oil. The base of a table lamp should be larger in diameter than the reservoir, and the weight of the base should be in proportion to the height of the lamp. All wick-tubes and burners ought to conform to a standard gauge, wick-tubes should be solidly made and well soldered to the burners, and burners should be attached firmly to the reservoir by a screw collar. It is thought that if the above requirements are rigidly enforced by the proper authorities, fatal lamp accidents will become a thing of the past.

THE SPECTACLE MAKERS COMPANY'S CERTIFICATES are acting like a red rag to a bull on that section of the medical profession represented by the *Medical Press*, and it is reported in that paper that the Corporate and Medical Reform Association is actively moving in the direction of bringing professional pressure to bear upon the General Medical Council, with a view to the latter body taking steps to deal with the question. A special fund has been opened for this purpose, and the object of the agitation is described in our contemporary as "a worthy one," though doubt is expressed regarding the likelihood of the General Medical Council recognising that the matter comes within its purview. Nor is the outcome of a struggle with the Spectacle Makers Company regarded with unmixed feelings. It is thought that the Council will hesitate before entering on such a struggle, especially as it is believed that the Company is determined to fight for the maintenance of its position and to protect the professional rights of all those connected with it in the affair. On the whole, therefore, it is not anticipated that much will come of the protest.

THE EDITOR OF 'TRUTH' continues to be inundated with correspondence about the Lord Chancellor's proposals in reference to company trading and, in view of their inconsistency, he does not regard this as surprising. On the one hand, Lord Halsbury would confer upon associations of unqualified persons the legal right to assume pharmaceutical titles, while on the other he would make it legally impossible for such associations to carry on business as medical practitioners or chemists. The first proposal is regarded as grossly unfair and, with regard to the other, it is sug-

gested that there is good ground for suspecting that the clause embodying it is little more than a covert attack on the part of the dentists of Great Britain upon the business of "certain particularly successful trade rivals." It is thought that physicians, surgeons, and midwives have no cause to fear competition by companies, but that legalisation of the Lord Chancellor's proposal would mean the practical extinction of several concerns carried on by qualified men with the success due to popular methods, and the imposition of a restriction upon the sale of artificial teeth. "And if to false teeth, why should not the prohibition be extended to the sale of eye-glasses, wooden legs, trusses, or even ear-trumpets? Logically the one suggestion is as defensible as the other." The question of safeguarding the public does not arise, the editor of *Truth* alleges, in connection with the supply of artificial teeth, and he asserts that there is every reason why dentists should not be protected against competition in the manner proposed.

A PRESENTATION DINNER, at which the Lord Mayor of London presided, was given on Tuesday last at the Hotel Cecil, London, to Lieut.-Col. and Sheriff Probyn. The dinner was given "in recognition of the esteem in which Lieut.-Col. and Sheriff Probyn is held, and of the public work he has performed." Some months ago an executive committee was formed, and when Colonel Probyn was made Sheriff of the City of London he was presented with his chain of office, and it was also decided to present him with a portrait of himself. Mr. Seymour Lucas was commissioned to paint it, and at the dinner the presentation was made by the Lord Mayor, who referred in warm terms to the admirable manner in which Lieut.-Col. and Sheriff Probyn had discharged his duties as a member of the London County Council and as Sheriff of the City of London. The address of the subscribers to the presentation was then read by Mr. Woodward, and Lieut.-Col. and Sheriff Probyn, in rep'y, expressed his deepest gratitude for the presentation.

THE ROYAL INSTITUTION celebrates its centenary next week, and the *Times* directs attention to the fact in a brief sketch of the progress and work of that home of science. Other English scientific organisations, it is pointed out, may hold a more conspicuous position as official representatives of English science, but there is none so indissolubly associated in the minds of foreigners with the great fundamental triumphs of science in the present century. "There is no research into the constitution of matter, no investigation of the laws of light, no extension of the observations of the astronomer, no new application of electricity to the ever-increasing number of industrial problems, which does not inevitably carry the mind of the instructed inquirer back to the Royal Institution." Science has been made fashionable there, but within its walls a succession of eminent men have steadily pursued studies of the most advanced kind, and maintained their position in the forefront of pure research, just as if its theatre had never been filled by audiences more concerned with the fairy tales of science than with the laborious and difficult investigations from which they are evolved. It may justly be claimed for the Royal Institution that it is entirely unique in its comprehension and successful co-ordination of functions usually regarded as incompatible, if not antagonistic. "By its pure research and the splendid results it has achieved it has conferred benefits upon science such as no mere society of record, however dignified, can ever yield, while by its simultaneous appeal to the intelligent classes, who without being professionally scientific are ready to be interested in science, it has rendered services of another kind, the full value of which it is not easy to estimate." The Institution was founded by Sir Benjamin Thompson (Count Rumford) in 1799, the first meeting of managers being held in Albemarle Street on June 5 of that year, and ever since pecuniary aid has been forthcoming for the promotion of experimental research in the premises where Davy, Faraday, and Tyndall, by their patient and laborious work, attained to eminence in the world of science.

THE VIBRATORIUM is the latest addition to the physician's armamentarium, being described in the *Inventors' Review* as a practical application of music to therapeutics. It is the invention of an electrician who holds, as have others before him, that the material being of man is affected in a wholesome way by music, and he bases his theory upon the generally recognised effects a succession of harmonious tones has upon the emotions. The vibratorium is described as consisting of a cot held in position between organ pipes and supported by light rods connected with a piano. The patient to be treated is placed in the cot or sounding box, and the performer or dispenser begins to operate at the key-board of the apparatus, playing the selection which has been prescribed as being best for the peculiar ailment to be treated. The direct mechanical effect is "a kind of intense, thrilling vibratory action, as marked as that of an electric shock, but continuous and soothing." The tone vibrations resulting from contact with the sounding surface are said to "act upon every fibre, fluid, and part of the body, as sound permeates and passes through every obstacle interposed between its source and the ear which finally distinguishes it. All this disturbance is of good effect, and one harmonious, healthful wave passes through the ailing body as the music is played." The inventor has not yet compiled a pharmacopœia of tunes for different ailments, but he is of opinion that, following the development of his system, the variety of remedies will in time be as great as the almost limitless sphere of harmony itself. A symphony in G by Mozart, executed on the oboe, is suggested as being likely to work wonders in the case of a professional tourist suffering from "that extreme tired feeling," and it is thought that a clarionet obligato could not fail to benefit persons suffering from any soporific weakness, whilst the remedy for a person suffering from an overdose of brass band or barrel organ would naturally appear to be a homœopathic one.

MR. JAMES REID'S PROTEST against the publication of Mr. Jesse Boot's opinion (see pp. 481 and 501) is supported on somewhat different grounds by two correspondents in this week's Journal (see p. 521), but, like Mr. Reid, they both appear to lose sight of the very important fact that questions as to the value of the chemist's qualification and the necessity of upholding it are matters of public interest that cannot be decided only by the opinion of legally qualified chemists, however reasonable that may be from their particular point of view. In that sense another correspondent more reasonably recognises the importance of the opinion expressed by Mr. Jesse Boot as giving support to the qualified chemist's contention, besides expressing an estimate of the object and intention of the Pharmacy Act, 1868, that is in perfect accord with the past efforts of the Pharmaceutical Society. The admission that "every chemist's shop should be wholly and solely under the control of a registered chemist" shows that Mr. Boot properly appreciates the value of qualification to the public, and the responsibility connected with it, even better than has always been the case within the ranks of legally qualified persons. That view requires to be impressed upon the public and upon Members of Parliament in order to obtain any proper statutory regulation of the practice of pharmacy. At present it may be said there is no adequate pharmacy law, but only the imperfect and now worn-out substitute of a wretched Poisons Act.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

An Innovation Introduced Last Year at the annual meeting of the Pharmaceutical Society of Australasia, when the usually somewhat prosaic business proceedings were followed by a very successful conversazione, graced by the presence of the fair sex, was still further improved upon this year, the formal meeting being disposed of at a morning sitting, and the conversazione, introduced by the interesting function of presenting the prizes to the successful students for the year at the Melbourne College of Pharmacy, held in the evening. The prize list this year disclosed a most remarkable record for one particular student, Mr. Harold Retchford, who not only captured the silver medal for chemistry and practical pharmacy, the silver medal for materia medica and the bronze medal and Lecturer's prize for botany, but also the gold medal for the Honour Examination, in which he achieved the position of Dux of the College. Mr. Retchford was warmly congratulated on his phenomenal success, and in responding paid a grateful tribute on behalf of himself and his fellow-students to the lecturers and authorities of the College for the splendid facilities and thorough instruction afforded them in the various classes. In the contest for the Lecturer's prize for medical students of the Melbourne University in practical pharmacy, a lady—Miss E. H. Barrett—came in a good second to Mr. Horace J. Holmes, for whom Dr. F. Hobell Cole predicted a most successful medical career. Miss Barrett, it may be added, in addition to this success, has also taken the only exhibition offered in the medical course at the Melbourne University this year. The conversazione itself will long be remembered as a most enjoyable success.

At the April Meeting of the Council of the Pharmaceutical Society of Australasia, Mr. W. Witt was re-elected President, and Mr. E. G. Owen, Treasurer; Mr. E. T. Church was appointed Vice-President, and Mr. A. R. Bailey elected to the vacancy on the Council caused by the resignation of Mr. Max Pincus. Another vacancy has now to be filled owing to the resignation of Mr. D. A. Simpson, which has been received with great regret.

The Annual Meeting of the Pharmaceutical Society of New South Wales was held on March 21, when Messrs. Brothwood, Jenkin, and Butcher, the retiring members of the Council, were all re-elected. The balance sheet submitted showed the principal receipts for the year to be £157 8s. from subscriptions and £109 4s. from examination fees, just about balancing the expenditure, the principal items of which are—Secretary's salary, £100; subsidy to Journal, £50; and fees to examiners, £38 6s. 6d. A further statement of assets and liabilities shows a capital balance to credit of £657 13s. 7d., represented by cash in hand and bank, library estimated at £200, and laboratory at £62 4s. 3d., while the Benevolent Fund now stands at £27 14s. 9d.—not a very large sum, but one on which there are, fortunately, as yet no claims.

Among Other Amendments and Additions to the articles of association adopted at the meeting were the following:—

> "If any member of the Council shall, without leave of absence granted by the Council, be absent from the meetings thereof for a period of three consecutive months, his seat on the Council shall be declared vacant."
>
> "The Council may, in their discretion, nominate such members as have advanced by meritorious original investigation in the study of pharmacy, and the allied branches of science, and the members shall at the annual general meeting proceed to elect such nominees as Fellows of the Society. Any Fellow may, after election, be exempted from further subscription at the discretion of the Council, and may have the same privileges and be subject to the same provisions as life members."

An Inaugural Dinner in connection with the recently-formed Registered Pharmacists' Society of N.S.W. was held in Sydney on April 12. There was a large and influential attendance, and the proceedings were very enthusiastic. The Society, it will be remembered, was started as a protest against the refusal of the Pharmaceutical Society of N.S.W. to admit any of the newly-registered pharmacists under the Pharmacy Act of 1898 as members unless they passed such examinations in chemistry, pharmacy, and other allied branches of science as might be determined by the Council. The progress already made by the new Society was triumphantly referred to by the President (Mr. Rose) and Hon. Secretary (Mr. Bellemey), the latter of whom said he felt justified in hoping that at their next annual gathering they might be able to boast of a roll of at least two or three hundred members. Among other objects, the new Society intends to firmly support the principle of inter-colonial reciprocity in pharmacy, and in the meantime is, through its Hon. Secretary, strongly denouncing the registration under the Friendly Societies Act of what is known as the Sydney United Friendly Societies' Dispensary, the directors of which, it is asserted, are practically carrying on the business of a registered pharmacist under the shelter of the Friendly Societies Act, and thereby escaping the burdens and liabilities which pharmacists and other traders incur and submit to.

Prior to His Departure for England, per R.M.S. "Omrah," on April 4, Mr. E. Norton Grimwade, of Messrs. Felton, Grimwade and Co, Melbourne, was entertained at a farewell dinner at the residence of his father, the Hon. F. S. Grimwade, at which the principal employés of the firm were present. Mr. Norton Grimwade's health was proposed by Mr. Thos. Cowley, who has been with the firm for the last thirty years, and drunk in a very hearty manner. It is understood that Mr. Grimwade, who is accompanied by his wife, will spend some time on the Continent and return *vid* America.

FOOD AND DRUGS ACT PROSECUTIONS.

Milk of Sulphur.—Thomas Sawyers, grocer, 2, Longclose Lane, Leeds, was summoned at the Leeds Police Court on May 17 for selling 3 ozs. of milk of sulphur which was adulterated with 62 per cent. of calcium sulphate.—Defendant stated that he sold the article in the same condition as received from the wholesale house.—A fine of 10s. was imposed, and the magistrate advised defendant to obtain a warranty of purity with goods in future.——John Tarley, grocer, 29, Sussex Street, Leeds, was also fined 10s. for a similar offence.—— On May 19 several other cases were heard at the same Court. Mrs. Harrod, 8, Christopher Road, Woodhouse, was fined 10s. for selling milk of sulphur containing 76 per cent. of calcium sulphate, and a similar fine was imposed upon Henry J. Clarke, 30, Upper Accommodation Road, for selling milk of sulphur containing 62 per cent. of calcium sulphate.—The magistrate, while stating that no reflection was cast upon the characters of the defendants in the foregoing cases, inasmuch as they were not aware of the composition of the article in question, issued a word of warning to dealers in drugs, remarking that he should deal more severely with offenders in such cases in future.

Lime Juice.—A verdict of not proven was found at the Edinburgh Police Court, on May 19, in the case of Lewis Dimarco, who was summoned for selling as lime juice a mixture certified by the city analyst to consist of water, sugar, and acid, and possibly a small quantity of lime juice as flavouring. In his opinion, the article was not lime juice, which should be a solution of citric acid in water with a certain amount of potash and vegetable matter. The Sheriff was of opinion that the case had not been made out, because the inspector who purchased the article was told "this is what we sell for lime juice." That, he considered, was equivalent to an admission by the seller that it was not pure lime juice.

Sweet Spirit of Nitre.—At Leeds Police Court, on May 17, the Kippax Co-operative Society was charged with selling sweet spirit of nitre not of the nature and quality demanded by the purchaser, being deficient in nitrous ether to the extent of 1·06 per cent.—It was stated on behalf of the Society that the spirit had been in stock about three months, two pounds having been purchased at the time, and kept in 4-oz. bottles. The case was dismissed on payment of costs, the magistrate advising the manager to buy in smaller quantities in future.

Camphorated Oil.—At the Birmingham Police Court, on the 26th ult., Joseph Gilman, trading as Joseph Gilman and Sons, Stafford Street, was charged with selling camphorated oil containing 74 per cent. of foreign oil, contrary to the stipulations of the B.P. It was stated that the defendant was unable to appear, and after Inspector Jones, of the Health Department, had given evidence as to the purchase of the sample, Mr. Cope, on behalf of Gilman, admitted the offence. He said, in explanation, that the man who made the oil was instructed to make it in accordance with the requirements of the B.P., but had used

sweet oil instead of olive oil. Mr. Cope said it was a pure mistake, and the article would probably have been found correct at any other time. It was a fact, he admitted in answer to a magistrate, that the sweet oil was cheaper than the olive oil. A fine of £5 and costs was imposed.

SCHOOL OF PHARMACY STUDENTS' ASSOCIATION.

The President (Professor J. Norman Collie) took the chair at the general annual meeting on Thursday, May 25. After the minutes of the last meeting had been read and confirmed, the annual report was read and the accounts were audited. These showed the receipts for the year to have been £12 4s. 6d., and the total expenditure £5, leaving a surplus on the year's work of £7 4s. 6d., comparing favourably with last year, when there was a slight deficit. Under the new arrangements the money is invested in the Post Office Savings Bank. The attendance at the meetings, however, had not been so good as at those of the previous session.

Mr. Battle considered the falling off of the attendance to be due to a new departure taken at the beginning of the session, when it was decided not to distribute notices of meetings to every member working in the laboratory, but to make one notice on the notice-board suffice for all. He contended that members either failed to see the notice or forgot all about the meetings, and he would therefore propose, "That cards be distributed as in former sessions."

This was seconded by Mr. Ewell.

Mr. Payne thought one notice in the laboratory was quite sufficient for all members working there. He would bring forward as an amendment "That one notice should suffice for all members working in the laboratory, other members to receive notice as at present."

Mr. Garsed seconded the amendment.

On a show of hands being called for, the amendment was defeated by one vote.

Mr. Battle also thought members of the Committee should receive longer notice of the meetings, and he should like a note to that effect entered on the minutes.

The President having expressed his firm belief in the future success of the Association, the meeting terminated.

CHEMISTS' ASSISTANTS' ASSOCIATION.

The President, Mr. F. W. Gamble, took the chair at the annual general meeting of this Association, held at 73, Newman Street, W., on Thursday, May 25. There was a fair attendance of members.—The minutes of last meeting having been read and confirmed, Mr. Meynell and Mr. James were appointed Scrutineers of the votes for the election of Council for next session. Mr. James and Mr. H. Wilson were appointed Auditors.—The Secretary, Mr. H. Hymans, then read the

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which stated that the Council had much pleasure in presenting that —its twenty-second annual report. Twenty-two new members had been added to the Association during the session, but many old members had resigned. The patrons of the Association numbered forty-eight—within two of the limit imposed by the rules. Fifteen papers, many of which reached a high standard of interest and scientific importance, had been read, while the attendance at the scientific meetings had been about the average. The social gatherings had again met with unqualified success, the Annual Reunion this year taking the form of a smoking concert, which was a first-rate entertainment. The Council once again expressed regret that no entries had been received for the Association essay and research prizes. The financial condition of the Association, as evidenced by the financial report, was sound.

The President, in moving the adoption of the report, referred to the considerable loss the Association had sustained during the session through resignation of members. Many had resigned on account of going into business and other legitimate causes, but others had severed their connection with the Association for no particular reason, so that although there had been a number of new members elected there was no actual increase in strength.

Mr. Pearson seconded the motion, and the report was adopted.

The Treasurer, Mr. C. J. Strother, then presented a provisional financial statement showing a balance of considerably over one hundred pounds. He apologised for not being able to tender a complete statement, but inasmuch as a number of members had not yet paid their subscriptions it was impossible to do so.

The President commented on the report, and said their thanks were due to the Treasurer for the admirable way in which he had managed their finances.

Mr. T. Morley Taylor said the report was most satisfactory in some respects, but with regard to the number of subscriptions received, it simply showed that many of the members had not paid. He considered it was abominable that some men could not be members for twelve months without the secretaries having to apply for the subscription two or three times. He thought it would be well if some public protest were made whenever the names of previous offenders in that respect again came up for election.

Mr. Taylor then seconded the motion for the adoption of the report, which was carried.

The Council Election.

The Scrutineers next presented their report, as follows:—Thirty-six voting papers have been received, none of which were invalid. The result of the voting was: F. W. Gamble, 36; C. Morley, 36; C. J. Strother, 35; T. Morley Taylor, 35; H. Hymans, 34; J. Fothergill, 33; A. Latreille, 33; Geo. Pearson, 30; H. H. Robins, 30; T. E. Lescher, 29; Barlow, 25; Evans, 25; H. Lumley, 25; J. E. L. Moore, 25. These constitute the Council. The unsuccessful candidates were: D. N. Fullerton, 24; G. Curry, 22.

A vote of thanks was accorded to the Scrutineers by acclamation, and Mr. Gamble then delivered his

Valedictory Address.

He said a valedictory address was a fitting finish to the sessional work, not because it was a formal leave-taking, but because it gave an opportunity for utilising the experience gained during a year of office, and of setting forth those fruits of experience in the true spirit of valediction, which might be, in some respects, chastening, advisory, or wholly complimentary. He proposed to draw their attention to the three phases. The Council report stated that the attendance at the scientific meetings had been "about the average." He wished to affirm that that average was a very small one; it was less than one-eighth of the total number of members, or, deducting the regular executive officers present, not one-tenth of the unofficial members. The thorough carrying through of the work of that Association severely taxed the energies of the Executive, but the work became a pleasure when the support of members was cordially given. It, however, was not encouraging to the officers, and less complimentary to the lecturers, when such a comparatively small proportion of members attended the scientific meetings. No competitors had entered for the essay and research prizes. Here, said Mr. Gamble, might be seen the spectacle of five-pound notes keenly desirous of a change of ownership, with no one willing to take temporary charge. The conditions were not onerous and should be easy of fulfilment by a large proportion of members. During the year, their craft had been much beset by the stormy winds of pharmaceutical politics. They had ridden on the crest of the wave; now they were considered by some to be floundering in its hollow, in momentary danger of engulfment. In either case, he thought they should stick to the ship. Most of their members were, or he hoped were about to become members of the Pharmaceutical Society. Probably the badge of membership would become the highest emblem of respectability, for although seven heterogeneous persons might in the future suddenly become "Chemists and Druggists" by the act of incorporation, he did not think it had been suggested that they should be admitted to membership of the Society. He desired, at this point, to give expression to the regret that it should have been found necessary to give vent to personal acrimony in discussing the affairs of the body pharmaceutic. He could speak with pleasure of the support accorded to the Association by the gentlemen prominent in the scientific, medical, and pharmaceutical worlds, who had so kindly contributed papers to the Association that session. He must also compliment the Association upon the splendid success of its social functions. In conclusion, he thanked the Council, and especially the Vice-Presidents, Secretaries, and Treasurer, for the support they had given him during his year of office.

Mr. T. Morley Taylor (ex-President) said the pleasurable duty fell upon him of proposing a hearty vote of thanks to Mr. Gamble for piloting the Association through what had been a very trying

session, occasioned by the change of secretaries and on the Council, which necessarily threw much more work upon the President. His ability, energy, and affability deserved their gratitude.

Mr. C. MORLEY seconded. Mr. Gamble had proved to be a first-rate good all-round man, and had acquitted himself well. It had not been usual with them to have a President who could combine the qualities of an excellent chairman at scientific meetings and also at social functions.

The vote of thanks was vociferously accorded.

Mr. GAMBLE, in replying, advised every member to endeavour to get on the Council, and eventually to be President. The Association had an honourable reputation in the pharmaceutical world, and he urged members to maintain that reputation.

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION.

The annual meeting of the members of the Nottingham and Notts. Chemists' Association was held on Wednesday evening at the Masonic Hall. Mr. Richard Fitzhugh, J.P., presided, and was supported by Mr. E. Gascoyne (Vice-President), Messrs. E. Eberlin (Secretary), A. Middleton, W. Gill, J. Wilford (Treasurer), R. H. Beverley, J. T. Rayson, H. Brown, T. Freeman, C. W. Warriner, A. Bolton, R. Widdowson, etc.

COUNCIL'S REPORT.

The SECRETARY then presented his annual report, which stated that the past year, while not being characterised by anything of a startling nature, had nevertheless been marked by steady progress and by good feeling within the ranks of pharmacy. The report reviewed the various meetings held during the year, stating the purpose for which they had been summoned. With regard to educational matters in connection with the Society, the report with pleasure recorded continued success. During the past session a full three-term course in botany had been held and twenty-eight students had joined the class, while the attendance and diligence of the students had given gratification to all concerned. The third term—at the end of which a competitive examination is held—is still current. In the second of the college terms a class in practical dispensing was conducted by Messrs. Eberlin and Furton. Seven students joined, and both the attendance and progress were extremely good. Mr. Sergeant conducted an examination of the students at the close, and spoke highly of their work. The Council would be pleased to see this class, as well as the work in practical pharmacy, greatly extended in their scope in the near future. The Association had now a roll of fifty-one members, three honorary members, and twenty-eight associates. The Council recorded, with regret, the death of one member of the Association (Mr. Sinclair). During the past year four students of the Association had passed the Minor examination, and one the Major examination.

On the motion of Mr. GASCOYNE, seconded by Mr. MIDDLETON, the report was adopted.

TREASURER'S REPORT.

Mr. C. A. BOLTON, as one of the auditors, presented the Treasurer's report, which showed that the year's receipts amounted to £84 7*s.*, including £30 18*s.* 6*d.* brought forward from the previous year, while the disbursements were £73 0*s.* 3*d.*, leaving £11 6*s.* 9*d.* to be carried forward.

On the motion of Mr. BOLTON, seconded by Mr. BEVERLEY, the report was adopted.

QUALIFIED ASSISTANTS.

Mr. EBERLIN moved the following resolution :—

> That qualified assistants in the employ of members of the Association be eligible for membership on payment of a subscription of 2*s.* 6*d.* per annum.

Mr. Eberlin said it had occurred to him that there was a number of qualified assistants in the city who would be glad to become affiliated in some way with the Association, but who, up to the present, had never been invited to do so. He thought that if they were invited to join the Association it would keep them in touch with the Association, and it might be the means of preventing a qualified man drifting elsewhere and selling his qualification to an unqualified man.

Discussion ensued, in the course of which it was decided that the matter be referred to the incoming Council, which should also revise the existing bye-laws.

VOTES OF THANKS TO THE PHARMACEUTICAL SOCIETY.

On the motion of Mr. MIDDLETON, seconded by Mr. WILFORD, a vote of thanks was given to the Pharmaceutical Society for the gift of the Journal, the Calendar, and the Register.

ELECTION OF A NEW MEMBER.

Mr. W. A. Russell Bennett, of Alfreton Road, was unanimously elected a member of the Association.

THE NEW COUNCIL.

The voting for the election of the new Council then took place, thirteen being nominated for eight places. The following were elected, viz.: Messrs. F. R. Sergeant, E, Gascoyne, C. A. Bolton, W. Gill, A. E. Beilby, A. Middleton, T. Wilson, and R. Widdowson.

ELECTION OF OFFICERS.

The following were nominated for the various offices, viz.: President, Mr. R. Fitzhugh, J.P.; Vice-President, Mr. R. H. Beverley; Treasurer, Mr. J. Wilford; Hon. Sec., Mr. A. Eberlin. A hearty vote of thanks was given to Mr. Gascoyne for his services in the vice-chair.

DENTAL NOTES.

XEROSTOMIA (DRY MOUTH).

An interesting case of treatment is reported in the *Medical News*. A woman aged fifty-six, and though edentulous for fifteen years, was robust. She suffered from extreme dryness of the mouth for four months which caused her to constantly chew in order to relieve it. Several remedies were tried without effect. She was then advised to keep smooth pebbles in her mouth, and experienced marked relief. A set of teeth were next ordered; since wearing them she has not had the slightest symptom of the trouble which had been harassing her constantly for twenty months.

SENSITIVE DENTINE.

Cold water is recommended in *Items of Interest* as an obtundent in mild cases of sensitive dentine. The cavity to be flooded with a stream of cold water forced from a bulb syringe. The colder the water, in reason, the better for hasty results. The first application of a cold stream of water into some cavities will produce a sensible shock, but persistent application for a few moments will produce a soothing effect, and excavating can be freely done without complaint from the patient. The writer of the article questions if there ever was a greater error or more unreasonable method in practice than drying and applying heat to cavities preparatory to excavating, and that the drying and heating process will increase rather than diminish sensitiveness of tooth structure. In the *Pac. Med. Dent. Gazette* a writer recommends guaiacol as a local anæsthetic and obtundent for sensitive dentine. Placed in a sensitive cavity and thoroughly dried by the use of the hot-air blast, it will penetrate far into the tubuli, and render subsequent excavation almost painless. When preparing cavities on the labial surfaces of the incisors and buccal surfaces of the bicuspids extending well up under the gingival border, a drop of guaiacol placed thereon will enable the operator to tie ligatures or force gum out of the way with little or no pain. It is a good styptic, and in the cases just mentioned aids materially in arresting hæmorrhage. It is also recommended as a disinfectant and germicide in the treatment of septic root canals.

APPLICATION FOR SENSITIVE DENTINE.

Carbolic crystals added to cocaine hydrochloride, and rubbed together to form a thick syrupy liquid, is an excellent application for sensitive dentine. The rubber dam should be used and the cavity thoroughly dried out with a hot air syringe before applying, then the hot air used again; one or more careful applications will always produce the desired effect. Sharp excavators and burs lightly and skilfully used will then be found capable of preparing the most sensitive cavities with little or no inconvenience to the patient. Instruments can be thoroughly sterilised by dipping them in alcohol, and then burning it off.

EXTRACTS FROM CONSULAR REPORTS.

The Import of Foreign Opium into Swatow, China, according to recent returns, is rapidly regaining the dimensions it attained to in the years prior to 1895. In 1897 there was an increase in the import of all kinds of foreign opium of 486 piculs, and in 1898 a further advance of 825 piculs was recorded. The total quantities of the different varieties imported in 1897 and 1898 were in the former year 4228·29 piculs, and in the latter 5053·32. The increase was pretty evenly distributed amongst the three varieties of Indian drug, Malwa, Patna, and Benares, while the Persian article again fell off. The returns also show a rise in the import of the native drug, but inasmuch as the trade in the native article is to a large extent illicit, and the fact that in 1898 the supply from Ssŭ-ch'uan was very short, owing to the crops in that province having been seriously interfered with by floods and by the political disturbances, as a consequence prices advanced to a point which induced holders in Ssŭ-chu'an to think that it would pay to send the drug round by steamer, hence the import recorded in the Customs Returns was a little more than double that of 1897—489¾ piculs, against 244 piculs—while the quantity of native opium imported into the Swatow district was actually very much less than usual.

The Annual Business of each of several St. Louis (U.S.A.) wholesale drug establishments is reported to amount to over £400,000. One of them is said to handle everything from a box of chewing-gum and a can of paint to the most expensive and rare drugs known, and has manufactories of perfumery articles connected with it. A manufactory of listerine and one of antekamenia are reported to do a world-wide business. The increase in the trade over 1897 is reported as £200,000.

The Olive Crop in Austria-Hungary was a failure in 1898, hence the production of oil was very poor, and cotton-oil from the United States, which continues to find favour with consumers in Austria, was imported in increased quantities. The greater portion of the oil enters Austria *vid* Holland, as transport by that route is cheaper than by railway from Trieste. It is reported that of late factories have been established in the interior for the manufacture of artificial butter from cotton-oil.

A Similar Story in regard to the failure of the olive crop is told from Tuscany, although up to the end of September the prospects of the coming crop of olives were generally very good throughout the country, the olive-trees being heavily laden with fine, sound olives. Unfortunately, however, at that period the olive maggot made it appearance in great numbers, practically destroying the entire crop in some localities, such as the Maremma district. In other parts of the country a good part of the crop was saved, nevertheless the damage was very serious. On the whole, probably one half of the olive crop in Tuscany was lost through the ravages of the maggot during last season.

Thirty Per Cent. of the Business in sodium carbonate, according to the report of Vice-Consul Carmichael on the trade and commerce of Leghorn for the year 1898, was secured by Great Britain, the British imports of the article increasing by 4000 cwts. on the previous year. This is the more satisfactory, as on the total import there was somewhat of a decline, owing in a measure to the fact that the soapworks were less active last year.

The Once Flourishing Pumice Industry of Leghorn is reported to be steadily declining, a decrease of nearly 1000 tons below the average of the years 1891-97 being recorded in the export of pumice stone last year. The grinding done at Leghorn is said to be superior to that done on the spot in the Lipari Islands, whence the stone comes, and certain purchasers prefer the dearer Leghorn-ground article to the cheaper product of Lipari. But the close vicinity of Messina and the improvement which it is thought will certainly take place in the manipulation of the island industry, is bound to condemn Leghorn to the slow and steady loss of a branch trade in which she once stood pre-eminent. As symptomatic of the growing importance of the Lipari industry, it is mentioned that during the past year a Belgian steamer actually loaded 300 tons of pumice-stone at the islands themselves, while several Leghorn manufacturers have transferred their workshops to Lipari.

LETTERS TO THE EDITOR.

All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and not in any case to individuals supposed to be connected with the Editorial Staff; no responsibility can be accepted unless this rule be observed. Communications for the Current Week's Journal should reach the Office not later than Wednesday, but news can be Received by Telegraph until 4 p.m. on Thursday.

Local Secretaries and the Conference Meeting.

Sir,—Would not the coming Conference at Plymouth offer a good opportunity for a meeting of local secretaries? Personally I should like to see such a meeting arranged every year at the same time as the Conference, and, further, that the local secretaries of a division should meet occasionally and send a delegate periodically to headquarters or to the Conference, to consult with the Secretary and other officers and discuss the situation generally, bringing forward what appears to be of interest to the trade, and getting well posted up in the affairs of the Society. I have been somewhat forestalled by Mr. Newsholme's suggestion thrown out at a meeting he addressed at Bradford, but hope he will have prepared local and divisional secretaries and their assistants for my letter, asking all who purpose attending the Conference at Plymouth to send me their names, so as to enable me to make arrangements to ensure a useful gathering, which shall not interfere with other arrangements for the week or encroach too much upon the time of those who attend the Conference. I trust many will make it convenient to be present, especially those in Devon and the neighbouring counties.

Plymouth, May 29, 1899. Freeman W. Hunt,
Local Secretary.

Unqualified Opinion.

Sir,—Has Mr. Boot passed the necessary examinations entitling him to use the title of chemist? If not, what is his opinion worth? Perhaps he would welcome that legislation would permit only those persons who have earned the title of chemist to use it, which is only fair? Is Mr. Boot conscientious enough for this?

May 30, 1899. Country Chemist (188/27).

Sir,—Chemists have had to put up with many annoyances for some time past, but it is surely a great insult that a man like Mr. Jesse Boot, who has had no pharmaceutical training and possesses no qualification, should tell chemists that he "would thoroughly welcome legislation that would compel every chemist's shop, whether belonging to a company or otherwise, to be wholly and solely under the control of a registered chemist." Is it not a fact that in every one of the 130 or more "chemist's" shops owned by Jesse Boot and his company, not a single qualified chemist is permitted to make any drugs, however simple—not even, I believe, aqua chloroformi! Nor are they allowed to prepare any of the medicinal preparations for sale, everything being sent from their warehouse. I believe the same plan is adopted by other large companies, the medicinal articles being put up by young girls and boys, who have to work at high-pressure speed. Is this intolerable state of things expedient for the safety of the public? The men in these stores who hand over the preparations to the public are not allowed to know the contents, and in those preparations containing poisons the quantity of poison in the bottle is carefully kept from them. We shall probably wake up some morning to read of a frightful number of fatal poisoning cases having occurred through some of the boys and girls employed by those quack companies having labelled poisonous lotions as children's mixtures. Of what use are qualified chemists in these places? They are merely used as tools to deceive the Government and the public. And many of these men—forced by

circumstances to serve under these quack masters—look upon and speak of them with contempt. If Jesse Boot is really in earnest when he writes that he would have every chemist's shop belonging to a company placed wholly and solely under the charge of a qualified chemist, I would suggest to him to at once carry out his benevolent idea in the numerous shops he controls; it would be greatly to the benefit of the public. I trust that, in addition to the pages of the *Pharmaceutical Journal* being closed to unqualified opinion, in future no advertisements for assistants wanted will be inserted from drug companies.

May 30, 1899. A DOWN-TRODDEN CHEMIST (188/28).

The Sale of Proprietary Articles.

Sir,—I have recently received from Mr. Thomas Keating a copy of a circular letter accompanying a reduced monotint representation of a new showcard which, he suggests, will be a "brightener up" in any establishment. He also says:—"As you probably know, I made a special little compliment of a dozen 6d. powder to those chemists who exhibited my Searchlight card, and although I hope to repeat something of the kind again, I must frankly say that I cannot afford it every time, and am therefore unable to do so with this card. If you are willing to exhibit one I shall be very pleased to deliver same free to address on receipt of your label." In reply to this circular I stated that I did not take advantage of the "special little compliment" of 1 dozen 6d. insect powder, for the exhibition of his advertisement, believing it to be detrimental to my business. Life has become too real and too earnest to exhibit an advertising card, when the profit arising from handling such an article is comparatively nil; hence, I am assured that Mr. Keating cannot expect me to do any other than to discourage the sale of his preparation with the whole of my ability, and to introduce in its place an article for the same purpose packed under my supervision. The moment that he is prepared to guarantee a 25 to 33⅓ per cent. profit he may expect to receive the ear of chemists, but I am of the belief that a vast amount of money is being wasted by manufacturers who are not in sympathy with those upon whom they mostly depend to render them assistance.

Plymouth, May 30, 1899. JAMES MAURICE.

The Recent Council Election.

Sir,—Kindly permit me, through the Journal, to thank those gentlemen who recorded their votes in my favour at the recent election of Council. Although unsuccessful, I trust that this primary effort of chemists' assistants seeking direct representation on the Council will act as a stimulus to our future efforts in the accomplishment of this desideratum.

London, May 31, 1899. R. E. WRIGHT.

The Poison Regulations.

Sir,—Noticing the outburst of wrath in the last Journal, I felt emboldened to express also my objection to the giving of what is called "irresponsible advice," whatever that might mean. We have lectures and sermons, sometimes quite unnecessary, and more than that. We had some last year and again this, just before the adoption of the proposed totally unnecessary Poison Regulations, which are but—with the penalties—an extra burden on the poorer brethren. Therefore, I do not share in the general apathy, nor in the complacency with which the infliction of them was regarded by the general meeting, in the report of which I was much disappointed in not reading expressions of dislike. I am not one to follow the tinkling of every self-appointed "bell-wether." "Not know the English language," quotha! Verily, I have read a little in that language, and remember a passage which occurs in a standard book—"No doubt ye are the wise people, and when you die wisdom will die with you." Also in another book: "There are some men who think that, like Colossi, they do bestride this narrow world, and we, the petty men, creep in and out between their legs." I have often noticed the want of sympathy with the poorer brethren of the profession, a sort of indication that their existence is not needed, that they might as well perform the "happy dispatch." My sympathy is with those who opposed the adoption of the Poison Regulations, the principal reason for which, I gathered, was the need of giving a sop to Cerebus. Well, it has been swallowed, and now *Cui bono?* Well, certainly the *facilis averni decensus* has been accelerated; that is something!

May 31, 1899. PONDO (188/30).

ANSWERS TO QUERIES.

Marqueterie Work (H. L. S.—28/33).—We are unable to help you in this matter, and would suggest that you write to the Editor of the *English Mechanic* or *Work* for the information you require. It is hardly within the province of the *P. J.*

Limited Liability Company (J. S.—29/23).—The point whether it is legal for associations of unqualified persons to use pharmaceutical titles has never been specifically decided by the courts, and the fact of employing registered chemists as assistants does not affect the matter in the least.

Waterton's Solution (A. W.—28/17).—We cannot say definitely what this may be, but have an impression that it is a weak solution of mercuric chloride. Possibly you may find more exact information in Montagu Browne's books on taxidermy.

Removing Paper from Photographs (A. E. B.—29/4).—The only method of removing the paper from the backs of prints mounted in optical contact with glass is to wet the paper thoroughly, and then rub it off with glass-paper at first, and as it gets thinner with the wet finger. Schölzig, of 31, Binfield Road, Clapham, S.W., sells a stripping P.O.P., which is treated as usual and then mounted on the glass, and the paper stripped with warm water; or Eastman's sell a transferrotype bromide paper.]

Water for Boilers (J. Y.—29/25).—Waters containing relatively large quantities of magnesium salts, *i.e.*, "permanently hard" waters, are very apt to cause "priming." All very hard waters are bad for boilers, so, too, are those which contain a lot of nitrites or nitrates. There is no book, so far as we are aware, specially devoted to the "analytical examination of water with a view to steam-making." Waters which exceed 10° or 12° of total hardness should be softened before being used in a boiler, and in all cases a good "boiler compo." should be used.

Tinting Fowls' Plumage (J.W.T.M.—29/15).—To increase the depth and brilliancy of the natural colours, a little ferrous sulphate and sulphuric acid added to the drinking water is good; also dried ferrous sulphate mixed in with the soft food is beneficial. It not only improves the plumage, but is an excellent tonic. Some years back an ingenious German bird-fancier discovered that he could impart almost any tint to the feathers of birds, and even to the yolks of their eggs, by giving them colouring bodies such as "aniline" dyes dissolved in fatty matter. We do not know that this method has been applied to poultry, but it might answer. If you feel disposed to try, use a little oil soluble black B. or nigrosin. We should recommend you to experiment with one bird first.

Proof Spirit (F. A. S.—28/27).—The term "proof spirit" was introduced many years ago to indicate a spirit of such dilution that gunpowder, when moistened with it, refused to ignite. This test for alcoholic strength was employed before more accurate means of determination were known, and a spirit of this strength was adopted by the Excise authorities as a basis upon which duty was levied upon alcoholic fluids. The term "tenuior" was used in the 1885 Pharmacopœia to distinguish proof from the stronger rectified spirit, the word *tenuior* (weaker) being the comparative of the Latin adjective *tenuis* (weak). Proof spirit contains nearly 49 per cent. by weight, or 57 per cent. by measure, of absolute ethylic alcohol. Obviously your calculation is not correct. You have omitted to note that 1 fl. oz. of rectified spirit, B.P., 1885, weighs only 0 838 ounce. 100 fluid ounces therefore weigh 83 8 ounces, and when diluted with 60 fluid ounces of water yield proof spirit. Now 100 fluid ounces of rectified spirit, weighing 83 8 ounces, contain $\frac{83{\cdot}8 \times 84}{100}$ ounces of absolute alcohol. The total weight of proof spirit produced will be $83{\cdot}8 + 60 = 143{\cdot}8$ ounces.

$\therefore$ 143·8 ozs. (by weight) proof spirit contain $\frac{83{\cdot}8 \times 84}{100}$ ozs. absolute alcohol.

$\therefore$ 1 " " " $\frac{83{\cdot}8 \times 84}{143{\cdot}8 \times 100}$ " " "

$\therefore$ 100 " " " $\frac{83{\cdot}8 \times 84 \times 100}{143{\cdot}8 \times 100}$ " " "

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Cocaine Tests. The chromic acid test suggested by Dr. Schaefer (*P. J.*, **62**, 336) is not commended by E. Merck (*Pharm. Zeit.*, **44**, 367), who states that in this test the concentration of the hydrochloric acid employed plays the chief part in determining the precipitation of the chromate. With one and the same sample of cocaine hydrochloride the addition of hydrochloric acid of 10 per cent. will cause a turbidity, but with 7·5 per cent. acid the solution remains clear, whilst another sample will answer the test with 10 per cent. hydrochloric acid, but not with 12·5 per cent. acid, and until the author of the test gives an explanation of these results the value of the test as an indication of the purity of cocaine hydrochloride is, according to Merck, not very clear. It is also stated that Maclagan's test is the best criterion for the purity of cocaine hydrochloride, notwithstanding the opposite opinion which has been advanced by Günther. The solubility of cocaine in water when determined by agitating cocaine for some hours in water at 24° C. and weighing the undissolved alkaloid, was found, as the mean of two experiments, to be 1 : 1340. Extracting the alkaloid dissolved in the water, by agitation with solvents, gave only a portion of the alkaloid to be accounted for, the rest having been converted into benzoyl-ecgonine. The solubility expressed on the alkaloid recovered from the aqueous solution gave a result of 1 : 2590. In manufacturing some many thousand kilogrammes of crude cocaine, Merck states that he has always remarked that the manufacturing operation has only been successful in yielding cocaine of sufficient purity when the final product answers Maclagan's test.

A Simple Volumenometer. C. E. Linebarger describes (*Journ. Am. Chem. Soc.*, **21**, 435) an apparatus for the determination of volume, which is readily constructed out of pieces of apparatus to be found in most laboratories, and is easily manipulated, but at the same time yields accurate results. A wide-mouthed two-ounce bottle is fitted with a rubber or cork stopper perforated with two holes. Through one hole is passed a 10 C.c. pipette, graduated to tenths of a cubic centimetre and permitting of the determination of 1/100 C.c. A funnel tube with a short stem, bearing a mark just below the widened part, is passed through the second hole, the stem end being made flush with the lower surface of the stopper, so that the bottle may be completely filled with liquid without imprisoning any air-bubbles. Finally, a long piece of rubber tubing is attached to the upper end of the stem and provided with a good pinch-cock. In use, the apparatus is filled with liquid to a little above the stopper, great care being taken to remove all air-bubbles, and suction is then applied to the extremity of the rubber tube so as to bring the level of the liquid in the funnel stem to the mark, after which the pinch-cock is closed. The position of the liquid in the pipette is then determined to 1/100 C.c. Next, place in the funnel a weighed amount of the solid under examination, and gently blow the liquid up and down until all the solid is washed into the bottle. The liquid is then once more brought to the mark on the funnel stem and the new position of the meniscus in the pipette read off. It is, of course, advisable to make adjustments and read the levels several times, and take their average. To eliminate inaccuracy from change of temperature, the bottle may be packed in a box with cotton-wool or other non-conducting material.

Compressed Oxygen for Combustions. The use of compressed oxygen in elementary organic analysis is recommended by F. G. Benedict and O. F. Tower (*Journ. Am. Chem. Soc.*, **21**, 390), who find that this modification materially shortens the process in making carbon and hydrogen determinations. The compressed oxygen supplied in steel cylinders is comparatively dry and free from carbon dioxide, so that its purification is easy to accomplish. The carbon dioxide is absorbed by soda-lime in a small U-tube, one such tube sufficing to remove the impurity completely for more than twenty-five combustions. The gas is next passed through a drying apparatus consisting of a cylinder about 12 Cm. high, half filled with concentrated sulphuric acid, through which the oxygen bubbles, thereby indicating the rate of flow. A small U-tube containing pumice stone drenched with sulphuric acid is used to retain any remaining trace of moisture. As the gas enters the combustion tube its flow must be regulated. A rubber tube leading from the cylinder connects with a T-tube, one end of which dips one inch under mercury in a small bottle fitted with a rubber stopper having two holes, the second of which is left open. The other end of the T-tube is connected by a rubber tube to the purifying apparatus, which is in turn connected to the combustion tube by rubber tubing furnished with a pinch-cock. On opening the cylinder valve slightly the oxygen flows out, and, passing through the driers, produces a bubbling in the sulphuric acid cylinder. The pinch-cock is now closed until the desired rate of flow is obtained, any excess of gas escaping through the mercury trap, and the cylinder valve is finally adjusted so as to prevent any appreciable loss of oxygen.

Hydrogen Sulphide Precipitations. A simple apparatus to facilitate hydrogen sulphide precipitations in the copper-arsenic group is described by R. A. Meade (*Journ. Am. Chem. Soc.*, **21**, 421). It consists of an ordinary flask or gas bottle, provided with a closely-fitting two-hole rubber stopper. A piece of glass tubing bent at right angles passes through one hole to the bottom of the flask and serves as an inlet for the gas. It is connected with the hydrogen sulphide generator by half to three-quarters of a yard of light rubber tubing. The short outlet tube passing through the other hole in the cork is twice bent into a loop, so that the solution to be precipitated cannot be thrown out of the flask on violently shaking it after passing in the gas. At the same time, the churning up of the solution with the hydrogen sulphide gas quickly causes the metals of the copper-arsenic group to be thrown out of solution. Not only is the time necessary for complete precipitation shortened, but the sulphides are obtained in a form enabling them to be more easily filtered and washed.

Two New Desmotropo-Santonins. By the action of sulphuric acid diluted with an equal volume of water at 50° to 60° C., A. Andreocci and P. Bertolo have obtained lævogyre desmotropo-santonin $C_{15}H_{18}O_3$, which crystallises in prisms melting at 194° C., and is soluble in alcohol, in acetic acid, and in chloroform. In absolute alcohol it has a specific rotation of $[\alpha]_D$ 28° = —139°. It has the properties of a phenol and a lactone, but does not react as a ketone. Reduced with acetic acid and zinc dust it is converted quantitatively into dextrogyre santonic acid, $C_{15}H_{20}O_3$. The action of ethyl iodide and sodium ethylate produces an ethyl derivative crystallising in large prisms which melt at 82° C., and has a specific rotation of $[\alpha]_D$ 27° = —129°·3, and the character of a phenyl ether and a lactone. Racemic-desmotropo-santonin is obtained by the hydrolysis of racemic acetyl-desmotropo-santonin with potash. It melts at 198° C., and is soluble in ethyl alcohol, acetic acid,

and in chloroform. Reduced with zinc and acetic acid it furnishes quantitatively racemic santonic acid. Its ethyl derivative melts at 106°, and its acetyl derivative at 145° C. The two desmotropo-santonins are of importance, showing the stereo-isomeric nature of the phenol groups of santonin, as well as of two santonic acids corresponding to those phenols.—*Berichte*, through *Ph. Cent.*, **40**, 187,

Chemistry of Neroli Oil.

In the course of an examination of the ethereal oil of orange flowers (*Citrus aurantium amara*, L., *Citrus bigaradia*, Dick), E. and H. Erdmann found that the fraction distilling above 115° under 10 Mm. pressure when saponified with alcoholic potash yielded, among other products, a crystallisable acid having a sweet and acrid taste, and melting at 140° when not fully purified. When this acid was heated with concentrated hydrochloric acid to 200° for one hour, the products obtained were carbonic anhydride and aniline. Consequently, the acid was *o* amidobenzoic acid, and further examination showed that it was identical with anthranilic acid. For ascertaining the form in which anthranilic acid exists in neroli oil advantage was taken of the basic character of the compound for its isolation. By suitable treatment of neroli oil with hydrochloric acid a solid salt was obtained which proved to be the hydrochloride of anthranilic methyl ester. The same compound had been obtained by the authors in course of another investigation some five years ago. The methyl ester of anthranilic acid crystallises in large crystals with numerous facets, melts at 24° 5, boils at 127° under 11 Mm. pressure, the specific gravity is 1·163 at 26°. It is readily soluble in dilute mineral acids, alcohol, ether, and slightly also in water. From the ether solution dry hydrochloric acid gas throws out acicular crystals of the hydrochloride, melting at 178°. The crystals of the ester have a blue fluorescence, becoming more marked when dissolved in ether or oil, and the fluorescence of neroli oil is no doubt due to the presence of this substance. The amount present is small, only two grains of the hydrochloride being obtained from a kilo of the oil, and this circumstance shows that the smell of an oil may be considerably influenced by the presence of only a small amount of substance having a high boiling point. The ethyl ester of anthranilic acid has a much weaker odour than the methyl ester.—*Berichte*, **32**, 1213.

Pyrrol Derivative in Neroli Oil.

The existence of nitrogenous compounds as ingredients of sweet-smelling volatile oils has not hitherto been noticed, and the only nitrogenous compounds found in essential oils were trimethylamine, nitriles (hydrocyanic acid, benzyl-cyanide, the nitrile of phenyl-propionic acid, and mandelic acid). But E. and H. Erdmann have found that the lowest boiling fraction of a certain kind of neroli oil gives a feeble pyrrol reaction. This is most distinct with the pommeranzen oil from unripe fruit produced by Haensel, of Pirna, the vapour of which gives a blue coloration in a firwood splinter moistened with hydrochloric acid. As yet the endeavour to determine the nature of the pyrrol compound has not given definite results.—*Berichte*, **32**, 1217.

Iodine in Sea Water.

In a contribution to the debated question as to the amount of iodine present in sea water, A. Gautier states that in the form of inorganic salts practically no trace exists in the water of the open sea. In the form of organic compounds, however, a considerable amount of iodine is found, amounting in an insoluble condition to 0·52 parts per million, and as dissolved organic iodine 1·8 parts per million, giving a total of organic iodine of 2·32 parts per million.—*Compt. rend.*, **128**, 1079.

COCAINE HYDROCHLORIDE.

BY DR. B. H. PAUL AND A. J. COWNLEY.

The occurrence of several alkaloids besides cocaine in the "crude cocaine" which is used for the preparation of cocaine hydrochloride is now well established. Cocamine or isatropyl cocaine, discovered by Hesse and by Liebermann, benzoyl pseudo-tropine by Giesel, and cinnamyl cocaine by Paul and Cownley (*P.J.* [3], **20**, 166) are all bases naturally present in the total alkaloids obtained from the coca leaf, whilst other bases, such as dextro-cocaine, ethyl-benzoyl-ecgonine, as well as cinnamyl cocaine, have been synthesised respectively by Einhorn and Marquardt, W. Merck and Liebermann. It is quite possible, therefore, that, as in the total alkaloids obtained from many natural products, "crude cocaine," being of complex character, contains alkaloids in addition to those mentioned still to be isolated. The existence of isomeric ethyl-benzoyl-ecgonine (Günther, *P. J.*, **62**, 251) and cocainidine (Schaefer, *P. J.*, **62**, 359) may or may not be subtantiated. The chief point of interest is how far the presence of these or other coca bases is likely to affect Maclagan's well-known test for the purity of cocaine hydrochloride. It has been already stated by us (*P.J.*, **60**, 586) that a sample of cocaine hydrochloride that does not answer Maclagan's test is not suitable for medicinal purposes, and to this opinion we still adhere notwithstanding the assertion of Günther, who erroneously maintains that the crystalline precipitate separating in Maclagan's test is not cocaine but may be isomeric ethyl-benzoyl-ecgonine.

Normal ethyl-benzoyl-ecgonine, $C_{16}H_{18}(C_2H_5)NO_4$, is already known, although it has not been found to exist naturally in crude cocaine. Its synthesis was first effected by W. Merck in 1885 (*P.J.* [3], **16**, 543), who obtained it by the interaction of ethyl iodide and benzoyl-ecgonine at the same time that he was successful in synthesising methyl-benzoyl-ecgonine, $C_{16}H_{18}(CH_3)NO_4$, or cocaine by the interaction of methyl iodide and benzoyl-ecgonine. F. G. Novy, who further studied ethyl-benzoyl-ecgonine (*P.J.* [3], **18**, 233)—or, as Ladenburg designated it, cocethyline—described it as a base crystallising from alcohol in large monoclinic prisms like cocaine. It melts at 107-108° C., and yields readily crystallisable salts, which are precipitated by alkalies and alkaline carbonates, being soluble in excess of the precipitant. The alkaloid is said to possess the same physiological properties as cocaine. The only distinguishing feature between Merck's synthetic base and Günther's isomeride is the melting point, the latter being said to melt at 111° C. The difference of 3° between the melting points of the two bases cannot be held as a very great distinction, as a very small amount of impurity would cause the variation. Moreover, the determination of the melting point of an alkaloid is quite a matter of personal observation and opinion when the point of fusion is to be noted, apart from the inherent difficulties of the determination of the melting point of the alkaloids. Assuming Günther's observation of the existence of this isomeride to be correct, its most important property is the claim of its being less soluble in water than cocaine. In other words, it is suggested that the crystalline precipitate obtained in Maclagan's test cannot be cocaine, but may be the isomeride of ethyl-benzoyl-ecgonine. The only reasons adduced for this assumption are that cocaine is stated to have a solubility in water of 1:704, the isomeride 1:2500-3000, whilst Maclagan's test necessitates a solubility of 1:980.

It may be as well to state at once that we have never met with this isomeride of ethyl-benzoyl-ecgonine in a sample of commercial cocaine hydrochloride that answers Maclagan's test. Moreover, the statement that the fact of synthetically prepared cocaine answering to Maclagan's test is merely due to this isomeride cannot

in our experience be substantiated. In order to test this statement cocaine hydrochloride which had been prepared from the synthetic base was submitted to Maclagan's test, and the base, which readily separated on stirring in a crystalline form, was collected and dried. Its melting point, when taken in Roth's apparatus, had the melting point of pure cocaine similarly taken, namely, 97° C. It was evidently not isomeric ethyl-benzoyl-ecgonine, but pure cocaine.

It may be advisable to direct attention to the various statements made as to the solubility of cocaine in water, on which Maclagan's test solely depends. Maclagan's original test of 1 grain of cocaine hydrochloride in 2 fluid ounces of water, or 0 8925 grain of cocaine alkaloid in 875 grains of water, gives a proportion of base to water of 1:980. It has previously been stated (B. H. Paul, [3], **16**, 325) that the solubility of cocaine is less than 1:1300, so far as it is possible to determine the solubility of a base which gradually undergoes decomposition into benzoyl-ecgonine when in contact with water, especially in presence of free alkali. Its solubility in water cannot be ascertained by the usual methods adopted for such determinations. It is quite impossible, for instance, to obtain correct results by agitating the base for a definite time with water and determining either the soluble or the insoluble portion ; or even by precipitating the base in a definite quantity of water and noting the limit of precipitation without regard to the essential factor in Maclagan's test, namely, rapid stirring of the solution, for the precipitation of a dilute solution of cocaine by ammonia is much analogous to the precipitation of a dilute solution of a magnesium salt with di-sodic phosphate. That this view is correct is confirmed by the results obtained by E. Merck (*Pharm. Zeit.*, **44**, 367), who determined the solubility of cocaine in water at 24° C. by frequent agitation of finely divided cocaine with water for from 3 to 5 hours. The co-efficient of solubility based on the difference between the amount of alkaloid taken and that left undissolved was 1:1340, whereas the co-efficient arrived at from the alkaloid extracted by ether and chloroform from the aqueous liquid was 1:2590, the higher figure being due to the loss of alkaloid by decomposition into benzoyl-ecgonine.

In order, therefore, to ascertain the true value as to the solubility of cocaine in water, due regard must be had to the conditions of the test for which the co-efficient of solubility is to be applied. The correct solubility of cocaine in the liquid as prescribed in Maclagan's method of testing is best ascertained by following the method as near as possible in a practical operation. That is to say, the cocaine salt should be dissolved in water, one or two drops of 960 ammonia solution added, and the liquid rapidly stirred for some minutes until no further separation of crystals occurs. Operating in this manner the following results were obtained.

Pure cocaine hydrochloride prepared from the synthetic base, which gave a melting point of 97° in a Roth's apparatus, was employed, and the solubility determined at 15·5° C.

Cocaine HCl. taken. Gramme.		Cocaine. Gramme.	
0·0112	=	0 01 in 13 cubic centimetres of water including AmHo (1 drop of 960), and well stirred, gave a crystalline precipitate in five minutes.	Base. 1 : Water. 1300
0·0112	=	0 01 in 14 C.c. total liquid just showed a precipitate, after well stirring, in 14 minutes.	Base. 1 : Water. 1400
0·0112	=	0·01 in 15 C.c. total liquid gave no precipitate after long stirring with a glass rod.	Base. 1 : Water. 1500.

Similar results were obtained with 1 grain or 0·0648 gramme cocaine hydrochloride, equal to 0 0578 gramme cocaine, as in Maclagan's test in a dilution of 80·9 C.c. (1:1400) and 86·7 C.c. (1:1500) respectively.

The solubility of pure cocaine in water when operating as directed in Maclagan's test is therefore about 1 : 1500 at 15°·5 C. It is well to emphasise this point, as it is the essence of Maclagan's test, and its accurate determination negatives the disparagement that is attempted to be made as to the value to be attached to the only test at present, in our opinion, of any value for the determination of the purity of cocaine hydrochloride.

NOTES ON SOME OFFICIAL PREPARATIONS.

BY E. W. LUCAS.

Extractum Pareiræ Liquidum.

Under the heading of "Pareira Root" the British Pharmacopœia of 1898 describes a drug which has not come into commerce for a number of years. All the recent parcels have either been mixtures of true and false, or have consisted entirely of the false pareira.

The differences between the true and false varieties have been pointed out by Holmes, Ringer and Brooke (*P. J.*, [3], **22**), and others. False pareira is less dense, scarcely waxy to the cut, while the vessels in the wood are large enough to be readily seen by the naked eye. It is altogether poorer than true pareira, only yielding about 8 per cent. extract instead of 16 or 17 per cent.

Two preparations of pareira were official in the 1885 Pharmacopœia—a solid extract obtained by exhausting the root with boiling water, and a liquid extract which was supposed to contain 25 per cent. of the solid extract. As the solid extract was rarely, if ever, prescribed, it was very properly omitted from the 1898 Pharmacopœia, but the liquid preparation was retained. The process for its manufacture consists in exhausting the root by percolation with boiling water, evaporating until it contains 33 per cent. of extractive, and then mixing with 25 per cent. of rectified spirit. The product is directed to be clarified by filtration or otherwise.

This process is unsatisfactory for several reasons. In the first place it yields a sludge which is very difficult to filter, and when filtered it cannot be kept for any length of time without depositing. Secondly, the filtered liquid extract never does contain anything like 25 per cent. of extractive.

The author has examined liquid extracts obtained from six different sources, three from firms manufacturing on a wholesale scale, and three from firms who only make for their own consumption. The results are tabulated below :—

	Sp. Gr.	Extractive of a firm consistency	Alcohol reckoned as Rectified Spirit.
1	1026	18 per cent.	18·8 per cent.
2	1006	16 ,,	19·5 ,,
3	1045	24 ,,	18.6 ,,
4	1010	18 ,,	19·9 ,,
5	1028	17 ,,	17·0 ,,
6	1030	19 ,,	19·4 ,,

The foregoing samples with one exception (No. 3) were all bright when first obtained, but all began to deposit after keeping for some time. When added to distilled water in the proportion of one to seven, four of them yielded comparatively clear mixtures, while two became turbid, and, as will be imagined, the general appearance was in no two cases similar.

The discrepancies noticed in these samples are partly due to differences in quality of drug operated upon, partly to the imperfect method of assay, and to variation in the amount of solid matter removed by filtration. A much more uniform product might have been obtained by directing evaporation to be continued until the extractive ceased to lose weight instead of to firm consistency, which may mean almost anything. The author therefore proposes, instead of the official somewhat clumsy process, a liquid extract of definite specific gravity, prepared by "pressure maceration." The specific gravity may be conveniently fixed at 1·020, a pound of commercial pareira yielding *about* half-a-pint of liquid extract.

PREPARATION.

Pareira root in No. 10 powder	1 lb.
Alcohol, 20 p.c.	A sufficiency.

Moisten the pareira with 10 fl. ozs. of the alcohol and macerate in a covered vessel for twelve hours. Press strongly, and reserve the expressed liquid.

Macerate again with 4 fl. ozs. of the alcohol for four hours and press as before.

Repeat with a further 4 ozs. of alcohol, mix the expressed liquids, and stand for twenty-four hours. Filter, and, if necessary, add sufficient 20 p.c. alcohol to bring the product to the specific gravity of 1·020.

EXPERIMENT.

One pound of pareira (chiefly "false") treated as above yielded as follows :—

1st pressing	5 fl. ozs.	Sp. gr. 1·030
2nd ,, ...	3 ,,	,, 1·026
3rd ,, ...	4 ,,	,, 1·020

After mixing, standing for twenty-four hours, and filtering, the liquid extract measured 11½ fl. ozs., and had a specific gravity of 1·025.

Succeeding experiments with different samples of pareira gave practically identical results, the density of the mixed liquors never falling below 1·020. Operating on larger quantities and using a hydraulic press the results are somewhat higher. It may be added that a liquid extract prepared as above filters without difficulty, and keeps bright for any reasonable time.

Syrupus Rhei.

Exception is taken to the method of preparation of this syrup—firstly, on the ground of wastefulness, as with the quantities generally prepared it is not convenient to recover the alcohol from the percolate; secondly, much of the aroma of the coriander is lost during evaporation.

The attempt to prepare a liquor by "pressure maceration" with cold water was unsuccessful, the yield being of poor aroma and low gravity (about 1·022). After several experiments the following process was adopted :—

Take of—

Rhubarb root, cut small	2 ozs.
Boiling distilled water.....	15 ozs.

Macerate for twelve hours, strain, press, and filter on to

Refined sugar	24 ozs.

Dissolve by gentle heat and add

Oil of coriander	5 minims.
Rectified spirit	1 fl. drachm.

Finally adjust the specific gravity by the addition of water to 1·315. Product about 2 lbs. 10 ozs.

EXPERIMENT.

Operating on the above quantities and using sound and dense rhubarb root, 14 fl. ozs. of liquor of very good colour and aroma was obtained, which filtered rapidly through paper. The filtrate had a specific gravity of 1·038, and finished syrup before adjustment, 1·319 at 60° F.

Syrupus Pruni Virginianæ.

The percolation of Virginian prune bark is found by experience to be very tedious, and in hot weather the percolate is liable to deposit and lose aroma before the process is completed.

The following is recommended in its place :—

Take of—

Virginian prune bark, in 20 powder.....	6 ozs.
Distilled water	14 fl. ozs.

Macerate for twelve hours, press strongly, and reserve the expressed liquid.

Add 8 fl. ozs. more water, macerate for four hours, and press as before. Mix the expressed liquids, and filter on to

Refined sugar	30 ozs.
Glycerin..	2½ fl. ozs.

Dissolve without heat and add sufficient distilled water to produce two pints.

This yields a syrup of very fine colour and flavour, while the whole process is easily completed in forty-eight hours.

EXPERIMENT.

Operating on the above quantities the following figures were obtained :—

1st pressing yielded 10½ fl. ozs., sp. gr. 1·020.
2nd ,, ,, 8 ,, ,, 1·008.

The mixed and filtered liquid measured 18 fl. ozs., sp. gr. 1·014. The syrup, after adjustment, had sp. gr. 1·300.

MEDICINAL PLANT NAMES, THEIR ORIGIN AND MEANING.

BY F. RANSOM.

(*Concluded from page 491.*)

ORCHIDACEÆ.

Vanilla.—From the Spanish name *vainilla*, the diminutive of *vaina*, a pod, sheath, or scabbard. The shape of the fruit suggests the name. *V. planifolia*, Andrews. Latin, flat leaved. The thick dark green leaf has a smooth flat surface.

CANNACEÆ.

Maranta—In honour of Bartolommeo Maranti, a Venetian physician and author of medical works, who lived in the sixteenth century. *M. arundinacea*, Linn. Latin, *arundo*, a reed or cane. This herbaceous perennial has a reed-like stem 5 or 6 feet in height. It is the source of the starch known as arrowroot. The origin of the word arrowroot is generally attributed to its supposed virtues as an application to the wounds produced by the poisoned arrows of the American Indians. Other writers regard it as derived from the Indian word *aru*, meaning flour. The latter would appear the more likely derivation.

Canna.—Greek, *κάννα* (kanna), a reed. *C. edulis*, Ker. Latin, edible. This and probably other species of the genus are cultivated for the production of starch.

PALMÆ.

Areca.—The native name for the tree in the Malabar district. *A. catechu*, Linn. An astringent extract is obtained from areca nuts similar to that prepared from *Acacia catechu*, Willd. (*vide ante*).

Arenga.—Aven and Aren are native names for the tree of Java of which island it is a native. *A. saccharifera*, Labill Latin, sugar-bearing. It is one of the chief sources of palm sugar. The starch obtained from the interior of the stem is a variety of sago.

Metroxylon.—Greek, *μήτρα* (metra), pith; *ξύλον* (xylon), wood. The following species is the chief source of sago, which obtained from the centre of the stem. *M. sagu*, Rottb. The Malay name for sago; it is apparently derived from the same word in Papuan, meaning bread.

Calamus.—Latin, a reed or cane. The stems of various species form the rattan canes of commerce. *C. draco*, Willd. Latin, a dragon. The red inspissated juice of this palm is one of the sources of the dragon's-blood of commerce.

ARACEÆ.

Acorus.—The name used by Dioscorides to designate the following species. It is usually attributed to the Greek *ἀ*, without; *κόρη*, kore, the pupil of the eye; from its supposed virtues in affections of the eye. *A. calamus*, Linn. Latin, a reed, from its reed-like stem and leaves. It is called sweet flag from its aromatic odour.

LILIACEÆ.

Allium.—The Latin for garlic. It is usually supposed to be derived from the Celtic word *all*, hot or burning, on account of its pungent taste. *A. sativum*, Linn. Latin, cultivated. Garlic has been in cultivation from very early times. Garlic is the Anglo-Saxon *gârlèc*; from *gâr*, a lance, referring to the spear-shaped leaves, and *leâc*, a pot herb.

Urginia.—From Ben Urgin, an Arab tribe in Algeria, where the plant is abundant. *U. scilla*, Steinheil. The Greek name for the plant was *σκίλλα* (scilla); it was probably derived from the Arabic synonym, *ásgyl*. The Linnæan name for the plant, *Scilla maritima*, indicates that it is found more frequently on the sea coast.

Aloe.—Αλόη (aloe) was the Greek name for the plants. It is probably derived from the Arabic equivalent, *álloèh*, or the Syriac *alwai*. *A. vera*, Linn. The common aloes of northern Africa and Spain.—*Aloe vulgaris*, Lam., is a synonym.—*A. succotrina*, Lam. This species is a native of Socotra, an island off the east coast of Africa, and about 200 miles to the south of Arabia.—*A. perryi*, Baker. Lieut. Wykenham Perry first brought specimens of this plant to Kew. *A. spicata*, Linn. Latin, pointed. This may refer to the inflorescence, which is spicate, or to the leaves, which are sharply pointed.—*A. chinensis*, Hort. A native of China, now cultivated in the West Indies.—*A. ferox*, H. K. Latin, savage. The surface of the leaf is characterised by scattered spines, giving the plant an uninviting appearance. The aloes or Lignum aloes of the Bible has no connection with plants of this genus, being a resinous wood, valued for its aromatic properties. Several species of agave, cultivated in the south of Europe, are commonly called aloes. The agave is distinguished from the aloe by its inferior ovary.

Veratrum.—The classical name for one or more species. It is usually supposed to be derived from the Latin *vere*, truly, and *ater*, black, referring to the dark colour of the roots. The Veratra are often called Hellebores, a name which should be confined to the genus and ellborus.—*V. album*, Linn. Latin, white. The perianth is whitish within but greenish without.—*V. viride*, Solunder. The perianth is greenish in colour, the base being rather darker than in the previous species.

Schœnocaulon.—Greek, *σχοίνος* (schoinos), a rush; *καυλός* (kaulos), a stem. The naked flower stalk resembles in appearance the stem of a rush. *Asagræa*, the name adopted by Lindley for this genus, was intended to commemorate Professor Asa Gray, the distinguished American, botanist of Harvard University. *S. officinale*, A. Gray. Latin, officinal. Cevadilla is the Mexican name for the plant.

Colchicum.—Greek, *κολχικόν* (colchicon), the name for the following, or an allied species, which was found in Colchis, a province in Asia, east of the Black Sea. *C. autumnale*, Linn. The plant blossoms in the autumn. It is popularly called the meadow saffron. The flower is similar to saffron in general appearance, but differs from it by having six stamens instead of three.

SMILACEÆ.

Smilax.—The Greek name used by Dioscorides. It is probably derived from the Greek *σμίλη* (smile), a knife for carving or engraving. The common species in Southern Europe is *S. aspera*, the stem of which is rough, with sharp prickles. *S. ornata* Lemaire. Latin, adorned, equipped. The leaves are beautifully variegated, with silvery grey spots on dark green ground. The plant is provided with short prickles. Sarsaparilla is a compound of the two Spanish words *zarza*, a bramble, and *parilla*, the diminutive of *parra*, a vine. This species is the source of Jamaica sarsaparilla, so-called because it was formerly shipped by way of that island from Central America.—*S. medica*, Schlecht. Latin, curative; from its supposed medicinal properties. It is the source of Mexican sarsaparilla.

GRAMINEÆ.

Oryza.—The Greek word *ὄρυζα* derived from the Arabic *êruz*, rice. The modern synonyms rice, riz, reis, etc., have doubtless the same origin. *O. sativa*, Linn. Latin, cultivated. Rice has been in constant cultivation from remote antiquity.

Avena.—Latin for oats. The derivation is obscure, but it is believed to be of celtic origin and may be from the word *aten* (from etan, to eat), the source also of oat. *A. sativa*, Linn Latin, cultivated. The earliest record of the cultivation of oats is by Pliny, who states that it was grown in Central Europe.

Hordeum.—The ancient Latin name for barley. Its origin is unknown. *H. distichon*, Linn. From the Greek *δίς* (dis), double; *στίχος* (stichos), a row. The grains of barley are arranged in two rows on opposite sides of the flattened rachis.

Triticum.—Latin for wheat. It is probably derived from Latin *tero*, to rub, indicating the practice of grinding the grain. *T. sativum*, Lam. Latin, cultivated. Wheat is unknown as a wild plant, and its cultivation is as ancient as the history of man. —*T. repens*, Linn. Latin, creeping. The common couch-grass is characterised by a creeping rootstock, enabling it to spread rapidly over a large area, and thus making it one of the most troublesome of weeds.

Zea.—Greek, *ζειά* (zeia), an undetermined species ef grain used as fodder for horses. It is derived from *ζάω* (zao), to live, to be strong, denoting the nutritive property of the grain. *Z. mays*, Linn. A native American name for Indian corn.

Andropogon.—Greek, *ἀνήρ* (aner), a man; *πώγων* (pogon), a beard. The grass has tufts of hair resembling a beard below the spikelets. *A. nardus*, Linn. The Greek word, *νάρδος* (nardos) referred to certain plants yielding an aromatic oil, of which lemon grass was probably one. The names lemon-grass and citronella indicate the resemblance of this oil to that of lemon, both of which contain citral.

Saccharum.—This and the various synonyms for sugar probably have their origin in the Arabic *soukar*, the derivation of which is not known. *S. officinarum*, Linn. Latin, officinal, useful. The source of cane sugar.

LYCOPODIACEÆ.

Lycopodium.—Greek, *λύκος* (lukos), a wolf; *πούς* (pous), a foot. The leafy shoots bear some resemblance in shape to the foot of a wolf. Stagshorn and club-moss are common names also intended to indicate points of similarity. *L. clavatum*, Linn. Latin, *clava* a club. The short branches or shoots are club-shaped.

FILICES.

Aspidium.—Greek, *ἀσπις* (aspis), a round shield; in allusion to the form of the indusium. *A. filix-mas*, Swartz. Latin, *filix*, a fern; *mas*, a male. Male fern is a mediæval name for the species.

LICHENES.

Rocella.—An old Italian name for Dyer's weed. It is probably derived from *rocca*, a rock ; these lichens growing on rocks of the sea-shore. *R. tinctoria*, DC. Latin, *tingo*, to dye. The blue pigment, litmus, is prepared from this and other species.

Cetraria.—Latin, cetra, a short Spanish shield or buckler, in allusion to the shape of the apothecia. *C. islandica*, Ach. Iceland moss, the common name for the plant, would appear to imply that that island is the chief source of the drug but although found there, as in many parts, it is only collected for exportation in Sweden, whence we obtain our supply. It is not a moss, but a true lichen.

FUNGI.

Claviceps.—Latin, *clavus*, a nail or peg ; *caput*, a head. The name refers to the capitate form of the perfect fungus, not to ergot as it appears in commerce. *C. purpurea*, Tulasne. The colour of ergot is purple brown. Ergot is the French name for the drug, the actual meaning being a spur, as applied to birds, etc. Secale cornutum, a common name for the drug, means the "porned rye."

ALGÆ.

Fucus.—The Greek word Φύκος (phukos) was applied generally to seaweeds. *F. vesiculosus*, Linn. Latin, *vesicula*, a blister or vesicle. This refers to the air-vesicles, which are found in the substance of the frond. The common name, bladder wrack, has the same significance.

Chondrus.—Greek, χόνδρος (chondros), cartilage. This seaweed when boiled in water forms a gelatinous substance somewhat resembling that obtained from animal cartilage. *C. crispus*, Lyngbye. Latin, curled, waving ; referring to the uneven surface of the frond. It is collected largely on the west coast of Ireland, and is commonly known as Irish moss.

BACTERIOLOGICAL NOTES.

SERUM THERAPY seems to make slow progress, except with regard to diphtheria, tetanus, and perhaps pneumonia and septicæmia. In neither tuberculosis, plague, nor enteric fever has any reliable antitoxin been yet obtained. After four years' work at tuberculosis, Trudeau and Baldwin state that in only one instance did a serum prepared by them exhibit any antitoxic power. Killed cultures were injected into sheep, chickens were inoculated with mammalian tubercle, sheep were dosed with tuberculin or inoculated with non-virulent cultures, asses were similarly treated, and rabbits were inoculated with non-virulent and virulent cultures of tubercle bacilli, but in none of these ways was a really reliable antitoxin obtained (*Amer. Journ. of the Med. Sciences*, December, 1898, and January, 1899). As regards plague, the results claimed by Yersin for his serum have been questioned by British observers, and Symmers concludes, from a number of experiments, that the strength of plague sera as at present prepared is not sufficiently great to warrant any hope of their being of therapeutic use in an actual epidemic.—*Centr. f. Bak.*, Abt. I., B. **25**, p. 460.

OUTBREAKS OF A PECULIAR EPIDEMIC DISEASE among dogs have been reported from several places—Bristol, Bournemouth, Norwich, also Germany—and have been ascribed by some to influenza. The symptoms are loss of appetite and lassitude, vomiting, followed often by a paralytic condition of the hind-quarters. Post mortem, the intestine is found to be intensely inflamed, which fact has given rise to a suspicion of irritant poisoning. Professor Klett, of Stuttgart, has had a number of cases under his observation, and concludes that the condition is due to an acute infective disease which has hitherto not been seen.—Abstr. in *Journ. Comp. Path. and Therapeut.*, **12**, No. 1., p. 36.

AT THE ROYAL SOCIETY SOIRÉE, on May 3, Surgeon-Major Ross exhibited an extremely interesting and complete series of microscopical specimens illustrating the development of a malaria-like parasite (*Proteosoma Grasii*) of birds in the mosquito. The probable dissemination of malaria by mosquitoes has rendered it desirable that this group of insects should be thoroughly worked out, and collections are invited by the Director of the British Museum (Natural History), Cromwell Road, London, S.W., from whom a pamphlet can be obtained giving particulars of the method of collection and transmission.

THE THERMAL DEATH POINT of the tubercle bacillus is variously given by different authorities, and peculiarly irregular results were obtained by the Royal Commission on Tuberculosis. Theobald Smith has re-investigated the subject (*Journ. of Experimental Med.*, 4, No. 2, p. 217) and finds that tubercle bacilli when suspended in distilled water, normal salt solution, bouillon and milk are destroyed at 60° C. in fifteen to twenty minutes, the larger number being destroyed in five to ten minutes. When the suspension is in milk, however, the pellicle which forms during the exposure at 60° C. may contain living bacilli after sixty minutes, and it is this fact which has given rise to the irregular results obtained by previous investigators.

THE IMPORTANCE OF SEEMINGLY SMALL DETAILS is not sufficiently appreciated by most microscopists. For example, no condenser can be adjusted to give a perfect cone with more than one definite thickness of glass slide. Tatham relates that using a very perfect apochromatic condenser he was unable to obtain good results and resolution of a test object with a slide of 1/30th inch thickness, but using a slide of double the thickness resolution was perfect with the same lens.—*Journ. Quekett Micro. Club*, **7**, No. 44, p. 187.

A MODIFICATION OF NEISSER'S DIAGNOSTIC STAIN for the diphtheria bacillus is given by Coles and Tanner, and they state that it gives more certain results and also deeper staining. The method is to stain the preparations with the Neisser methylene blue solution for about half a minute, wash, treat with Gram's iodine solution for half a minute, wash, stain with the Neisser vesuvin solution for half a minute, wash, dry, and mount.—*Brit. Med. Journ.*, 1899, I., p. 1213.

SOME FURTHER OBSERVATIONS have been made by Martin concerning the relation of the toxin and antitoxin of snake venom. He considers that the antitoxins are bodies of great molecular size comparable to proteids, and that the venom is absorbed ten to twenty times as rapidly as the active principle of anti-venin. Starling has shown that the walls of the capillaries of the limbs are relatively although not absolutely impermeable to proteids. Hence intravenous injection of the anti-toxin is indicated, or, in the case of tetanus, direct injection into the affected nerve centres. About the same quantity of anti-venin necessary to neutralise the venom *in vitro* is capable of doing so when the former is injected into the blood-stream and the latter subcutaneously. At least ten to twenty times this quantity is required when they are both placed simultaneously under the skin but in different parts of the body.—*Proc. Roy. Soc.*, **64**, p. 88.

PHARMACEUTICAL SOCIETY.

MEETING OF THE COUNCIL.

WEDNESDAY, JUNE 7, 1899.

Messrs. Allen, Atkins, Bateson, Carteighe, Corder, Cross, Glyn-Jones, Grose, Harrington, Harrison, Hills, Johnston, Martindale, Newsholme, Park, Savory, Southall, Storrar, Symes, Warren, and Young were present, and the chair was taken by Mr. Walter Hills.

The CHAIRMAN said, before the Secretary read the minutes of the last Council meeting, he would like, in the name of the Council, to welcome Mr. Glyn-Jones. He was so well known to the members, either personally or by repute, that it was unnecessary for him to offer himself as his introducer, therefore he would content himself with welcoming Mr. Glyn-Jones as a member of the Council of that Society.

Mr. GLYN-JONES, in thanking the President and Council for their kind welcome, said he trusted that when his term of office was over, however long or short it might be, he would leave the Council having earned at any rate the respect and good wishes of its members. If it were not out of place he would like to say that, whilst he did not ask them for a moment to think that he was not glad to have secured a seat on the Council, he did ask them to accept the fact that he did so with regret at having obtained his seat at the expense of any former member of the Council, more particularly of the gentleman who had just left the Council.

The minutes of the previous Council meeting and the special meeting of May 17 were read and confirmed.

Letters of Thanks.

The CHAIRMAN said letters of thanks had been received from Mr. Ekin and Dr. Inglis Clark for their appointment as representatives of the Society at the meeting of the Pharmacopœia Conference convened by the General Medical Council; from Mr. Lucas for his appointment to conduct the Jacob Bell and Manchester Scholarship Examinations; from Mr. Garsed for his appointment as Burroughs' Scholar; Mr. P. Boa for his appointment as an Examiner; and from the Edinburgh Chemists', Assistants', and Apprentices' Association for another session's use of the premises in York Place, Edinburgh.

Election of President.

The ballot having been taken in the usual way, Mr. William Martindale was unanimously elected President.

Mr. MARTINDALE, in thanking the Council for the honour they had done him, said he followed in the steps of several very illustrious predecessors; there had been two Hills, Carteighe, Greenish, Williams, Sandford, and others whom he need not mention. He had been for ten years on the Board of Examiners and a like period on the Council, so that he thought he ought to know the work of the Society. It had been a hobby of his to pay attention not only to pharmacy, but also pharmaceutical politics, for a considerable period of his life. Within a few years he should enter his sixtieth year, and although one did not grow younger he felt a growing capacity for work, and would try to do the best he could, and he trusted to have the forbearance of his two immediate predecessors who sat on his right hand. The duties of the coming year would be exceedingly onerous, but he trusted with the aid of their able Secretary to be able to get through the work.

Election of Vice-President.

On a ballot being taken, Mr. Newsholme was elected Vice-President.

Mr. NEWSHOLME, in thanking the Council for the further honour conferred upon him, said it had been his good fortune to work for two years with Mr. Hills as President, and he looked forward with equal pleasure to working with the President who had just been elected. He could assure him that he would support him in his work to the best of his ability.

Election of Treasurer.

On a further ballot being taken, Mr. Samuel Atkins was elected Treasurer.

Mr. ATKINS said he appreciated very highly the honour conferred upon him and still more valued the confidence reposed in him by his colleagues. He followed in the steps of a very distinguished list of men. Glancing down that list he had to confess that he had known every gentleman who had served the office of Treasurer. No doubt this was a confession of antiquity. His old friend Mr. Robert Hampson, who was Treasurer for nearly nine years, was a very true and warm friend of his. It would be very bad taste at that time to make any lengthened remarks, but he should like to say that every position of privilege and honour in this world brought responsibility, and every man ought to try and be conscious of the fact that with privilege came responsibility. That chamber was practically a House of Commons. He (Mr. Atkins) was for the time being their Chancellor of Exchequer, but he had to honour the votes of that House; the Council was the spending authority, and he trusted that he might be permitted to see a balance on the right side at the end of the year.

Thanks to the Retiring President.

The VICE-PRESIDENT said he should like, before any further business was proceeded with, to move:—

> That the cordial thanks of the Council be given to Mr. Walter Hills for the able manner in which he has filled the office of President of the Society for the last three years.

It required no words of his to commend this resolution to his hearers, for they all appreciated the admirable manner in which he had filled the office, but as Vice-President for the past two years he could speak more fully than any other member, having been more closely associated with him. At all times, both by day and night he might say, Mr. Hills had shown that he had the interests of the Society at heart. He did not know what had become of his own business, but he had certainly appeared to be always attending to the business of the Society. They were glad to know that that work had met with a considerable reward. During his term of office the Council had been successful in passing an Act of Parliament for the first time since 1868, and though he did not say that the whole credit was due to Mr. Hills—because the way had been prepared in great measure by his distinguished predecessor, Mr. Carteighe—still they were all glad that the Act had been passed during his term of office, and it would be looked upon as some reward for his services. Another matter which had been accomplished was the adoption of the Poisons Regulations. Members of Council had felt for a long time that not having adopted such regulations as were referred to in the Act of 1868 was a stumbling-block to the progress of the Society, and he felt confident that in the future great benefit would be found to result. He need not refer to other matters, such as the rejection of the Poisonous Substances Bill, which would have had a very damaging effect on the craft, and would also have been injurious to the public, and he would simply move the resolution he had read.

Mr. ATKINS said he heartily seconded the proposition, which would have been done by Mr. Carteighe, only unfortunately he had lost his voice. He counted it a great privilege that Mr. Hills had long

been a personal friend, but that was not the point to which he wished to direct attention. Mr. Hills' three years of office had been marked by distinct successes. He had brought to the discharge of his duty splendid health and the most unswerving devotion, and his efforts had been crowned with an unusual amount of success. He came to his post with the immense advantage of a name to conjure with, both his own and that of the historic house with which he was connected; but he also possessed a striking individuality of his own, a calm, quiet, honourable sense of fair play, which in a public man was invaluable. He retired into comparatively private life—for he hoped they would still have him amongst them for many years—with the feeling that he had the respect and esteem not only of that Council, but of the whole of their constituents throughout the country.

The PRESIDENT, in putting the resolution, desired to add his testimony to the able and graceful manner in which Mr. Hills had always conducted the business.

The resolution having been carried unanimously,

Mr. WALTER HILLS, in returning thanks, said he need not say that he was extremely gratified to hear the kind words which the Vice-President and the Treasurer had used in speaking of the work he had done during the last three years, and also for the cordial way in which their remarks had been received by the Council. He could only say that he had tried to do his duty, and in doing so, and looking at things from every point of view, and giving everybody a hearing, he had been aided to a very large extent by the kind consideration of his colleagues and the confidence they had reposed in him. Three years ago he asked for that confidence, and his colleagues had given it to him most ungrudgingly, for which he thanked them. He wished also to thank all those who had assisted him in carrying out his duties—the members of the Board of Examiners in England, Wales, and Scotland; the members whom he had seen and with whom he had had the pleasure of corresponding during the last three years; he wished also to thank the permanent staff, Mr. Bremridge and his very excellent assistants; and last, but not least, he wished to thank the representatives of the press for their personal courtesy towards him. If he had been able to do anything advantageous for the Society, he had been well rewarded.

Standing Orders.

The Standing Orders of the Council were re-enacted for the ensuing year.

Re-appointment of Officers.

Mr. Richard Bremridge was re-appointed Secretary and Registrar for the ensuing year; Dr. B. H. Paul was re-appointed Editor, and Mr. John Humphrey Sub-Editor, of the Journal; Mr. E. M. Holmes was re-appointed Curator of the Society's Museum, and Mr. J. Rutherford Hill was re-appointed Assistant Secretary in Scotland.

Election of Members.

The following persons, having tendered their subscriptions for the current year, were elected "Members" of the Society:—

Allez, Peter Arnold; Guernsey
Aram, Charles Baxter; Wellingore
Bailes, Arthur Thomas; Harrogate
Bamford, Harry; Demerara
Barlow, Ernest Silas; Oldham
Bentley, Lumley Seurr; Earls Court
Betts, Harold George; Smethwick
Blore, Moulton; Manchester
Clark, Adam Douglas; Galashiels
Clarke, Arthur Bertram; Coventry
Coombe, Frank E.; Sutton-in-Ashfield
Dinwoodie, James H.; Johannesburg
Dupuy, Arthur Edgar; Guernsey
Edwards, John G.; Finsbury Park
Emsley, Robert Burns; Southport
Ferriday, Edwin J. P.; Birmingham
Ferry, Robert Bailey; West Hartlepool
Fletcher, Charles Senior; Wakefield
Fraser, John; Helensburgh
Goodman, Thomas; Banbury
Gray, William; Birmingham
Harbottle, B.; Newcastle-on-Tyne.
Harrison, Thomas Blair; Sunderland.
Harvey, Frederick; Surbiton.
Hetherington, John; Moffat.
Hewitt, Strafford Smith; Cape Town.
Hogwood, Haley Percival; Rotherhithe
Holt, William; Atherton
Hutchings, Thomas; Pau, France
Jackson, Charles Henry; Sunderland
Jesser, Alfred Henry; Penge
Jones, Thomas W.; St. Leonard's-on-Sea
Jones, William Britain; Cinderford
Jones, William Shepherd; Kensal Rise
King, Alexander William; Mandalay
Lee, Arthur; Torquay
Lee, Richard Baxter; Litherland
Lewis, Rees M.; South Lambeth
Lloyd, Richard Edward; Paris
Murray, William; Middlesbrough
Osborne, William Harrison; Chiswick
Pagan, Thomas; Leeds
Passmore, Arthur B.; Tulse Hill
Roy, Louis Leslie; Chester
Sharp, Charles Armstrong; Darlington
Smith, William Henry H.; Cirencester
Snow, Arthur Legge; Bath
Taylor, Edward; Muswell Hill
Thomas, Herbert Charles; Clapham
Thompson, George P.; Nottingham
Turner, George; Biggleswade
Walker, David; Lockerbie
Wallace, William; Glasgow
Wharram, Thomas Barnard; Leeds
White, Walter; Dunstable

Election of Student-Associates.

The following persons, having passed the First examination and tendered their subscriptions for the current year, were elected "Student-Associates" of the Society:—

Alexander, James; Stirling
Andrews, Ernest P.; Hanley Castle
Avery, Francis Hubert; Birmingham
Barnard, Alfred B.; Maldon
Barrie, Alexander Young; Dundee
Beacher, Ralph Edward O.; Sheffield
Buckley, Charles Oswald; Castleford
Buckley, Jas. Alfred; Oldham
Burchnall, John W.; Uppingham
Chapman, Herbert; York
Crombleholme, Joseph; Liversedge
Cumber, William Gallienne; Guernsey
Day-Lewis, John Butler; London
Derrington, Nellie; Birmingham
Fereday, Ernest Arthur; Cannock
Gabb, Leslie; Birmingham
Gairn, Andrew B.; Edinburgh
Gaubert, Percival Stephen; Wembley
Hearnshaw, Frank Ogden; Spalding
Hodkinson, John, jun.; Macclesfield
James, John Percy W.; Eastington
Jeeves, Gerald Childs; Hitchin
Jeffery, Arthur Giffard; Londonderry
Jones, Edward Garfield; Pontypridd
Jones, Edwin Oswald; Brynmawr
Kinder, Edith; Whaley Bridge
King, Alfred; Leicester
Knox, George; Oldmeldrum
Linnett, Louis John; Sevenoaks
Oldham, John Brindley; Burslem
Olivant, Percy; Gainsborough
Pyman, Frank; Stowmarket
Richardson, Herbert Stanley; Hull
Sheard, Samuel Alfred; Morley
Shimwell, Thomas William; Buxton
Smithson, Herbert H. S.; Gainsborough
Taylor, Alexander James; Southgate
Thomas, Thomas Mansell; Morriston
Thomson, James Pendrigh; Leicester
Waterhouse, William H. B.; Fakenham
Watts, Ernest George; Cardiff
Wells, William Henry; Portsmouth

Restorations to the Register.

The names of the following persons, who have severally made the required declarations and paid a fine of one guinea, were restored to the Register of Chemists and Druggists.

James Clarke, Prospect Place, High Road, Hayes, Middlesex.
James Kershaw, 174, Manningham Lane, Bradford.
John Gale Rodmell, 24, Ocklynge Road, Eastbourne.

Several persons were restored to their former status in the Society.

Appointment of Committees.

The Council went into Committee to consider the arrangement of the different Committes, as the result of which the following appointments were made:—

General Purposes Committee.—The whole Council, to meet on the evening before the meeting of the Council and at such other times as may be necessary.

Finance Committee.—The President (Mr. W. Martindale), Vice-President (Mr. Newsholme), the Treasurer (Mr. Atkins), and Messrs. Allen, Carteighe, Glyn-Jones, Grose, Harrington, Hills, Park, Savory, Storrar, and Warren.

Benevolent Fund Committee.—The President (Mr. W. Martindale), Vice-President (Mr. Newsholme), and Messrs. Bateson, Corder, Cross, Harrison, Johnston, Southall, Symes, and Young.

Library, Museum, School, and House Committee.—The President (Mr. Martindale), Vice-President (Mr. Newsholme), and Messrs. Allen, Atkins, Carteighe, Harrington, Harrison, Hills, Savory and Warren.

Law and Parliamentary Committee.—The President (Mr. Martindale), Vice-President (Mr. Newsholme), and Messrs. Allen, Atkins, Glyn-Jones, Grose, Carteighe, Cross, Harrington, Harrison, Hills, Johnston, Park, Savory, Southall, Storrar, Symes, Warren, and Young.

Standing Committee to Watch Parliamentary Business, and take action thereon in the interests of Registered Chemists.—The President (Mr. Martindale), Vice-President (Mr. Newsholme), and the London members of Council.

Research Committee.—The President (Mr. Martindale), Vice-President (Mr. Newsholme), and the members of the Library, Museum, School, and House Committee.

Finance Committee.

The SECRETARY read the report of this Committee, which was of the usual character, and recommended sundry accounts for payment.

The PRESIDENT, in moving the adoption of this report, said there was nothing requiring special mention. The month of May was not a month in which much money came in, nor was it a spending month.

Benevolent Fund Committee.

The report of this Committee included recommendations of grants amounting to £30 in the following cases :—

The widow of a former subscriber (age 51). She has six children who are either entirely or partially dependent on her. (Wandsworth.)

The widow of a registered chemist and druggist (age 75). She has had twelve previous grants and is still unable to do anything towards her own support. (Birmingham.)

A former donor to the Fund (age 75). Is incapacitated from further work owing to defective sight. (London.)

Two cases were not entertained.

The VICE-PRESIDENT, who moved the adoption of this report, said there was nothing special to call attention to.

Library, Museum, School and House Committee.

The PRESIDENT moved the adoption of the report of this Commitee, which stated that the Librarian had presented his usual report, including the following particulars regarding attendance at the Library :—

Attendance.	Total.	Highest.	Lowest.	Average.
April	284	22	7	12

Circulation of Books.	Total.	Town.	Country.	Carriage paid.
April	148	79	69	16*s.* 10½*d.*

The Committee recommended the purchase of the undermentioned books for the Library in London :—

Flora of Kent, 1899.
Thoms-Gilg, Nahrungsmittelchemie, 1899.
Richter, Lexikon von Kohlenstoff-Verbindungen.

The Curator's report had also been received, and included the following particulars :—

Attendance.	Total.	Highest.	Lowest.	Average.
April (Day).....	531	35	11	23

Several donations to the Library and Museum had been received (see *P. J.*, May 13, p. 445), and the Committee had directed that the usual letters of thanks be sent to the respective donors.

Mr. HILLS, in moving the adoption of the report, said there was nothing to which he need call attention. The Committee spent a considerable time in discussing various matters of detail. He was glad to find that, on the recommendation of Professor Collie, it was proposed to admit to the Research Laboratory for the remainder of the Session four gentlemen who had recently been successful in the examinations.

The resolution was unanimously adopted.

Law and Parliamentary Committee.

The SECRETARY read the report of this Committee, which had had under its consideration the Companies Bill introduced into the House of Lords by the Lord Chancellor, and recommended that the Watch Committee should take steps, when the Bill is before the House of Commons, to oppose Clause 2 and to secure the inclusion of pharmaceutical chemists, and chemists and druggists, in Clause 3.

The PRESIDENT said there had been a change of front with regard to the Pharmacy Bill and the Companies (Medical Profession) Bill since the last Council meeting. The Pharmacy Bill and the Medical Bill of the Lord Chancellor had now become Clauses 2 and 3 of the Companies Bill introduced by Lord Dudley, which had passed the second reading in the House of Lords ten days ago. Clause 2 now read in a prohibitory way ; instead of reading "a company may carry on business," it was "no company may carry on the business and use the description of a pharmaceutical chemist, etc., unless such business is *bonâ fide* conducted by a manager being a pharmaceutical chemist, etc., and unless the name of the person carrying it on is posted in a conspicuous place." That did not alter the position of chemists, and therefore the Committee was of opinion that with regard to the Companies Bill it must be strenuously opposed when a fitting opportunity occurred. The Government refused to insert a clause in the Companies Bill, 1896, but it now wanted to make the law fit the decision of the Judges, which had placed companies outside the Pharmacy Act some years ago. By the present Bill the titles of chemists were proposed to be taken from them, but they intended to retain them if possible. It was the word "person" in the Act of 1868 which put companies outside the Act. A body corporate could not be examined, as Lord Selborne decided, and the conclusion to be drawn was that a company could not carry on a personal occupation. Clause 3 of the new Bill would enact that it was unlawful for a company to carry on the profession of physician, surgeon, dentist, etc.—why, then, should it be allowed to dispense prescriptions ? The Committee could not see the justice of treating one class of qualified persons in one way and pharmacists in another, they being the greater sufferers. The Council hoped in time to call for the loyal help of all the members, but for the present it was thought best to lie low and only use personal influence when opportunity offered. The Council did not think it would be advisable to invite any general agitation at present, but when the matter passed into the domain where influence could be used with greater effect, then the one clause should be strenuously opposed, and, if possible, the words "pharmaceutical chemist or chemist and druggist" introduced after the word "dentist" in Clause 3. He moved that the report of the Committee be adopted.

Mr. HILLS, in seconding the motion, reminded the members that, having been told some few years ago that it was impossible to amend the Companies Acts on the lines they suggested, there was now a proposal from the Government to amend the Companies Acts on distinctly objectionable lines. Two or three months ago, when two other Bills were before the House of Lords, it was suggested by the Committee that action should not be taken in opposing the one Bill or in endeavouring to amend the other until they came before the House of Commons. The wisdom of that step had, he thought, been shown, because those two Bills had not reached the House of Commons yet, and, as far as he could see, were not likely to. They might, therefore, ask their friends to extend the same confidence in the Council with reference to the proposals now before Parliament. The Council did not wish to tie their hands with reference to any personal appeals they might make to individual members of the House of Lords, but asked them to trust the Council to say when the proper time arrived for endeavouring to amend the Bill in the desired direction. It was very important that they should all act at once, and at the right

time, and he hoped these remarks might be taken as an answer to some of their friends who still asked why the Bill should not be opposed in the House of Lords. At headquarters they had sometimes more information than their friends in the country, and the Committee were unanimous in the belief that it would be wise to reserve opposition until the Bill came before the House of Commons. With regard to a Companies Bill there was only one course which pharmacists could take, and that was that any privilege accorded to qualified persons must apply to all qualified persons who had undergone training and examination in the interest of the public. He therefore hoped the resolution would be carried.

Mr. GLYN-JONES suggested the question whether the fact that such an important change of front had taken place as had been referred to by the President was not a reason for referring the question to the new Law and Parliamentary Committee. As a new member of the Council he felt that he should like to have some information as to what was the policy of the Council with regard to the whole question of company pharmacy, but he could quite see that it might be better that the information should be given in committee. He was quite ignorant as to how much the Council knew of the Government's intentions in regard to this Bill, and it was a matter of common knowledge that the General Medical Council, which was also interested in another clause of that Bill, was equally in the dark, because only last week the President of that Council stated that repeated attempts had been made to get a clause inserted in the Companies Bill dealing with the medical question, and that those attempts had failed; but at the very time he made that statement the Bill was already printed, with the clauses referred to in it. It had struck him very forcibly that the fact of its being a Government Bill necessitated immediate action. He would move as an amendment—

> That the question of company pharmacy be referred to the present Law and Parliamentary Committee.

Mr. CARTEIGHE observed that at the last Council meeting it was decided that the two Bills in the name of the Lord Chancellor should be dealt with in a particular fashion. Those two Bills were now incorporated in the two clauses referred to.

Mr. GLYN-JONES said there had been a change of front, and one which called for fresh consideration by the Law and Parliamentary Committee.

Mr. STORRAR agreed with Mr. Jones that it was high time that the Council should make up its mind as to its policy on the company question. If Mr. Glyn-Jones would allow the motion then before the Council to be passed and would move a supplementary motion, viz., "That the whole question of company pharmacy should be considered by the Law and Parliamentary Committee," he would be glad to second it. He made this suggestion for the reason that the Bill might possibly be before the House of Commons before the Council met again. In his opinion, they should oppose every attempt at pharmacy legislation which had been taken without consulting the Council.

Mr. Glyn-Jones's amendment not being seconded,

The PRESIDENT put the motion, "That the report and recommendations of the Law and Parliamentary Committee be received and adopted," and this was carried.

Dispensing by Unqualified Persons.

The PRESIDENT said the next business was to consider the resolution which was passed on the proposition of Mr. Glyn-Jones at the annual meeting, viz. :—

> That the dispensing of medicines by unqualified persons be referred to the Council.

The General Medical Council had already taken steps in the matter, for they had appointed a Committee to investigate the question, and therefore he thought it would be rather invidious on their part to discuss the matter at present.

Mr. GLYN-JONES said any decision which the Council came to to deal with the matter would certainly meet with his wishes. He had tried to get some information as to what it was likely the Committee appointed by the General Medical Council would do, and, although he was not in a position to say so with authority, he had reason for believing that the subject would not be dealt with during the present session of the General Medical Council, which would mean that it would be deferred till November. In his opinion the Council ought to say to all parties concerned that they felt that the Pharmaceutical Society had a right to be consulted on all matters dealing with pharmacy.

The PRESIDENT then proposed that the matter be referred to the General Purposes Committee for consideration and report.

This was carried unanimously.

Pharmacy in Gibraltar.

The PRESIDENT said a communication had been received from the Colonial Office endorsing an Ordinance which was promulgated in Gibraltar last autumn, with regard to pharmacy, and asking for observations upon it. It appeared that some modifications were required in order to secure the practical working of the Ordinance, and as it was a question of detail he would suggest that it be referred to the Library and Museum Committee for consideration and report.

This was at once agreed to.

Correspondence.

The PRESIDENT said a number of letters had been received expressing confidence in the Council in the course which had been adopted with regard to the measures in Parliament. They came from the Dewsbury and District Chemists' Association, the Bradford and District Chemists' Association, the Chemists', Assistants', and Apprentices' Association of Edinburgh, and from a meeting held at Grimsby. There was also one from the Derby Chemists' Association, expressing confidence in the Council and hoping that the present Bill would be opposed.

The SECRETARY reported the receipt of a letter from the Privy Council, approving the appointment of Mr. Peter Boa as an Examiner in the place of Mr. Maben.

General Purposes Committee.

The Council went into Committee to hear the report of this Committee, which dealt solely with legal matters.

On resuming, the report and recommendations of this Committee were adopted, and special resolutions passed authorising the Registrar to take proceedings against the persons named therein.

TOXICOLOGICAL DETERMINATION OF BROMOFORM.—A. Richaud has devised a simple method for the determination of bromoform in complex mixtures of organic matter, such as fæces and visceral contonts. A known quantity of these is first distilled with water, so that the distillate does not exceed 100 C.c. This is then gently heated with an excess of potash, for an hour or an hour and a half, when each molecule of bromoform will give three molecules of KBr, acccording to the equation $CHBr_3 + 3KHO = 3KBr + CO + 2H_2O$. The alkaline bromide thus formed is then titrated with decinormal silver nitrate solution. When the organic matter gives volatile bodies which reduce silver salts, the solution is evaporated to dryness and ignited, the residue is redissolved, neutralised with acetic acid, and the KBr titrated in the usual manner.—*Journ. de Pharm.* [6], 9, 234.

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LONDON: SATURDAY, JUNE 10, 1899.

THE COUNCIL MEETING.

Before the commencement of the business, Mr. Walter Hills, as Chairman, rose and tendered a welcome to Mr. Glyn-Jones as a member of the Council, and Mr. Glyn-Jones, in reply, expressed a hope that by his connection with the Council he might at any rate gain the respect and goodwill of its members. After the minutes of the previous Council meetings had been read and confirmed, the Chairman mentioned that letters had been received from Mr. Ekin and Dr. Inglis Clark, thanking the Council for appointing them to represent the Society on the Pharmacopœia Committee to be convened by the General Medical Council; from Mr. Lucas, for his appointment to conduct the Scholarship Examinations; from Mr. Peter Boa, for his appointment as an Examiner; from Mr. Garsed, for his appointment as Burroughs' Scholar; and from the Edinburgh Chemists', Assistants', and Apprentices' Association, for the use of the Society's premises for their periodical meetings.

On the ballot being taken for the election of President, Mr. William Martindale was unanimously elected to that office, Mr. Newsholme was re-elected Vice-President, and Mr. S. R. Atkins Treasurer.

On the motion of the Vice-President, seconded by Mr. Atkins and supported by the President, a vote of thanks was passed to the late President, expressing appreciation of the manner in which he has fulfilled the onerous duties of his position during the last three years.

Mr. Richard Bremridge was re-appointed Secretary and Registrar, Mr. J. R. Hill Assistant Secretary in Scotland, and Mr. E. M. Holmes as Curator.

The additions to the ranks of the Society comprised 55 members, 42 student associates, and 37 persons were restored to membership of the Society.

The several committees of the Council were then reconstituted without much alteration, except the addition of the Treasurer and Mr. Glyn-Jones to the Finance Committee.

The report and recommendations of the Finance Committee were adopted as presenting no departure from customary procedure, and, on the recommendation of the Benevolent Fund Committee, three grants amounting to £30 were ordered to be paid. The Secretary reported the death of Mr. George Ramsden, who had been an annuitant since 1896.

The report of the Library, School and House Committee mentioned, in addition to the usual details, that several students have been admitted to the Research Laboratory on the recommendation of Dr. Collie.

A resolution was passed authorising the Committee to make arrangements for the delivery of an address at the opening of the next session.

On the reading of the report of the Law and Parliamentary Committee, the President drew attention to the introduction of two new clauses into the Companies Bill, which has been read a second time in the House of Lords, and also pointed out that, in opposition to previous representations that professional qualifications could not be dealt with in a Companies Bill, these two new clauses dealt with both medical and pharmaceutical qualifications, but in such a contradictory manner as leave the Council no alternative but to oppose in the one case altogether, and in the other to press for the insertion of the pharmaceutical chemists and registered chemists and druggists upon the same footing as legally qualified medical, surgical, or dental practitioners.

Mr. Hills, in seconding the motion to adopt the recommendations of the Law and Parliamentary Committee, emphasised the necessity of insisting that any privilege accorded by the State to qualified persons must apply to all persons who have undergone training and examination in the interest of the public.

Mr. Glyn-Jones suggested that the altered position of the Government was a reason for referring the whole subject of company pharmacy to the new Law and Parliamentary Committee, and he therefore moved an amendment to that effect; but after some conversation the amendment was not seconded and the resolution to adopt the report of the Committee was carried.

In referring to the subject of dispensing by unqualified persons, the President mentioned that the General Medical Council has already taken steps to investigate the matter, and he suggested that its discussion by the Council should, therefore, be deferred for the present.

Mr. Glyn-Jones objected that in that way the consideration of the subject would probably be deferred until November, and in his opinion the Council should urge its right to be consulted.

On the motion of the President, the matter was referred to the General Purposes Committee for consideration and report.

Among the correspondence that has been received was a letter from the Privy Council Office approving the appointment of Mr. Peter Boa as a member of the Scottish Board of Examiners; another letter, from the Colonial Office, in reference to an Ordinance promulgated in Gibraltar with regard to the practice of pharmacy, was referred to the Library, etc., Committee. A number of letters were mentioned as having been received from various local associations throughout the country, expressing confidence in the Council, and approving of the course adopted with regard to legislation affecting pharmacy.

After the report of the General Purposes Committee relating to legal matters had been considered, special resolutions were passed authorising the Registrar to take proceedings in various cases of alleged infringement of the Pharmacy Acts.

ANNOTATIONS.

THE ELECTION OF MR. MARTINDALE as President of the Pharmaceutical Society may be expected to cause much gratification amongst the registered chemists of Great Britain. He is a typical pharmacist, of world-wide reputation, and his occupancy of the presidential chair cannot fail to add further lustre to a position which has been adorned by so many distinguished pharmacists during the past fifty-eight years. Mr. Martindale has been continuously engaged in the practice of pharmacy for more than forty years, and he has been registered as a pharmaceutical chemist since 1866. Prior to that he studied at the School of Pharmacy, Bloomsbury Square, and has since acted as a teacher of pharmacy, in addition to being engaged in nearly every branch of pharmacy. His present establishment in New Cavendish Street is a model pharmacy, and the success that has attended the efforts put forth to develop it should afford sufficient proof that scientific pharmacy conducted on individualist lines is far from being so unsatisfactory an outlet for human activity as many would have us imagine. The 'Extra Pharmacopœia,' prepared by Mr. Martindale in conjunction with Dr. Wynn Westcott, and first published sixteen years ago, is, of course, a pharmaceutical classic. As an examiner, the new President has an honourable record of ten years, and since 1889 he has served his fellow-craftsmen as a member of the Council of the Pharmaceutical Society. He has never occupied the position of Vice-President, but on Mr. Hampson's retirement he was elected Treasurer in December last. For some time past he has enjoyed but indifferent health; he has now, however, fully recovered, and the great multitude of his friends will join in wishing him freedom from illness and anxiety during his term of office.

THE TOWN OF PLYMOUTH should be one of the best known in England a few months hence, for so many professional and trade conferences are being held there this year as to amount to a positive invasion of the place. In one respect this is likely to cause some slight difficulty to the local officials of the British Pharmaceutical Conference, no less than two other bodies having arranged to meet at Plymouth the same week as the pharmacists. As a result there will be great pressure at the chief hotels, and it will be absolutely necessary for those members of the Conference who intend being present at the Plymouth meeting to notify the fact to the local secretary—Mr. J. Davy Turney, 15, Leigham Terrace, Plymouth—at a much earlier date than usual. In fact, it will be none too early to write asking Mr. Turney to secure suitable accommodation at once. Though the Royal Hotel will be distinguished as the headquarters of the Conference, no single hotel will be able to accommodate a large number of guests, and the pharmaceutical party will probably be much more scattered than is usually the case. At the same time the number of good-class hotels and boarding-houses in Plymouth is so considerable that no real difficulty need arise if those who intend to be present at the meeting will act promptly instead of procrastinating, as is, unfortunately, so frequently the case. The issue of the pink circular is generally regarded as the intimation that the local secretary is prepared to book apartments for intending visitors, but Mr. Turney wishes it to be understood that he will be glad to receive instructions to that effect forthwith.

THE CONFERENCE PROGRAMME, it may be stated, is now practically complete, and was formally adopted at a meeting of the Executive held on Wednesday last. The proceedings will commence on the evening of July 24, when Mr. J. C. C. Payne (the President) and Mrs. Payne will hold a reception at the Assembly Rooms, Royal Hotel. These are exceptionally fine rooms for the purpose, with practically unlimited accommodation. The Sessions of Conference will open at the Law Courts on the following day, when, it is hoped, the Mayor of Plymouth will attend to offer an official welcome. The reading and discussing of papers will be the chief business from 10 a.m. to 4 p.m. on Tuesday and Wednesday, with the usual interval of an hour for luncheon at the Corn Exchange each day. Afternoon tea will be served at the Assembly Rooms at the close of each day's work, and there will probably be a short excursion to some place of interest after tea on Tuesday, whilst a smoking concert and ladies' drawing-room concert will be held on Wednesday evening. It is an open secret, by the way, that there will also be a dance at the Assembly Rooms on that evening. Arrangements will also be made by the ladies' Committee to entertain the lady visitors whilst the business meetings are in progress, and on the Thursday there will be a whole-day excursion on somewhat novel lines. At a convenient hour in the morning the members and their friends will be conveyed to Mount Edgcumbe by steamer. There the morning will be pleasantly spent, Lord Mount Edgcumbe having kindly consented to throw open his park and private gardens for the occasion. Shortly before one o'clock, the party will return from Mount Edgcumbe, embarking at Cremyll Beach, and luncheon will be served in the Pavilion on the Promenade Pier, after which the whole party will be taken by steamer around the Sound, through the Hamoaze and up the beautiful river Tamar. Afternoon tea will be served on board, and it is hoped to return to Plymouth at a reasonably early hour in the evening. The Government dockyards will probably be visited on the Friday, and doubtless many of the visitors will find their way to Dartmoor and other places of interest in the vicinity of Plymouth.

SUCH A PROGRAMME as is briefly sketched above should require but little recommendation to induce the pharmacists of the United Kingdom to assemble at Plymouth in such force as to make the meeting next month a record one, the more especially as the town and district offer exceptional advantages to holiday-makers. Sea and river, moorland and valley, alike attract by their many and varied beauties, and but few who take the trouble to travel to the great naval centre of the West Country next month will be able to refrain from visiting the district again. Yachting, cycling, fishing, and all other forms of outdoor exercise and recreation can be enjoyed to perfection near Plymouth, and the local committee is taking steps to give all necessary information about the town and district in a special guide-book, a copy of which it is proposed to send out in advance with every set of tickets sold. Altogether, then, circumstances point to the probability of a large gathering, and the advice may therefore be profitably repeated, that those who have any thought of attending the meeting should send early intimation of the fact.

DISPENSING BY DOCTORS is the subject of an editorial in this week's *Medical Press*, and the view taken of the matter by our contemporary will be regarded by chemists as a distinctly reasonable one. Whilst it is acknowledged with regret that it seems equally impossible to secure "the complete divorce of the medicine trade from medical practice in England" and "the purgation of the chemist's trade from counter-prescribing," it is maintained that there is every whit as much reason to expect medical practitioners to stick to their own legitimate business of diagnosing and prescribing as to call upon chemists to limit themselves to the dispensing of medicines. In fact, it is suggested that, in this matter, the just rights of doctor and chemist are on all fours. Thus, it is urged that whilst "the chemist may abuse his

position by advising and prescribing upon a dangerously insufficient knowledge of medicine and surgery, and by doing so without seeing the patient," medical men cannot claim for their profession "any expert acquaintance with chemistry and pharmacy nor any facilities for making up medicines equivalent to those enjoyed by the chemist." The whole dispute, as argued from the medical side, is considered to be a question of shop and of money, and not deserving of being raised to any higher level. In conclusion, whilst it is held to be impossible for country practitioners to cease to keep a stock of medicines for supplying to such of their patients as may be remote from chemists' shops, it is suggested that in town practice there is no element save the money profit which should induce the practitioner to make up his own medicines.

The List of Birthday Honours includes but few names of interest to pharmacists. Professor J. S. Burdon Sanderson receives a baronetcy; Mr. H. M. Stanley becomes a Grand Commander of the Bath; Mr. W. H. Preece and Professor Michael Foster become K.C.B.'s. Professor Sanderson was Croonian Lecturer at the Royal Society for some ten years, also Jodrell Professor of Physiology at University College, London, and Waynflete Professor of Physiology at Oxford, whilst he succeeded Sir Henry Acland as Regius Professor of Medicine in 1895. Mr. Stanley is best known as having "found" Livingstone and explored part of Central Africa; Mr. Preece was, until quite recently, Electrician and Engineer-in-Chief to the Post Office; Professor Foster occupies the chair of Physiology at Cambridge and is President-Elect of the British Association. Sir J. S. Burdon Sanderson and Sir Michael Foster are both honorary members of the Pharmaceutical Society.

A British Academy of Medicine is suggested by the editor of the *Practitioner*, as the best means of providing medical science with a voice. The Royal College of Physicians is said not to have been a very successful adviser to the Government, in regard to the practical questions with which medicine has to deal, and it is urged that the British Medical Association cannot speak in the name of medicine because it is not a scientific body. It is described as a most useful institution in its way, representing to a certain extent the feelings, and also the follies, of the medical profession, but its business is summed up as "medical politics diversified with periodical picnics." The proposal is made, therefore, that an Academy should be formed by a federation of the principal medical societies of London and the provinces, each retaining its autonomy but owing allegiance to a central authority, consisting of a President, a Council, and two to three hundred Academicians selected by the Council from the chief representatives of the federated societies. Associates and Correspondents could also be elected, in proportion to the number of members in the different societies, and the Academy might be divided into sections of medicine, surgery, etc. As an alternative it has been suggested that the Medico-Chirurgical Society might form the nucleus of the Academy. In either case, it is assumed that the profession would be able to exercise vastly greater influence through the body which it is proposed to bring into existence, and that assumption, it may be remarked, is thoroughly justified by the experience of the Pharmaceutical Society, which, in great measure, fulfils for pharmacy the *Practitioner's* ideal of what an Academy of Medicine should be.

The Camphor Monopoly is the subject of an article quoted by the *Financial News* from a Formosan source, according to which the Bill relating to the camphor monopoly in Formosa having lately been passed by the Japanese Diet, with a sum of 1,681,434 yen appropriated towards its working funds and the expenses of the camphor offices for the present fiscal year, it is understood that the monopoly system will be put in operation from July next, when the new treaties will take effect. With regard to the method likely to be resorted to by the Government for disposing of camphor on the market there are said to be various rumours, and no one outside of the Government appears to know anything of the matter, the strictest reticence being kept among the authorities. The *Tainan Nichi Nichi Shimpo*, a Government organ, had a long leader on the subject in question, in which were enumerated three methods for consideration as the only courses left to the Government for its choice on the subject of selling camphor on the market. The first method is to sell it by public tender, but this the journal blames, as liable to abuses, such as the private combination of tenderers to beat down the price. The second is to sell it to the public at a regular price, fixed quarterly or half-yearly, which the journal also thinks unadvisable, as against the acknowledged theory of economic science; for by this method the Government will, the paper thinks, generally be in the rear to work in harmony with the ever-changing economic condition of the active market. The third and last method proposed, and energetically recommended as the best course under the present circumstances, is to appoint some important merchant or merchants, with ample experience in the foreign trade, who will get the monopoly of receiving consignments of Government camphor on commission, and be allowed to do the best he or they can on the foreign markets under the superintendence of the Formosa Government. Though it is believed that this last method will meet with much censure and attack from outsiders, the Government is urged to proceed with what is thought best without heeding them at all. In short, the *Taiwan Nichi Nichi*, which is believed to be officially inspired, thinks that a great thing can only be effected by a firm self-determination, disregarding outside criticisms, and strongly urges the authorities to adopt its view.

The Chemistry of the Future is the subject of an article in the *Journal of Education* by Mr. A. J. Wilcox, who is of opinion that practice should come before theory, and that it is highly desirable that the students attending a class should remain in absolute ignorance of the experiment about to be performed. "They should not be told what to expect, but be allowed to note the results for themselves. The advantages of this system are obvious. By the anticipation of unknown phenomena, the interest is the more effectually secured, while the power of observation is materially strengthened. In the early stages, the experiments should be as easy as possible; indeed, it often happens that the simplest operations may be made to demonstrate the deepest truths. Only one experiment should be performed at a lesson; in fact, more time may be profitably spent over its investigation." After each demonstration the students should be encouraged to offer some explanation, however loose and fragmentary, of the phenomena they have noticed, and the fallacies of their arguments should be pointed out, a good reason being given for each objection. When the matter has in this way been thoroughly threshed out, a clearly worded account of the experiment may be dictated, preferably in the well-known form of "experiment, observation, and inference." This explanation is to be taken down by each student in his note-book; he should likewise be carefully taught to make a rough, but accurate, sketch of the apparatus used, and the neat recopying of the whole in a clean book will form a valuable home-lesson. At the next lesson the experiment is repeated, and on a subsequent occasion the students themselves may, under careful supervision, select the necessary apparatus, fit it up, and perform the same experiment. If the plan suggested be followed, it is thought that a course of instruction extending

over three years will be amply sufficient to lay a sound foundation of the science for further work. During the first year, the equations and arithmetic should be totally neglected, the one aim of the teacher at the beginning being to make his pupils familiar with the most common notions and greatest truths of the science, so that they can be deduced from natural phenomena and the simplest experiments.

The Second Year's Course should, in Mr. Wilcox's opinion, include the preparation and properties of the elementary and compound gases, common acids, etc., and more elaborate experiments, demonstrating chemical theory in greater detail. Equally, or perhaps more, important is the introduction of the equations. This must be done in the simplest manner; but the theory of each step in an experiment ought to be now represented in symbols. During this year, also, the technical terms and nomenclature should be judiciously slipped in on convenient occasions; the students thus become imperceptibly familiar with knowledge the acquisition of which is usually looked upon as drudgery. The arithmetic—and hence "chemistry as an exact science"—is the text for the third year. To present to the students the atomic and reacting weights of the elements, and the laws of chemical combination, as the results of direct experiments made by themselves, it is, of course, necessary to take them through a preliminary course of instruction in the proper use of the balance and the art of accurate weighing. In the first place, they may determine the increase or decrease in weight of various substances when subjected to heat; after an experiment, the ratio (and percentage) of the loss or gain to the weight of the original substance should be made perfectly clear to the students, who must themselves do the calculations. They should also have an opportunity of applying the practice and theory of the science to the examination of various common substances, with a view to ascertaining the nature and composition of each. The analyses should proceed by every known method, and all lines of argument be employed to ensure sound deductions. Great care must be exercised in distinguishing between a direct proof and mere confirmatory evidence of a chemical truth afforded by an experiment, and at the end of an investigation the students should be practised in "summing up" the evidence adduced by their experiments, and in arriving, by logical arguments, at right conclusions as to the nature, composition, properties, and general characteristics of the substance under examination.

The Lord Chancellor's Unfair Discrimination between the profession of pharmacy, on the one hand, and those of medicine and dentistry, on the other, continues to be the subject of severe criticism by the editor of *Truth*, who states in this week's issue that a curious circumstance has been pointed out to him in connection with Lord Halsbury's twin Bills making it (1) lawful for a company to trade as pharmaceutical chemists but (2) unlawful for a company to carry on business as doctors or dentists. It appears, he remarks, that the substance of both those measures has been reproduced in Clauses 2 and 3 of the Companies Bill, as amended by the Select Committee of the House of Lords. Continuing, he says "the latter Bill is otherwise concerned solely with technical amendments of company law, and why these irrelevant proposals relating to chemists and dentists should have been incorporated in it is a mystery. It looks at first sight like an attempt to smuggle through Parliament as unobtrusively as possible two measures which are strangely inconsistent, and which, for reasons I have previously explained, are both strongly opposed in their present form. If that be the object, however, it is scarcely probable that the manœuvre will succeed."

SELECTED PRACTICAL FORMULÆ.

Lotion for Freckles.

(1) Distilled water, 150; borax, 4; glycerin, 15; sodium sulphite, 8; rose water, to 300. (2) Citric acid, 8; ferrous sulphate, 2; camphor, 0·12; elder flower water, 90; orange flower water, 390; eau de Cologne, 8; simple tincture of benzoin, 30. (3) Zinc oxide, 30; borax, 15; glycerin, 60; extract of jasmine, 30; bay rum, 90; distilled water, to 6˜0.—*Pharm. Post*, **32**, 52.

Depilatory Soap.

Starch, 20 Gm., are dissolved in distilled water, 120 Gm., and set aside. In a second vessel sodium sulphide, 34 Gm., barium sulphide, 30 Gm., are dissolved in distilled water, 170 Gm., and glycerin, 20 Gm., added. This mixture is heated, the starch solution added, and stirred until of the consistence of paste. Melted palm oil, 36 Gm., are now intimately mixed and the mass run into china or glass pots while still warm. In using, the part to be freed from hair is rubbed energetically for some time with the paste, until the hairs are completely softened, when they may be washed off with water. Any chafing of the skin may be alleviated with a little vaseline.—*Pharm. Post*, **32**, 39.

Hæmostatic Anæsthetic Solution.

A solution which combines the hæmostatic properties of gelatin with the anæsthetic action of cocaine and eucaine is prepared by A. Legrand as follows:—Pure gelatin, 2 Gm.; pure sodium chloride, 70 centigrammes; eucaine β-hydrochloride, 70 centigrammes; cocaine hydrochloride, 30 centigrammes; pure phenol, 10 centigrammes; distilled water to produce 100 C.c. The preparation is poured while warm into sterilised tubes; when cold it sets to a jelly, which liquefies again at 20° to 25° C., and may in this state be used for injection. It has been found to give excellent results in dental practice, producing good anæsthesia and preventing hæmorrhage.—*Nouv. Rem.*, **15**, 80.

Iodised Cod-Liver Oil.

E. Reboul recommends the employment of a 5 per cent solution of iodine in sweet almond oil in preparing iodised cod-liver oil of accurate dosage. On first adding this to the cod-liver oil a blackish mixture results, the unsightly appearance of which, however, soon disappears on standing, a perfectly bright oil of good appearance resulting. Sesame oil may be used instead of almond oil for the iodine solution. Cod-liver oil may with advantage, be previously sweetened with saccharin; 1 Gm. of that body is dissolved in ether 136 Gm., and the solution is added to cod-liver oil 1000 Gm. The ether is then distilled off. The resulting sweetened oil is much more readily taken by children than the ordinary kind.—*Schweiz. Woch.*, 37, 50, after *Bull. de Pharm. du Sud-Est.*

Non-Poisonous Phosphorus Matches.

According to Courtois-Suffit, the dangers attending the manufacture of phosphorus matches may be entirely obviated by using phosphorus sequisulphide, which is non-toxic, instead of poisonous white phosphorus. The formula for the paste for the match heads is: Phosphorus sequisulphide, 6; potassium chlorate, 24; zinc white, 6; red ochre, 6; powdered glass, 6; glue, 18; water, 34.—*Rev. Pharm*, 7, 67.

Camphorated Dover's Powder.

Potassium bitartrate, 8; camphor, 2; ipecacuanha and opium, of each 1. Let all the ingredients be in fine powder, mix and pass through a fine sieve.—*Meyer Bros.' Druggist.*

NOTICES OF BOOKS.

'THE YEAR-BOOK OF PHOTOGRAPHY' for 1889, which is published by the proprietors of the *Photographic News* at 1*s.* net, is a distinctly useful "amateur's guide." The main features of past years have been followed in the volume, which opens with the usual instructive section on "Progress and Practice." Following that come further additions to the excellent "Photographic Tourist's Companion and Holiday Guide," which has been so prominent a feature of the 'Year-Book' for some years past, a third section is occupied by "Practical Hints for Lanternists," and a fourth is packed with "Facts and Formulæ." No amateur photographer can well afford to be without a copy of the book.

'THE NEWER REMEDIES,' by Dr. Virgil Coblentz (Philadelphia, U.S.A.: P. Blakiston's Son and Co. Pp. 147. Price $1.00 net.), is a useful list of the substances covered by the title of the book, including as it does their synonyms, sources, methods of preparation, tests, solubilities, incompatibles, medicinal properties and doses, together with sections on organo-therapeutic agents and indifferent compounds of iron. The present is the third edition of the book and it is no exaggeration to describe it as one of the best reference works on the subject of which it treats, for medical practitioners, pharmacists, and students.

THE 'AIDS TO THE ANALYSIS OF FOOD AND DRUGS,' by T. H. Pearmain and C. G. Moor, M.A., F.I.C. (London: Baillière, Tindall and Cox. Pp. 206. Price 3*s.* 6*d.*), appear to have met a distinct want, since a second edition of the little work has been called for in what must be regarded as a comparatively short time for books of this class. The present edition deals almost exclusively with articles of food, such as milk, butter, flour, coffee, cocoa, spices, etc., the detailed information published in the new Pharmacopœia having obviated the necessity of dealing with drugs and their preparations at any great length here. There are, however, some brief notes upon the official tinctures, extracts and alcoholic strengths of the Pharmacopœia, and further information on the subject is promised to appear in the authors' larger work on the analysis of food and drugs, now being issued.

'AIDS TO THE TREATMENT OF DISEASES OF CHILDREN,' by Dr. John McCaw (London: Baillière, Tindall and Cox. Pp. 241. Price 3*s.* 6*d.*), constitute another volume in the "Students' Aids Series." The original aim of the author was to place before the student and busy general practitioner an account of the diseases of children in a concise and clear way, and the issue of this—the second—edition has enabled him to make many changes in the text, as well as to add much new material.

THE 'GUIDE PRATIQUE POUR LES ANALYSES DE CHIMIE PHYSIOLOGIQUE,' by Dr. F. Martz (Paris: J. B. Baillière et fils Pp. 263. Price 3 francs), is a slight work, dealing with the analysis of urine, gastric juice, blood, milk, bile, saliva, etc., as well as calculi of various kinds, albuminoid matters, and soluble ferments. It includes several illustrations, together with tables indicating the normal and pathological composition of different physiological products. The book has been specially compiled for the use of medical men, pharmacists and analysts.

'THE STUDY OF THE HAND,' by Dr. Edward Blake (London: H. J. Glaisher. Pp. 135. Price 3*s.* 6*d.* net.), has been published in a second edition within four months of its original appearance. Many valuable suggestions have been adopted by the author, much new matter is incorporated, together with many fresh illustrations, and the book has practically been re-written. It is unnecessary on this occasion to deal with the work at any length, but readers may be reminded that it treats of the study of the hand for indications of local and general disease, and the author goes far to prove that there is something underlying the idea which he is endeavouring to promulgate.

THE 'PROCEEDINGS OF THE CHEMISTS' ASSISTANTS' ASSOCIATION' have now reached their fourteenth yearly volume and, though the editors — Messrs. T. M. Taylor and C. Morley — have had less matter to deal with than usual, the latest addition to the series is not likely to be found less interesting than its predecessors. The papers reprinted and demonstrations reported are, of course, those of the Session 1897-98, and the financial statement of the Association for that year is appended. According to that statement the Association occupies a position which many much older and larger bodies might envy, the balance in hand at the close of the financial year being a distinctly creditable one.

'THE MEDICAL REGISTER' for 1899 is a bulky volume of 1756 pages, but it is published and sold for the General Medical Council by Messrs. Spottiswoode and Co. at the modest price of 6*s.* The total number of persons whose names appear in the Register is 35,057 (England, 20,261; Scotland, 9873; Ireland, 4923), being the largest on record and an increase of about 1000 on the yearly average for the last five years. Since the beginning of registration in 1858, up to January 1 last, no less than 59,544 medical practitioners have been registered; but, as the figures show, the number of names removed on account of death or for other reasons is fast gaining upon the number of those now appearing in the Register. As the book also contains the text of the Medical, Apothecaries, and Dentists Acts from 1858 to 1886, it is extremely useful for reference when many matters connected with medicine and dentistry come up for consideration.

THE CLINICAL LECTURES ON NEURASTHENIA delivered by Dr. Thomas D. Savill, as part of post-graduate courses during the last few years, have been collected and published in volume form. The introductory lecture treats of the pathology of functional diseases of the nervous system; the second, of nervousness generally; the third and fourth, of the diagnosis and pathology of neurasthenia; the fifth, of the mental symptoms of neurasthenia and neurasthenic insanity. The views of different authors on the nature of neurasthenia are summarised in an addendum.

THE 'TABLES FOR QUANTITATIVE METALLURGICAL ANALYSIS FOR LABORATORY USE,' by J. James Morgan (London: Charles Griffin and Co., Ltd. Price 4*s.*), have been compiled with the object of affording help to a class of scientific workers who frequently have neither means nor leisure at their disposal to avail themselves of any but the readiest means of information. The works of Fresenius, Stillman, Thorpe, Beringer, Phillips, Blair, and others have been made use of by the author in the work of compilation, and chemists interested in metallurgy should find the tables of great practical convenience. The first deals with iron ores, and the subsequent ones with steel, limestone, boiler incrustation, blast furnace slags, coal (including coke, etc.), water for technical purposes, gaseous fuels, etc., copper, zinc, lead, alloys, white lead, and zinc white. Useful notes on the tables are given wherever they appear necessary, and the work is made more complete by the inclusion of tables of atomic weights, factors, and the preparation of equivalent reagents, the last being based on Reddrop's system.

EXTRACTS FROM CONSULAR REPORTS.

LAST YEAR WAS AN EXCEPTION with regard to the export of boric acid and borax from the port of Leghorn, there being an advance in both articles. It is seldom that such is the case, because when the demand for the raw material is slack it is converted into borax on the spot, and the statistics show a decline in the export of the acid and an increase in that of borax. Last year (1898), however, as intimated above, the export in both articles increased, and the quantity of raw material exported exceeded the average of the last seven years.

THE DECLARED VALUE OF SANDALWOOD exported from British New Guinea during the year 1897-98 was £2940, the quantity being 304 tons. This was an increase of value on the previous year of £617, and in quantity of 4 tons. The total value of sandalwood exported during the past seven years has been £21,235, or an average of £3034 per annum. The indiarubber exported from the colony last year consisted of 15 tons, valued at £3683, being an increase of £210 on the previous year. The total value of indiarubber exported during the past four years amounted to £7992.

CURAÇOA ALOES.—Reporting on the trade and commerce of Curaçoa and its dependencies for the year 1898, Consul Jesburun states that New York was the only market where anything near the cost price of manufacturing could be obtained for the indifferent quality of aloes. Aruba, Bonaire, and Curaçoa, he says, could produce very clean and high-grade aloes were the price for such quality any better than that obtainable at present on foreign markets, where buyers are said to give preferencc to the dirty or low grades on account of cheapness, and because those who handle the aloes in Europe are able to obtain by means of suitable machinery and process the exact grade desired at a far lower cost than is possible in the islands. Coupled with the low prices, aloes have yielded less owing to the higher duties levied by the Government (Netherlands), and the producers and exporters have consequently suffered greatly. In the Island of Bonaire, where there are large tracts of land planted only with aloes, the producers are said to be unable to export any quantity for the reasons stated, and the same applies to Curaçoa.

THE STOCKS OF GUM found in Omdurman on the capture of that place in September last, Consul Lamb believes, amounted to about 500 tons, with some 200 tons more at points higher up the river. The total quantity of gum exported from Suakin during 1898 was 888 camel-loads, value £7284, as against £39,685 in 1897. The custom house valuation for export averaged only a little over £2 per cwt.; recently, however, large parcels have changed hands in Suakin itself at 49*s.* to 50*s.* per cwt. The quantity of senna exported from Suakin in 1898 was 208 camel-loads, value £104, as compared with £270 of the preceding year.

THE SPREADING OF PHYLLOXERA is greatly accelerated, the vine-growers of Elba have learned by painful experience, by the carelessness of labourers; for if one thing has been ascertained in Elba regarding this parasite, it is its slowness in spreading when man does not himself transport it by the agricultural implements he uses, or by his boots and clothes. According to Vice-Consul Tonietti, where with ordinary care it might take a year, or even three or four years, to reach a certain spot, careless labourers may carry it in an hour. That such is the case, the almost complete destruction by the phylloxera of the vines, once the pride of Elba, is evidence. The few vineyards that remain simply testify that the effects of this scourge are not everywhere as rapid as was the case in France, but that the quality of the soil, the depth of the trenches, the system of culture, and the carefulness or otherwise of the labourer contribute powerfully to retard or accelerate its ravages.

FORMOSAN CAMPHOR is to be a monopoly of the Japanese Government (see. p. 535) from July next (1899), and it is estimated that the net profit from its sale will amount to about £46,000 per annum. The total amount of camphor exported from Japan during 1898, according to recent returns, was 1448 tons, value £121,546, a decrease on the export of 1897, when 1552 tons, value £133,899, were shipped.

NEW REMEDIES.

ASTEROL.—Asterol is an antiseptic for wounds, stated to be mercury phenyl-sulphonate. It occurs as a brown powder, which is soluble in hot water, and keeps well in concentrated solution, which is precipitated neither by sulphuretted hydrogen, potassium ferricyanide, potassium iodide, nor ammonia. Solutions of asterol do not precipitate albumin. Steinmann has been successful in the treatment of wounds with 2 to 4 per cent. solutions, and recommends them as a substitute for sublimate.—*Pharm. Zeit.*, 44, 179, after *Berl. Klin. Woch.*

AIROL.—M. Ebereson states that airol gives better results as a dressing for surgical wounds and for perineal rupture after childbirth than any other antiseptic. The inconvenience sometimes occasioned by the dressing caking, and thus preventing the free dispersal of the wound-secretion, is entirely obviated by avoiding the use of too large a quantity of the powder. First a light dusting with airol, then a layer of airol gauze, and lastly, a layer of plain sterilised gauze, is the dressing advocated by the author. —*Therap. Monats.*, 13, 31.

ALKYL-OXY-PHENYL-GUANIDINES (ACOINES) AS ANÆSTHETICS.—Trolldenier and W. Hesse have experimented on animals with various acoines to determine their relative toxic and anæsthetic action. They find that these bodies, given internally to dogs, are at least five times less toxic than cocaine. Of the various acoines di-para-anisyl-monophenetyl-guanidine hydrochloride was found to be most suitable for use, on account of its ready solubility in water. A 1:1000 solution of this salt applied into the eye of a rabbit gave an anæsthesia lasting fifteen minutes; a 1:100 solution for forty to eighty minutes; and a 1:40 solution occasioned insensibility of the organ for a whole day. The strongest solutions give rise to irritation, but do not occasion any permanent injury to the eye. No other bad effects are noticed, and the anæsthesia produced is complete In employing acoine in Schleichs' method of producing anæsthesia, it is found preferable to omit the morphine from the original formula and to use the following: Acoine, 10 Cgm.; sodium chloride, 80 Cgm.; distilled water, 100 Gm.; the morphine in the original formula gives rise to pain; with the modified formula anæsthesia lasts for forty to fifty minutes. Solutions of acoine should be preserved from the light. Too strong solution should not be employed either subcutaneously or endermically, or inflammation may ensue. —*Therap. Monats.*, 13, 36.

TANNOCOL is a combination of tannin and gelatin, occurring as a greyish-white, odourless, and tasteless powder, almost insoluble in water, composed of about equal proportions of tannin and gelatin. The preparation is dissolved only in the intestines, being almost insoluble in the acid gastric secretion. For adults, tannocol is prescribed in doses of 1 Gm., for children, in doses of 50 Cgm., several times a day. It is an effective astringent for intestinal complaints, and is well tolerated.—*Pharm. Centralh.*, 40, 71.

EUROPHENE IN THE TREATMENT OF WOUNDS.—Scheller prefers europhene to iodoform as a dressing for wounds, since its use is never followed by eczema, as is frequently the case with iodoform, especially when employed for crural ulcers. Wounds and ulcers treated with europhene heal well and quickly, no irritation is observable, and the absence of scars is especially remarkable. In action, europhene is anodyne and antiseptic. It is invaluable for burns, abscesses, and chilblains. As a dusting powder, a mixture of europhene with finely-powdered boric acid should be employed. For skin diseases, europhene, 5 Gm., with olive oil, 95 Gm., forms a useful application.—*Pharm. Centralh.*, 40, 190.

LINSEED IN DIABETES.—The familiar linseed tea is highly recommended by Vogel as a remedy for diabetes. As the oily mucilaginous taste of the decoction soon nauseates patients, the author proposes to use a dry extract, which may be dissolved in water to a clear tasteless solution. The reduction of the amount of sugar excreted in the urine is said to be remarkable, although, of course, a strict diet has to be observed. In the profession, a considerable amount of doubt as to the value of the drug has been expressed, but those who have been prevailed upon to give this simple remedy a trial, universally speak in its favour.—*Pharm. Post*, 32, 134, after *Pharm. Zeit.*

THE ROYAL INSTITUTION CENTENARY.

As briefly mentioned in our columns last week, Monday, June 5, was the centenary of the Royal Institution, June 5, 1799, having been the date on which the first meeting of the members was held. The founder of the Institution, Sir Benjamin Thompson, afterwards Count Rumford, was born in Massachusetts on March 26, 1753, and on his coming to England was well received as a loyal subject of the King. In 1784 he entered the service of the Duke of Bavaria, and on returning to this country about the end of the last century he conceived the idea, as stated in a letter to Lady Palmerston, of founding an institution which should benefit the poor. The chief objects of the institution were to be the speedy and general diffusion of the knowledge of all new and useful improvements in whatever quarter of the world they might originate, the application of scientific discoveries to the improvements of arts and manufactures in this country, and to the increase of domestic comfort and convenience.

The project was cordially supported by Sir Joseph Banks, then President of the Royal Society, and other wealthy persons of scientific tastes, and an association was formed and sufficient money subscribed to make a good start in 1799, when a house standing on the present site was bought and application made for a Royal Charter, which was granted in the following year.

As a scientist Count Rumford was not very prominent, although he was probably the first to conceive the idea of heat as a mode of motion, in opposition to the then prevalent "material theory of heat." It is as the founder of the Royal Institution and as the man who discovered Humphry Davy that he is remembered to-day, for it was on his suggestion, on July 15, 1801, that Davy was engaged in the service of the Institution. About this time subscriptions to the Institution fell off considerably, so much so that bankruptcy seemed imminent; hence the managers determined on a great reorganisation. The projects of technical education were dropped, and the Royal Institution was transformed into a body for promoting experimental science and for diffusing every species of philosophical knowledge. The change was censured by some of the founders, but from that time the number of its members and the amount of its income increased to such an extent that, notwithstanding occasional fluctuations, all difficulties and crises have been successfully weathered without aid from either the State or any public body. Its buildings, like its operations, have also progressed, the original house having disappeared. The laboratories have been altered and rebuilt from time to time, the most important addition being made three years ago by the generosity of Dr. Ludwig Mond (see *P.J.* [4], 7, 549). The Institution has been singularly fortunate from the outset in securing the services of men of exceptional talent as its professors; men such as Thomas Young, Humphry Davy, Michael Faraday, John Tyndall, and others now living, all of whom have contributed largely to its continued success.

Exhibition of Historical Apparatus.

In connection with the centenary an interesting exhibition of historical apparatus, etc, had been arranged in the upper library of the Institution. Most of the "relics" belong to the Institution's own collection, but many of the articles were on loan. This exhibition more vividly than anything else brought before visitors the memory of the pioneers of science. Perhaps the most interesting relics were the pieces of apparatus employed by Sir Humphry Davy in his researches on alkalies, and the collection of lamps with which he experimented in the effort to find a safety lamp for dangerous coal mines. A splendid collection of physical apparatus of the late Mr. William Spottiswoode, which has been presented to the Royal Institution by Mr. W. Hugh Spottiswoode, was on view, and altogether the exhibition was exceedingly interesting.

The Centenary Banquet.

On Monday evening, June 5, His Royal Highness the Prince of Wales, who is Vice-Patron of the Royal Institution, was present in Merchant Taylors' Hall, at a banquet which ushered in the celebrations organised in connection with the centenary. The Duke of Northumberland, as the President, was in the chair, and was supported by a distinguished company.

After dinner, the Chairman gave the toast of "The Queen," and referred to the fact that Her Majesty was Patron of the Royal Institution, and had never failed to recognise how important was the work which that body set itself to carry out.

The toast was cordially honoured, as was that of "The Prince of Wales and the other Members of the Royal Family."

The Prince of Wales said in reply that he considered it a great privilege and honour to have been asked to take part as vice-patron of the Institution at the 100th anniversary of its existence. When one looked back on all the eminent men who have worked and lectured at the Institution, one thought first of the name of Thomas Young, and of the great Humphry Davy, a man of whom all Englishmen are proud, and one of whose most remarkable discoveries, perhaps, was that wonderful lamp which, philanthropically speaking, has saved the lives of thousands and thousands of miners. Then there was another name—that of Professor Michael Faraday, whom it had been his privilege to know, and whom he should ever associate in his mind with that Institution. He should also mention his distinguished successor, Professor Tyndall. At the present day there is a name that everyone looks up to—a name remarkable as regards science in its every branch—that of Lord Rayleigh. Many of those present, he knew, hoped to have the pleasure of listening to the lecture which he was to deliver the next afternoon. He then thanked those present for having kindly listened to the words which he had spoken, and assured the Duke and the members of that distinguished Society how much he appreciated being asked to take a part in the centenary banquet.

The Duke of Cambridge, in proposing "The Royal Institution of Great Britain," said he took the liveliest interest in the success of so great an undertaking as that in which the members of the Institution were engaged. Having referred to the objects for which the Royal Institution came into existence, His Royal Highness proceeded to say that whilst in the last one hundred years the march of intellect has gone on apace in every part of the world, nowhere has greater progress been made than in this country. Everything had changed more or less in every department of life, and every sphere of it, but nothing had progressed so rapidly as science. Moreover, it had advanced in a sound and useful direction. He considered the world is greatly indebted to such an institution as that, which had not only achieved progress, but had achieved it with prudence and intelligence and without rashness.

The Duke of Northumberland replied.

The concluding toast was "The Guests," which was submitted by the Lord Chancellor, and responded to by Professor S. P. Langley (of Washington) and Professor A. Cornu (Membre de l'Institut, France).

Commemoration Lecture by Lord Rayleigh.

On Tuesday afternoon, June 6, the lecture theatre of the Royal Institution, Albemarle Street, W., was filled with a large audience of ladies and members and many distinguished foreign scientists, British pharmacy being represented by the presence of two past Presidents of the Pharmaceutical Society, Mr. Michael Carteighe and Mr. Walter Hills. His Royal Highness the Prince of Wales took the chair, and prompt to the hour Lord Rayleigh entered to deliver the first commemoration lecture. He immediately commenced his task by stating that the lecture he had been asked to deliver was in commemoration of the work done in the Institution by the various great men to whom they were indebted—Young, Faraday, Davy, Tyndall, Frankland, Odling, and Gladstone. The idea of commemorating all the work that they had done would be utterly hopeless, it requiring not one lecture, but a course of lectures, to deal with such a subject. He proposed to deal principally with the work of Thomas Young. The position that Young held in the opinion of scientific men was an extremely high one—higher now than it was at the time of his principal work. They had in the Institution his lectures on Natural Philosophy, which was a most remarkable work, not nearly so well known as it ought to be. It was to him that they owed the word energy, which was now in everyone's mouth. He said that it would be convenient to give that name to the product obtained by taking the mass of a moving body and the square of its velocity. The earlier lectures dealt, as was natural, with mechanics, and contained expositions as sound as could be obtained. The point of what would now be called potential energy was dealt with better than in any other description he knew of. If a rod was bent, potential energy was stored up in it; but if it was bent too much it would break. There was a limit to the amount of potential energy that could be stored if the rod was to remain intact. Young treated this question with remarkable ingenuity. He imagined two bodies meeting one another. If they met with moderate velocity, at a certain stage

of the collision it was possible that all the energy of motion would be stored up in them. But supposing that the original velocity of the bodies before they met exceeded a certain point, it was impossible that they could preserve their integrity from the result of the collision. They must of necessity go to pieces. This was not altogether a question merely of the size of the bodies. There was the illustration of a grain of sand projected with considerable force against a plate of glass. The glass was quite big enough to absorb the whole energy of the motion of the sand, but the element of time came into the calculation. When the sand struck the glass a wave was propagated from the point of impact; only those parts touched at the time of collision were available for the purpose, and if they could not absorb all the potential energy correspondingly with the energy of motion of the sand the glass must go. Another point in turning over Young's diagrams was the familiar experiment that a light ball might be maintained on a fountain of water, or, as it was performed nowadays, on a jet of air. The mere maintenance of the ball at the end of the jet was not so surprising as its stability. Why did it not fall on one side or the other out of the stream? Young showed that it was the centrifugal force of the stream in bending round the curved body of the ball that ensured stability. In the matter of sound, it was well known that Young was the originator of many of the most important principles on which the doctrine was now expounded. It was with optics, however, that his name was the most generally associated. It was he and Fresnel who laid the foundations of the great structure of the undulatory theory of light. They knew that the eye had the power of changing its focus. If they took an artificial lens it could only focus one distance; but the eye could focus distances ranging from six inches to the objects so far away as the stars. The question discussed in Young's time was how was this power of accommodation brought about? It might be that the internal convexity of the eye was altered; but Young proved that that was not the case by the ingenious process of drowning his eye in water. This virtually altered the convexity, yet the power of accommodation remained, and he therefore concluded it was due to a muscular alteration in the internal lens of the eye. He also described the phenomenon of astigmatism, and showed his deep knowledge of optical theory by suggesting that its effects could be counteracted by the use of a slightly sloping lens. As to the question of chromatics, Young held the correct view, though not universally accepted even yet. Lord Rayleigh showed a modification of the experiment by which he proved that the combination of green and red gave yellow, whereas it was generally thought that yellow and red gave green. The lecturer further illustrated this by an experiment which showed that when the blue and yellow of the spectrum were cut off by solutions of litmus and bichromate of potash respectively, the combination of the remaining red and green was obviously yellow. The lecturer next described Young's way of getting rid of the "false light" that interfered so greatly with the brilliance of the effects when Newton's rings were being obtained by means of two glass plates pressed together, and by analysing the colours from such plates with a prism he exhibited the original of a diagram in Young's book which indicated the particular rays destroyed by interference. Another subject in which Young worked with signal success was that of cohesion, his theory being that the property which enabled solids to resist being pulled apart was not confined to solids, but applied also to liquids, and that the apparent weakness of liquids was due to their fluidity. They all believed that the construction of matter was molecular; that it could not be divided indefinitely and remain similar to what it was before; and the question arose, How big were the molecules? and Young was the first to give a definite answer. Another subject in which he made immense advances was the theory of tides, of which Newton laid the foundation. He found that it was all a question of relative periods. If the revolution of the moon was slow, there would be the normal state of things—high water under the moon; but if it moved more quickly round the earth the reverse would occur. His views on the subject of heat were very interesting, and he declared, without the shadow of a doubt, that it was nothing else but motion. Lord Rayleigh, in concluding his observations on Young, said possibly he had left the impression that Young knew everything. In fact, it was seldom that he was wrong, but just to show he was, after all, human, a passage might be quoted from his works in which he declared there was no immediate connection between magnetism and electricity. Speaking of work which had been done at the Institution by men who held no regular appointment in it, the lecturer noted that Wedgwood, in conjunction with Davy, was the first to produce anything that could be called a photograph, while instantaneous photography, such as was required for rapidly-moving objects, was carried out for the first time by means of the electric spark by Fox Talbot in the laboratory of the Institution. In conclusion, Lord Rayleigh showed one famous experiment of Faraday's—the rotation of the plane of polarised light by magnetism, which he observed had acquired a new interest from the recent discoveries of Dr. Zeeman, and exhibited some curious effects with flames sensitive to sound, in which Tyndall made extensive investigations.

Sir J. CRICHTON-BROWNE, addressing the Prince of Wales, said that the Royal Institution, having resolved to mark its centenary by adding to its list of honorary members the names of some of the most eminent representatives of physics and chemistry in other countries, he begged leave to present to His Royal Highness the gentlemen selected for that distinction. They had all done valuable work in the field of science, and were of world-wide reputation, and it would be unnecessary to do more than to present them, and ask His Royal Highness to admit them to the honorary membership of the Institution.

The PRINCE OF WALES then presented the diploma of honorary membership to the following gentlemen: — Dr. Émile Ador (Geneva), Professor John S. Ames (Baltimore), Professor Svante Arrhenius (Stockholm), Professor George F. Barker (Philadelphia), Professor Carl Barus (Providence, U.S.A.), Professor Henri Becquerel (Paris), Dr. L. Bleekrode (The Hague), Professor Giacomo Luigi Ciamician (Bologna), Professor Nicolas Egorof (St. Petersburg), Professor Antoine Paul Nicolas Franchimont (Leiden), Professor Heinrich Gustav Kayser (Bonn), Professor Wilhelm Korner (Milan), Mr. Samuel Pierpoint Langley (Washington), Professor Otto Liebriech (Berlin), Professor Gustave Leonard Van der Mensbrugge (Ghent), Professor Albert A. Michelson (Chicago), Professor Henri Moissan (Paris), Professor Raffaelo Nasini (Padua), Professor Walther Nernst (Göttingen), Mr. Ernest Solvay (Brussels), and Professor Robert H. Thurston (Ithaca).

The gentlemen named herewith were also elected hon. members, but were unable to be present to receive their diplomas:— Professor Armand Émile Gautier (Paris), Professor Wilhelm Ostwald (Leipzig), Professor Emilio Villari (Naples), Professor Jules Louis Violle (Paris), and Dr. William L. Wilson (Washington).

The Duke of NORTHUMBERLAND moved a vote of thanks to the Prince of Wales for presiding.

The Duke of DEVONSHIRE seconded the motion, and the PRINCE OF WALES having replied, a vote of thanks was passed to Lord Rayleigh, on the motion of Lord LISTER, seconded by Lord KELVIN.

In the evening a reception was held at the Mansion House, City, by the Lord Mayor of London, at which most of the foreign guests were present. The following afternoon (Wednesday) a garden party was given to the guests of the Institution by Dr. and Mrs. Mond at The Poplars, 20, Avenue Road, Regent's Park, N.W.

Commemoration Lecture by Professor Dewar.

The second lecture in commemoration of the centenary was delivered in the lecture theatre, Royal Institution, Albemarle Street, on Wednesday, June 7, by Professor DEWAR. There was a numerous audience, including most of the new honorary members and many gentlemen occupying prominent positions in the scientific world. The PRESIDENT of the Royal Institution (the Duke of Northumberland) occupied the chair. It will probably be remembered that recently Professor Dewar's experiments with liquid hydrogen were greatly impeded and rendered almost impossible by the fact that a tube containing the precious liquid could not be exposed to the air without the mouth of the tube immediately freezing up. On the present occasion, however, Professor Dewar and his assistants had overcome that difficulty, with the result that, for the first time in the history of the world, liquid hydrogen, the lightest and coldest liquid ever known to exist, was exhibited in public, and, in fact, was handed round for inspection in vessels full of it, a point worthy of note being that the vessel containing it was not excessively cold to the touch at first. The experiments carried out on Wednesday evening were of an exceedingly delicate and brilliant character, and it testifies greatly to the ability and dexterity of the lecturer's assistants (Mr. Lennox and Mr. Heath) that no single experiment failed In commencing his lecture,

Professor DEWAR said it was his pleasant duty to deliver the

second of the lectures which had been arranged to celebrate the 100th year of the Royal Institution's existence. He did not intend to take any long flight into the great work of the past, since that had already been done by Lord Rayleigh. His object was rather to introduce his audience to a new instrument of research—liquid hydrogen. This he exhibited boiling gently in a vacuum tube immersed in liquid air, the access of heat being by this precaution greatly impeded. It was a transparent liquid, in which, however, there appeared a whitish deposit. This, the lecturer explained, was solid air, and it was impossible to avoid its presence, because immediately the cotton-wool plug was removed from a vessel of liquid hydrogen the air of the atmosphere came under the influence of so low a temperature as to be at once frozen solid. To prove that the liquid he was manipulating was really liquid hydrogen Professor Dewar put a light to a small quantity, a brilliant burst of flame being the result. To demonstrate its exceedingly small density he showed that only the lightest material possible to be obtained, viz., pith, would float on its surface, while a material like cork would sink to the bottom as if it were lead. He illustrated the lowness of its temperature by a number of experiments. Thus a solid body immersed in it for a short time was shown to become so cold that the air round it was liquefied and ran off in drops, while when a tube containing liquid air was plunged into it the air immediately became solid. On this tube being lifted out again a double effect was seen, for the melting of the solid within it yielded liquid air, which was also formed by condensation on its outside surface. An empty vessel placed for a short time in the cold atmosphere just above this liquid filled with solid air in the form of snow, soon melting into liquid. Oxygen in a sealed tube when lowered into it quickly became solid, and when lifted out it could be seen, as heat was absorbed, to assume first the liquid and then the gaseous form. A sponge of porous material, soaked in liquid hydrogen and brought into a magnetic field, apparently behaved as if it were magnetic. That, however, was due to the condensation of the oxygen of the air, which of course was magnetic, and though an observer might in this way be easily deceived into thinking hydrogen magnetic, Professor Dewar said he was satisfied that it was nearly neutral or diamagnetic. Speaking of the real temperature of this liquid, he said it was 21 deg. on the absolute scale. It had taken him nearly a year to come to a definite conclusion on that point, because he could not get any two thermometers to agree. Pure platinum resistance thermometers gave 35 deg. absolute (or 238 deg. below zero Centigrade), one of platinum-rhodium alloy 27 deg., while hydrogen itself in a gas thermometer gave 21 deg., a reading nearly identical with one obtained with a German silver electrical thermometer. The last part of the lecture was devoted to the extraordinarily low vacua obtainable by the use of liquid hydrogen. Thus by immersing one end of a closed tube in it for a short time and then sealing it off in the middle, a vacuum was formed in the upper part which was substantially perfect, as was shown by the fact that the electrical charge could not be made to pass. In conclusion Professor Dewar, after exhibiting several other beautiful experiments, including one to illustrate the rapidity with which gases were discharged into a vacuum, claimed that the liquefaction of hydrogen was a triumph for theory as well as for fact.

Lord Kelvin moved a vote of thanks to Professor Dewar for his brilliant, beautiful, and splendidly interesting lecture. The end of experiment in research at low temperatures had by no means been reached, and perhaps in a few years substances yet unknown and more refractory than hydrogen would have been found which would bring the experimenter to within 5° of the absolute zero.

Sir George Stokes seconded, and it was carried with acclamation.

Professor Dewar, in reply, paid a high tribute to his assistant, Mr. Lennox, for the part he had taken in the liquefaction of hydrogen. He also desired to acknowledge the admirable work done in this connection by another assistant, Mr. Heath. Personally his chief function had been to get the wherewithal to carry on the experiments, and without the assistance he had received from numerous friends they would have been absolutely impossible.

Diplomas of honorary membership were then presented to Professor Cornu (Paris) and Professor Newcomb (Washington), and then

Sir F. Bramwell proposed a vote of thanks to the Duke of Northumberland for the manner in which he had performed his duties as President of the Institution.

Dr. Mond seconded, and it was supported by Professor Barker, on behalf of the guests from beyond the sea, who, he said, had been royally entertained, listening to lectures such as the world had never before heard and witnessing experiments such as it had never seen.

The Duke of Northumberland replied, and the proceedings ended.

After the lecture, Professor and Mrs. Dewar gave a reception to the guests of the Institution.

On Thursday, June 8, the hon. members visited Oxford University, on the invitation of the teachers of natural science, luncheon being provided in Christ Church Hall.

CHEMICAL SOCIETY.

A meeting was held on Thursday, June 1, Dr. Perkin, F.R.S., in the chair in the absence of the President. There was a moderate attendance. The first communication on

The Hydrosulphides, Sulphides, and Polysulphides of Potassium and Sodium

was made by W. Popplewell Bloxam, in a breezy manner that compensated for the somewhat dull character of the details. Everything connected with these compounds appeared to have been done already, but the results obtained by the author proved that much of the work was inaccurate. Careful comparison of the behaviour of the elements potassium, sodium, and ammonium in the reactions that take place when the sulphides are formed shows up curious points of difference. Thus, when excess of sulphur is added to solution of ammonia, and hydrogen sulphide bubbled through, polysulphides are obtained, and no sulphur is oxidised. In the case of the hydroxides of potassium and sodium, a secondary reaction ensues between the sulphur and the alkali, with production of a thiosulphate. Polysulphides are best prepared by acting on a hydrosulphide with sulphur. The reaction is accompanied by a brisk evolution of hydrogen sulphide.

Curiously enough, all previous methods, both wet and dry, that have been put forward for the preparation of polysulphides yield everything but polysulphides. It is impossible to get potassium hydrogen sulphide, KHS, by dry methods. It may be obtained by passing hydrogen sulphide through rectified ether containing potassium. Hydrogen gas comes off, and a pure product is obtained. This compound is less stable than the normal potassium sulphide, K_2S. The normal sulphides of potassium and sodium act differently when water is added. With the latter there is an odour of hydrogen sulphide, but none with the former. In all probability, when a normal sulphide is dissolved in water the solution contains the hydroxide and hydrosulphide. The author expressed his indebtedness to Dr. Scott for much help rendered during the investigation, and to the founder of the Davy-Faraday Laboratory, where the work was carried out.

Professor J. Millar Thomson complimented the author on the energy with which he had pursued his laborious task.

The Chairman then called on Dr. Sydney Young to read a paper on

The Relative Efficiency of Various Forms of Fractional Distillation.

At the meeting of the British Association last year the author showed a form of still-head, which drew from Dr. Armstrong some suggestive hints concerning the comparative efficiency of various forms of distilling apparatus. The author took the subject up with a view to settling this point, especially in so far as it concerns fractional distillation. The two main requirements in a still-head are (1) that it shall not contain too much condensed liquid; and (2) that it shall be available for small quantities. The plain vertical still-head is the worst form, because as the vapour passes upwards the centre portions may not come in contact with the condensed liquid. Thorough contact is necessary. Greater width of tube does not increase the efficiency, though wide tubes are better than tubes of medium bore. A diameter of 14 millimetres gives the best results. It is an advantage to slope the tube, whereby the downflow of liquid is retarded and better contact is obtained between the vapour and the condensed liquid.

A novel form of tube was shown, in which a glass rod containing discs of glass occupied the centre, the outer tube being constricted

between the discs. Contrary to the teaching of even the best text-books, the efficiency of the condenser increases with the number of bulbs. A further improvement on ordinary bulbs is obtained by heating the upper part and forcing the tube downwards. In this way a pear-shaped bulb is obtained, which is good for high temperatures. Dr. Young went on to compare the forms of condenser known respectively as the Glensky and the Le Bel Henninger. In the former are four bulbs, each containing a glass ball. The second bulb is connected by a side tube with the tube just below the lowest bulb. Looking upon the side tube as a reflux arrangement, the author considered the Glensky apparatus hopelessly bad, as the condensed liquid could not gain access to it. This difficulty is obviated in the Le Bel Henninger apparatus, consisting of four pear-shaped bulbs, provided with platinum cones instead of glass balls. Each bulb is connected with the next lower by a reflux tube attached to its base, thereby offering a free channel to the liquid. This apparatus has a moderate degree of efficiency.

In the discussion, Professor RAMSAY asked whether the rod and disc and the pear-shaped bulb were not easily broken at high temperatures.

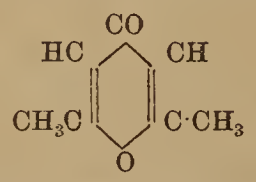
Dr. SCOTT, in a few pointed remarks, considered that the side tubes were not so much a provision for the reflux of liquid as a means of equalising pressure. There was, he thought, no danger of glass balls hindering the passage of vapour and liquid, because as a pool of condensed liquid was formed the balls, being light, readily float.

Dr. YOUNG, in reply to Professor Ramsay, stated that there was not much fear of fracture at high temperatures. With regard to Dr. Scott's remarks, he admitted that they threw quite a different light on the subject and brought forward a point in respect of the side tubes well worthy of attention.

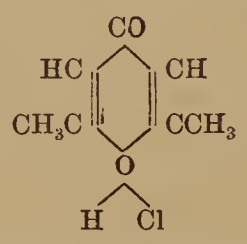
Professor NORMAN COLLIE then followed with the last paper, by himself and Mr. Thomas Tickle, Salter's Fellow in the Pharmaceutical Society's Laboratory, dealing with

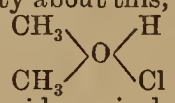
The Salts of Dimethylpyrone, and the Tetravalence of Oxygen.

Dimethylpyrone has the formula



When treated with hydrochloric acid a salt is obtained, which appears to have the formula :—



This view necessitates the assumption that there is a change in the valency of oxygen, and that it may be tetravalent as well as divalent. There is no difficulty about this, seeing that many similar cases are on record, *e.g.*,  , the hydrochloride of methyl ether. Additional evidence is derived from the study of the position of the element oxygen in the periodic table. Many salts of dimethylpyrone have been obtained, including the tartrate, chloracetate, nitrate, and hydrobromide. Attempts to crystallise the acetate and sulphate have failed.

The discussion, unfortunately, was short, owing to the lateness of the hour.

Professor RAMSAY, who had taken the chair in place of Dr. Perkin, paid a compliment to the authors. In this he was joined by Messrs. HORTON SMITH and C. F. CROSS.

The remaining papers, which were taken as read, dealt with the following subjects :—The Sym-di-isopropyl Succinic Acids," by W. A. Bone and C. H. G. Spankling ; "The Chemical Examination of the Oleoresin of Dacryodes Hexandra," by Andrew More ; and "The Active and Inactive Phenyl-alkyl-oxy Acetic Acids," by A. Mackenzie, M.A., D.Sc.

The meeting then adjourned.

NOTICES TO CORRESPONDENTS.

All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and not in any case to individuals supposed to be connected with the Editorial Staff; no responsibility can be accepted unless this rule be observed. Communications for the Current Week's Journal should reach the Office not later than Wednesday, but news can be Received by Telegraph until 4 p.m. on Thursday.

ADVERTISEMENTS AND ORDERS for copies of the 'PHARMACEUTICAL JOURNAL' must be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C. Cheques and money orders should be made payable to "Street Brothers.

ARTICLES AND REPORTS sent for the Editor's approval should be accompanied by stamped directed envelopes, otherwise no guarantee can be given that they will be returned if not found suitable.

CORRESPONDENTS should write in ink, on one side of the paper only, and must authenticate the matter sent with their names and addresses—of course not necessarily for publication. No notice can be taken of anonymous communications.

LETTERS TO THE EDITOR.

The Company Trading Question and Pharmacy Legislation.

Sir,—I have been much interested in your articles and in the correspondence on the "company pharmacy" question with reference to prospective legislation, and I wish to add a word or two on the general subject. It seems to me that as chemists we have not yet realised our position on this important matter. We are all agreed that legislation is necessary—and that it must be towards reform or restriction. In short, we all want a fair measure of protection, both for the public and for the qualified chemist; but we have not yet been able to formulate a commendable scheme. The "suggestions" of the Council and the Bill of the Lord Chancellor have touched the antipodes of the question. The Council desire to restrict the sale and the compounding of medicines to the chemist; to prohibit unqualified companies from carrying on the business even through qualified men. The Lord Chancellor, on the other hand, wishes to enable companies to carry on pharmacy by means of qualified men, and for the doing of which they are to become pharmaceutical chemists or chemists and druggists, and reap all the benefits and emoluments of such qualifications. Now, it is not likely that Parliament will give a monopoly to chemists or give away their well-earned titles. It behoves us, however, to seriously consider our position, so that we may not only be able effectively to check bad Bills, but also to formulate a good one which will firstly be for the safety of the public, and secondly for the advantage of the chemist. The Council deserves praise for its diligence and careful attention in this matter, but it ought to be aware that no Member of Parliament would ever support a provision which would interfere with the principles of free trade. To ask that all medicines be placed in the entire control of retail chemists—however desirable this might be from our own point of view—would be to ask too much. It is for chemists to say definitely, through their respective Associations, what they want, and then for the Council to prepare a Bill to submit to Parliament. In doing this, however, it ought to be kept in mind that before a Bill becomes an Act it must have the support of the Houses of Parliament, and that, therefore, it is a waste of time and strength to ask for impossibilities.

Edinburgh, June 6, 1899. W. S. GLASS.

Unqualified Opinion.

Sir,—I have never named any particular pirate in the drug trade, and I never intend to do so, but I adhere to what I said before, *i.e.*, that the pages of the lay press are at their disposal and they have never been slow to take advantage of this fact. We want none of their opinions. Their existence is an injustice, and their opinions are an insult to us. Any ignorant man in the street can give better advice than these men, because his advice would be unprejudiced according to his lights. I am quite sure that, although we may have had to put up with a good deal of "booming" of these men outside of official pharmaceutical circles, qualified men are at present in no temper to put up with anything of the kind within. Besides, these men are stating the terms they are prepared to accept. Who cares what terms they are prepared to accept? This is a case in which there cannot be any compromise of any kind with unqualified men. You say that we are discussing the question of the chemist's qualification and its value to the public. Of course

I value your opinion, and no qualified man has more respect for the *Pharmaceutical Journal* than I have; but I must protest against the acceptance of this position by official pharmacy. Unqualified men would like us to believe that it is the value of our qualification to the public which is under discussion, but we will not allow that this is so at any price. The State put a value upon qualification more than thirty years ago, and whether it made a mistake then or not it is too late now for reconsideration. It has never been argued by any sane man, however, that the qualification was over-valued at that time. Almost every man whose name appears upon the Register at the present time had it placed there upon the distinct understanding that the sale of scheduled poisons and the titles mentioned in the Act would be confined to him according to the terms of the Pharmacy Act, and any departure from the terms of this agreement upon the part of the State would constitute a flagrant act of confiscation. Unqualified men argue that for the State to close them up would be an act of confiscation, but this is not so according to law. Our rights are founded upon a distinct Act of Parliament; theirs are, at the very broadest computation, founded upon the weak link in an Act of Parliament. The State may at any time strengthen an Act of Parliament for the purpose of preventing abuses, and those who have, with their eyes open, taken advantage of a weak link in an Act, even where such a link exists, have no cause for complaint if they are crushed; but for the State to abolish an Act, or to weaken it, after real vested interests have grown up under its wing is a very different matter. These men have no legal recognition and they have no legal vested interests. No judge has ever said that the public safety was provided for by their existence; no judge has ever said their existence is just, or moral, or right. The most that has ever been said so far is that the Act as it stands is not strong enough to stop them. Whenever the Act is strong enough they may quite legally and justly be closed up.

There can be no doubt that the attitude taken up by the House of Lords is very serious. So long as it was merely the Lord Chancellor who was "mumbling and humbling" there was no great cause for excitement, but the idea of including his clause in a general Companies Act constitutes a grave menace to pharmacy. It is plain now that these Lords are willing to drop the Pharmacy Act altogether. Unless they are absolutely blind they must see that this clause as it stands means repeal of the Pharmacy Acts. If it passed as it stands pharmaceutical examinations would cease to be conducted in five years, and the Pharmaceutical Society would cease to be heard of in Bloomsbury Square. There is no danger, however, of this clause becoming law as it stands. The House of Commons is not so dead to the importance of public safety as to pass any such clause. The danger consists in this, that it may be forced upon us in some modified form, which makes some show of regard for public safety but none whatever for vested interests. I do not for one moment consider that the public safety can be provided for unless the Pharmacy Act is administered in spirit and letter as it stands now, but in the present insane hunt for dividends the House of Commons may be prepared to take a modified view of what is necessary for public safety. It is by those high in legal circles that the law has been strained to cover these companies all along. In the original case of the London and Provincial Supply Association, Ltd., the decision in the lower courts was given according to common sense and good law. It was only when this case was taken to the Upper House that a decision was arrived at which was neither according to letter or spirit of the Pharmacy Act, or according to common sense, good law, or justice. If any of your readers care to look up the *Westminster Budget* for February 1, 1895, they will there find it stated that a judge was removed from one Court and placed in another. The *Law Journal* and the London *Times* both agreed that this removal was the result of too faithful and fearless dealing with public companies on the part of the judge in question. It is only fair to say that this occurred before the present Lord Chancellor's period of office. If judges have been treated in this way for fearless dealing in the matter of public companies, what can we expect in the Law Courts? Even if this clause passes only in a modified form, it will become impossible to maintain the present high level of the pharmaceutical examinations, and a ten-guinea fee will be out of the question. You cannot go on narrowing the gate to pharmacy and at the same time keep owering the fence around the pharmaceutical field.

I have been accused many times of viewing this subject only from the chemist's standpoint, whereas it must be viewed from the public standpoint. To argue in this way is to keep on runing round a post. The public interests and the chemist's interests are synonymous. It is in the public interest that qualification is demanded. The man who needs to be assured that it is in the interests of the public that the dispensing of medicine and the dealing in poisons should be confined to qualified men had better go home and pray for brains before he meddles with politics. All that was settled, happily by men with some brains, over thirty years ago.

It is so clear to me that qualification is absolutely necessary for public safety, and that, when powers are granted to unqualified men which ought only to be granted to qualified men, the public safety is imperilled, that I do not care to keep on repeating so plain a fact. It is so clear to me that by placing a qualified man in a position subordinate to an unqualified man you leave no sense of responsibility anywhere, that if there are men in the world so stupid as not to see this for themselves it is not worth anyone's while to waste time in trying to teach them anything. It is also as clear as a hole in a ladder to me that this whole position brings other evils upon the public besides the risk of actual poisoning. These companies have not only prevented the practice of pharmacy from rising to that position of usefulness to which qualified men desire to see the occupation elevated, but they have trailed the whole profession in the mud and introduced an all-round system of quackery and cheap-jackism, which is, in my opinion, becoming absolutely detrimental to the health of the people. We wish to see pharmacy discharging faithfully her duties as the hand-maiden of medicine, but these men have prostituted her to the detestable service of pouring quack medicines down people's throats. I trust that every qualified man will retain a grave sense of his duty to the public, of his professional dignity, and all that they imply. I trust that we will all labour during our short time to elevate in every way the profession which we have elected to serve, and, above all, I trust that the Pharmaceutical Council will give us a good lead off in our opposition to the immoral suggestion embodied in this Bill.

Dumfries, June 5, 1899. JAMES REID.

"Justicia" (189/13) also writes on this subject, but we are unable to publish his letter, as he does not authenticate it by enclosing his name and address.

The Poison Regulations.

Sir,—In the exuberance of his learning "Pondo" hurls quotations at us in his letter published last week. Might one, without impertinence, ask for the references? I have consulted the Bible, Job xii., 2 (both A. and R.V.), and Shakespeare (Julius Cæsar, i., 2), where I find similar sentiments somewhat better expressed. I cannot make "*facilis averni decensus*" scan, like Virgil's *facilis descensus Averno*, Æneid, vi., 126. When David threw his arguments at the giant's head I read that he chose "*smooth* stones," which indicates, as I take it, that he verified his quotations, to the great increase of their penetrative force.

June 15, 1899. MENSURA (189/3).

The Present Position of Pharmacy.

Sir,—That "there is a tide in the affairs of men" is an axiom equally applicable to the affairs of the individual, of a state, or of a society. This tide seems now to have arisen in the affairs of pharmacy—to have reached a crisis, and it will require the most astute diplomacy to take it "at the flood"; for has not the Lord Chancellor himself declared on the side of company trading, to the detriment of the already depressed thousands who depend for their daily bread on unceasing toil, attended with anxieties and responsibilities altogether unknown to any other craftsmen? It appears to me, as the result of long experience and extended observation, that nothing short of a comprehensive system of legislation can avert the impending catastrophe. If Government can be induced to intervene, it must be made obvious to that omnipotent body that the Exchequer would derive a benefit. It is a fact that a large revenue accrues from the sale of licences—from the highest professions to the lowliest of occupations which do not reach the position of trades. All these are protected from the smallest encroachment on their rights. Now, although these subjects of Her Majesty do not in the main exercise any dangerous calling, they feel safe under the protection of law. The anoma y exists that any number of this incongruous multitude are privileged to unite, form a company, and by subsidising some needy man with a modified qualification, to invade and destroy the

legitimate inheritors of pharmacy whose labours have been directed to the advancement of pharmaceutical science. Why, then, in the name of justice should we be deprived of such protection as is accorded to the publican or the cabdriver? I would beg to suggest a conference of chemists and druggists be called to discuss this question.

June 5, 1899. PREMONITUS (189/6).

The Delivery of the Journal.

Sir,—It seems quite useless writing to the *Pharmaceutical Journal* publishers with reference to the annoying uncertainty about it reaching me. I have written three times during the last month, but with little effect, for I have not yet received last week's issue. I wrote them this day week, asking them to forward me two copies which were overdue, and reminding them to send last week's on the Thursday in order that I might get it at the proper time. The long-delayed ones arrived, but apparently it was too much to expect the one I most wished to see. I should be very glad if you would call the attention of some responsible individual to this matter, as I cannot be writing every week about it, and it seems strange that my name should be missing week after week from the list of those to whom it should be regularly sent.

Manchester, June 7, 1899. E. H. SIMMONS.

*** In reply to an inquiry made into this complaint, there appears to be some misunderstanding, which it is hoped to clear up shortly.—[ED. *P. J.*]

ANSWERS TO QUERIES.

Phosphorus Bronze (W. S. 29/19).—Apply to Messrs. Charles Gross and Co., 9, Mincing Lane, London, E.C.

Sale of Chlorodyne (C. H. W.—29/11).—(1) The sale of all preparations of prussic acid must be recorded. (2) Yes.

Legal (G. A.—29/20).—We fear you have no remedy in the matter, as you do not hold a lease of the premises, but it might be worth your while to consult a solicitor.

Insect in Wheat (H. W. G.—29/29).—It is apparently a species of thrips, belonging to the typical genus of the family Thripidæ or Thripsidæ.

Botanical (J. H. T. B.—29/28).—Probably *Paulownia imperialis* (Scrophulariaceæ), a native of Japan, but we cannot say with certainty without seeing a leaf.

Glossary of Medical Terms (J. F. T.—29/26).—Buck's 'Medical Lexicon' (Baillière, Tindall and Cox), published at 3*s.* net, is a very useful little book.

Sale of Arsenical Fly-papers (C. H. W.—29/10).—(1) One maker supplies the papers in packets containing six, and many chemists now refuse to sell less than that number at once. (2) Yes.

Renewal of Trade Mark (J. F. T.—29/26).—The renewal fee of twenty shillings must be paid every fourteen years. Write to the Comptroller of Stamps, Somerset House, London, for particulars.

Mistura Olei Morrhuæ c. Ferro (W. H.—29/22).—The Middlesex Hospital formula for this preparation, which seems to be what you require, is—cod-liver oil, ½ oz.; iron wine, 1 oz; oil of cassia, 2 mins.; mucilage, 2 drms. Dose: 1 drm.

Prescription Envelope (A. E. B.—29/21).—No individual is entitled to use the Pharmaceutical Society's coat of arms, but no objection is likely to be taken if you, a member of the Society, make use of the design on the envelope submitted.

Aconite Preparations (W. B. W.—30/1).—If the homœopathic dilutions referred to are in reality "preparations" of aconite, they must be treated in accordance with part 1 of the list of poisons within the meaning of the Pharmacy Act, 1868.

Metol and Quinone Developer (E. J.—29/27).—See reply to S. J. E. in the Journal for May 13 last.

Lassar's Paste (A. H. B.—30/3).—There are several pastes associated with Lassar's name. That for eczema consists of: zinc oxide, 24; starch, 24; salicylic acid, 2; soft paraffin, 50.

Moustache Invigorator (R. E.—29/33).—This is best applied in the form of a pomade, as the liquid form is more likely to cause blistering. Cantharides ointment, 1 oz.; prepared lard, 40 ozs.; jasmin pomade, 10 ozs.; pilocarpine nitrate, 5 grains.

To Remove Stains of Annatto (J. B. S.—30/2).—Probably the cautious application of a little freshly-prepared solution of chlorinated soda will be the best thing, but that will very likely affect the colour of the blouse as well; if so, the colour must be restored by the careful use of a little dye.

French Prescription (W. A. J.—29/30).—*Ammonia 22° B.* is a solution containing nearly 21 per cent. of ammonia, and therefore about double the strength of solution of ammonia, B.P.; *alcool camphré* is a solution of camphor, 1, in 90 per cent. alcohol, 9, or practically identical with spiritus camphoræ, B.P.; *sel de cuisine* is obviously neither more nor less than table salt.

Sale of Methylated Liniments (T. E. P.—29/16).—There is no more reason why you should require a methylated spirit licence to entitle you to sell the four B.P. liniments which you are permitted to make with methylated spirit, than that you should require an ordinary spirit licence to entitle you to sell the same liniments made with rectified spirit.

Anti-Asthmatic Powder (A. E. H.—29/31).—Martindale gives the following formula: Potassium nitrate, lobelia, stramonium leaves, and black tea, each 240. Dissolve the potassium nitrate in boiling distilled water, 240, then add the other ingredients in powder form. Mix well, dry, and add anise oil, 1. Or, you may mix the four powders straightway, and add powdered anise and fennel, each 30.

M.D. Degree (A. A. W.—29,32).—The degree is granted by the Universities of London, Oxford, Cambridge, Durham, etc., after the completion of a full curriculum and passing various examinations. In your case the Victoria University or the University of London would probably be the most convenient one at which to take the degree. Write to the Registrar, Victoria University, Manchester, or the Registrar, University of London, Burlington Gardens, W., for particulars of the examinations.

Book on Analysis of China Clays (R. S.—29/17).—We know of no work devoted solely to clay analysis. You will find a concise account of the methods, etc., in Thorpe's 'Quantitative Chemical Analysis,' pp. 181-185, and also on p. 157 of G. R. Redgrove's 'Calcareous Cements.' Probably by referring to past volumes of the *Journal of the Society of Chemical Industry* you will find information that will be of use to you.

Fixed Focus Lens (J. W. P.—29/24).—Any lens can be used as a fixed focus lens, and the rule to find the distances of the nearest points in focus with any aperture is:—Multiply 2·7 by the square of the focal length and by the fraction expressing the diaphragm aperture. Example: Required the nearest point in focus with a lens of 6 in. focus with 2/11 diaphragm.

$$2{\cdot}7 \times (6^2) \times \tfrac{1}{11} = 8{\cdot}8 \text{ yards.}$$

Strength 1 in 100 (W. B. W.—30/1).—What the prescriber probably means by "1 in 100" is 1 oz (480 grs.) in 100 fl. ozs., 1 dr. (60 grs.) in 100 fl. drs., or 1 grain in 100 minims. If, however, a "1 per cent." solution had been ordered, it would have been more in accordance with modern practice to dissolve 1 grain in 100 grain-measures. A fluid ounce of the finished solution would then contain approximately 4½ grains of the salt, whereas 1 grain in 100 minims would correspond to nearly 5 grains in the fluid ounce. A strictly "1 per cent." solution should contain 1 grain in 100 grains, but that is rarely intended by prescribers.

Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

ROYAL 19 JUN 99

Commercial Analysis of Ginger.

E. G. Clayton has examined some thirty-seven samples of commercial ginger in order to determine the following points:—(1) The presence of spent ginger in the samples; (2) the effect of the washing process on the composition of ginger; (3) the influence on the analytical figures of the grinding process, with removal of the fibre, as well as the effect of the cutting and scraping of the surface of the rhizome, an operation having for its object the improvement of the appearance; (4) comparison of samples of different geographical origin, and in various conditions, as whole, ground, washed, or otherwise; and (5) comparison of the figures yielded by different market qualities (as indicated by prices) of the same variety of ginger. The samples included the following varieties: Jamaica, Cochin, Bengal, Japan, African, and were in various conditions—whole, ground, washed, unwashed, spent, scraped, and cut. The analysis included the determination of the soluble and insoluble ash; the extracts dissolved by cold water, ether, absolute alcohol (after complete extraction with ether), and petroleum spirit; essential oil; alkalinity, calculated as potash, and chlorine, in the soluble ash; and, in some cases, the ash, alkalinity of the ash, and chlorine, in the aqueous extract. The published tables bring out many valuable points. In determining the moisture many samples after prolonged drying begin to gain weight, owing probably to oxidation. The effect of washing is to diminish the percentages of some of the constituents, such as the ash, soluble ash, and cold aqueous extract. A similar influence appears to be exerted by grinding, removal of fibre and the operations of cutting and scraping the surface of the rhizome. The combined effect of all these commercial processes does not so reduce the ginger as to make it approximate to spent ginger in value, at all events in the Cochin variety. This point has not yet been fully ascertained in regard to Japan ginger. The examination of four different market qualities of Cochin ginger leads to the remarkable conclusion that the proportions of the principal constituents diminish as the price increases. Hence the question arises whether the real quality of a sample may not sometimes be sacrificed to mere appearance—whiteness, and so forth. The prices paid for these samples were ninety, fifty, forty, and twenty-eight shillings per hundredweight.—*Analyst*, **24**, 122.

Microbes of Flowers.

It would appear that even flowers may be the source of bacterial infection, since Domingos Freire finds that the anthers and stigmas of several species give, on cultivation in suitable media, growths which are identical with, or closely resemble, those of well-known pathogenic bacteria. *Hibiscus rosa sinensis* gave, in various media, a growth of a new species of micrococcus, to which the name *Micrococcus cruciformis* has been given. The cultivated rose (Rothschild) afforded colonies of *Leptothrix ochracea* of Kutzing. This leptothrix is also found in stagnant water. *Rosa gallica* gave growths resembling *Streptococcus pyogenes* of Rosenbach, for which the name *Bacillus gallicus* has been proposed. From *Ipomœa guamoclit* two species were obtained, one having the characters of *Micrococcus salivarius pyogenes* of Biondi, and the other resembling *Spirillum plicatile*. This spirillum is stated to give rise to intermittent fevers. From peach flowers *B. pyocyaneus* was obtained. It would appear that there may be some connection between the colours of flowers and the bacteria found in them. Thus the blush rose tint of the Rothschild rose is reproduced in plate cultures of the Leptothrix obtained from it, before the brick-red tint appears; and the bright yellow colour of colonies of *Micrococcus cruciformis* closely resembles that of the Hibiscus flower from which it is derived. Further, several species of microbes, termed Osmogens, reproduce the odours of the flowers in which they are found.—*Comptes rendus*, **128**, 1047.

Lignaloe Wood.

As the result of an investigation of lignaloe wood, J. Moeller states that there are two varieties, one derived from a species of *Aquillaria* and the other from a *Gonostylus*. Generally the wood of *Aquillaria* is soft, while that of *Gonostylus* is very hard. The latter does not show intra-axillary phloem bundles, which are a characteristic feature of *Aquillaria*. The identity of even small fragments can therefore safely be determined by microscopical examination. Spurious lignaloe wood is of various origin. The author found some to consist of Leguminous and Apocynaceous wood, but never of *Excoecaria*, *Ficus*, *Dalbergia*, or *Juniperus*, as is commonly supposed. Resinous woods of every kind appear to be introduced as lignaloe. In Bombay, the Lauraceous "Taggar" is substituted for lignaloe and in Bangok, white sandal wood.—*Pharm. Centralh.*, **40**, 153, after *Pharm. Post.*

Boric Acid in Milk.

L. de Koningh gives a method for the detection of boric acid in milk, whereby the loss of acid consequent on the incineration of a large quantity of fatty organic matter is avoided. Place 100 cubic centimetres of milk in a beaker covered with a dish of water. Heat rapidly to the boiling point, then add 8 cubic centimetres of 1 in 50 nitric acid. Strain, when cold, through muslin and collect 80 cubic centimetres of the liquid, which need not be absolutely clear. Add one eighth of a gramme of sodium carbonate, evaporate rapidly in a platinum dish, and finally burn to a grey ash. The nitrate assist in the burning, without causing deflagration. The water-soluble portion of the ash is then tested for boric acid by one of the numerous methods. If the fluoride process be employed, potassium carbonate is better than the sodium salt. The aqueous solution of the ash can be practically freed from phosphoric acid by a slight modification. Before adding the sodium carbonate, add to the hot solution two drops of a saturated solution of calcium chloride and then a little ammonia. When cold separate the calcium phosphate by filtration, hastening the process by means of a filter-pump.—*Analyst*, **24**, 145.

New Primary Battery.

A useful primary battery for open circuit work is that known as the Harrison cell. It has a high electro-motive force and a larger current discharge in proportion to its size than is usual in open circuit batteries. A square glass jar—3 × 3 × 5—is employed, such as is used for Leclanche cells, but it should, if possible, have a somewhat bell-shaped mouth. This is paraffined, and on it rests a wooden cover, which holds the elements in suspension below, and has two binding screws on top. One of the elements consists of a long cylinder of lead peroxide, about an inch in diameter, which is encircled by two rubber bands to prevent accidental contact with the other elements—a two-inch cylinder of zinc, one inch in diameter, and coated with mercury. The exciting fluid is dilute sulphuric acid, and a cell of the dimensions stated is said to give 2·45 volts and 40 ampere hours, the electrical energy being thus produced at a very economical rate.—*Scient. Amer.*, **80**, 359.

Gluten of Wheat.

The observation by Taddey that wheat gluten kneaded with alcohol was separated into a soluble portion, which he named gliadin or vegetable gelatin, and an insoluble portion, which he named zymom, was the first indication that gluten is a mixture of different proteids. Subsequent investigators, adopting the same method of treatment, with the difference that they heated the alcohol to boiling, obtained, besides the soluble proteid, an insoluble product, which was called by Liebig vegetable fibrin, and by Berzelius coagulated albumin. Dumas and Cahours obtained a third product, which separated from the boiled alcoholic solution on cooling, and was considered by them to be casein; and de Saussure lastly distinguished a fourth substance, which remained in solution as mucin after gliadin was separated. Ritthausen's investigations also pointed to the existence of four proteid substances in wheat gluten—viz., (1) gliadin, (2) gluten fibrin, (3) mucedin, and (4) gluten casein. Osborne and Voorheer were unable to identify gluten fibrin or mucedin, and inferred that gluten consists of only two proteids – gliadin, soluble in alcohol, and insoluble gluten casein, for which they proposed the name of glutenin, so that five names have been applied to this constituent of gluten, viz, gluten casein (Ritthausen), glutenin (Osborne), vegetable fibrin (Liebig), coagulated albumin (Berzelius), and zymom (Taddey). Osborne's results were confirmed by Fleurent and also by Kjeldahl, who found that the proteid soluble in alcohol had a constant rotary power, and therefore inferred that it must be homogeneous. Further investigation has, however, led Ritthausen to conclude that gluten contains constituents having a higher amount of carbon and less nitrogen than gliadin, though he did not succeed in separating them. Lastly, in reference to the opinion of Morishima, that gluten consists of a single proteid substance, to which he gives the name artolin, Ritthausen suggests that this substance may be only gluten casein or glutenin, or vegetable fibrin combined with hydrochloric acid, as the result of the mode of preparation adopted by Morishima.—*Journ. f. Prakt. Chem.*, 59, 474.

The Red Cell-sap of Plants.

By cultivating the frog-bit, *Hydrocharis morsus-ranæ*, in a weak solution of sugar, E. Overton found that the leaves assume a rich reddish-brown tint. The same is the case with *Utricularia*, and with some land plants, as *Lilium martagon*, *candidum*, and *umbelliferum*, *Saxifraga crassifolia*, and the holly. This appearance of a red cell-sap is in most plants dependent on the amount of sugar in the sap; its formation is greatly favoured by a low temperature. The red colour of autumn leaves is, in many cases, due to the increase in the amount of sugar and the decrease in that of starch. The red sap is formed either in the epiderm or in the palisade-cells of the leaf. The author thinks it probable that the pigments are of the nature of glucosides; in most cases compounds of tannins with sugar. In many plants they can be produced at any time of the year by feeding them with glucose.—*Pringsheim's Jahrbuch*, 33, 1899, p. 171.

Primary Synthesis of Proteids in Plants.

According to M. W. M. Kozlowski a large part, if not the whole, of the oxalic acid produced in plants is a final product of the decomposition of proteids, and is analogous, to a certain extent, to carbamide in animals. It appears to be always a product of excretion. There is a strong analogy between the production of cellulose in plants and that of fat in animals. The cellulose and the carbohydrates consumed in respiration, in combination with amides, produce new proteids.—*Bull. Torrey Bot. Club*, 1899, p. 35.

QUACKS AND QUACKERY.

BY "PHARMACIST."

Honour a physician with the honour due unto him for the uses which ye may have of him; for the Lord hath created him. For of the most High cometh healing, and he shall receive honour of the King. The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration. The Lord hath created medicines out of the earth, and he that is wise will not abhor them . . . . with such doth he heal men and taketh away their pains. Of such doth the apothecary make a confection, and from him is peace over all the earth.

It was just by accident I discovered the above not inapt text with which to trounce the quacks. It is St. Luke's (he was a physician) even-song in the Prayer Book, and as the House of Commons has issued the mandamus that the Prayer Book's behests must be obeyed, I hope that everyone, ritualists included, will join to honour the physician who diagnoses and the apothecary who "makes the confection." Behold here the pre-eminence conferred upon the pharmacist! The physician simply relieves pain, but the apothecary gives "peace over all the earth." The Pax Brittanica, no doubt. It is evident from these words that medicine and pharmacy are held sacred from the intermeddlings of unregistered heretics. There is but one other reference in the Scriptures—that which relates to the case of hæmorrhage which the Rabbinical quacks made "worse."

The following is their remedy for hæmorrhage:—

Take of:—
(1) Gum Alexandria .....
Alum.....
Crocus Hortensis ..... } q. s.
Macerate in wine and drink.

If this fail

(2) Boil nine logs of Persian onions in wine. Drink.

If this fail

(3) Set the patient at a cross-road, holding a cup of wine, and frighten in some way.

If this fail

Take of:—
(4) Cummin .....
Crocus ..... } q. s.
Fœnu-Grœk .....
Boil in water and drink.

If this fail

(5) Dig seven trenches, in which burn young vines, lead the patient, holding a cup of wine, through each trench, and, should this fail, then toss the patient on a hay-fork, and massage with a fifty-ton rock.

Good old Rabbis; good old horse-doctors!

When Carlyle said he honoured only two men—the farmer and the pastor, he either did not read or obey his Prayer-Book. Let each profession keep to its own tools. The priest (because he has much to do with the sick) has throughout the ages blindly concluded to administer drugs with his doctrine. It is so to this day, and it is a vicious conjunction.

There is a circular issued by an individual who was lately in the bankruptcy court. It appeals for a trial of his epileptic cure on the solemn asseveration of twenty-five gentlemen that it is all he claims for it. Now, what is the fact?

Eighteen of the witnesses are clergymen! Now the vast bulk of ministers are absurdly credulous, the remainder surpassing the serpent in worldly wisdom (witness the vicar who "did" Barney Barnato). Clergymen—with few exceptions—are, outside their own province, useless as mentors. It is out of respect to their cloth and principles that I adjure them not to append their names to such statements, and especially those "which are of a stunning and owdacious sort," which purport to be the latest interview of "my commissioner" with a "Welsh minister."

And the pills! surely since Jacob pilled rods for purposes of amassing ring-straked ewes there never was such pilling and such deception; such swindlers would have been pilloried by our forefathers.

I do not know about that either, for judging by De Foe's journal of the plague in London in 1665, the same infatuation was rife, though there was more excuse for it then than now:—

"They were mad; running after quacks and mountebanks, and every practising old woman for medicines and remedies, storing themselves with such multitudes of pills, potions and preservatives, as they were called, that they not only spent their money, but even poisoned themselves beforehand, for fear of the poison of the infection, and prepared their bodies for the plague instead of preserving them against it. On the other hand, it is incredible and scarce to be imagined how the posts of houses and corners of streets were plastered over with doctors' bills and papers of ignorant fellows; quacking and tampering in physic and inviting the people to come to them for remedies which was generally set off with such flourishes as these:—

Infallible preventive pills against the plague.
Never-failing preservatives. Soveraign Cordials.
Exact regulations and Anti-pestilential pills.
Incomparable drink never found out before.
An Universal Remedy. The Only-True plague water.
The Royal Antidote against all Kinds of Infection, etc., etc.

"Others set up bills to summons people to their lodgings for directions and advice. These had spacious titles, as follows:—

An eminent High-Dutch Physician, newly come over from Holland, where he resided during all the time of the great plague last year in Amsterdam, and cured multitudes of people that actually had the plague upon them.

An Italian gentlewoman just arrived from Naples with a choice secret, found out by her great experience, and did wonderful cures with it in the late plague, wherein there died 20,000 in one day.

An antient gentlewoman having practised with great success in the late plague gives her advice only to the female sex.

An experienced physician who has long studied the doctrine of antidotes against all sorts of poison and infection has arrived at such skill as may with God's blessing direct persons how to escape the Contagious Distemper. He directs the poor gratis. (This, being a 'religious' quack, was necessarily an abandoned reprobate. There is a specimen extant, his name and habitat is in another place.)

"These are sufficient to apprise anyone of the humour of those times, and how a set of thieves and pickpockets not only robbed and cheated the poor people of their money, but poisoned their bodies with odious and fatal preparations, some with mercury and some with other things as bad, perfectly remote from the thing pretended to, and rather hurtful than serviceable in case of infection."

"A subtlety of one of these quack-operators with which he gulled the poor people, but did nothing for them without money was to advertise in capital letters—

He gives advice to the poor for nothing.

"Abundance of poor people came to him. He examined the state of their health, etc., but the issue and conclusion of all was that he had a preparation, which, if they took such a quantity of, he would pawn his life they should never have the plague. . . . . There is no doubt but these quacking sort of fellows raised great gains out of the miserable people, for we daily found that they were more sought after than Drs. Brooks, Upton, Hodges, Berwick, though the most famous men of their time, and I was told some of them got £5 a day by their physic."

"In these circumstances the College of Physicians were ordered to publish directions for cheap remedies for the poor. This drove the people from haunting the doors of every disperser of bills and from taking down blindly poison for physic and death instead of life." This is a hint to Her Majesty's advisers.

"Abundance of quacks died who had the folly to trust to their own medicines, which they must have known were good for nothing. . . . Indeed, I observed with wonder that for two years after the plague not one of them was seen about the town. Some fancied they were all swept away in the infection to a man, and were for calling it a particular mark of God's vengeance upon them for leading the poor people into destruction merely for the lucre of money." It would hardly be in human nature not to feel a sort of gratification at this sequel, even at this late date. Let us hope that history will repeat itself in our own day, and in such a marked manner as to leave no doubt as to the particular malfaisance.

Continental medicos of the thirteenth and fourteenth century live again in Charles Reade's 'Cloister and Hearth.' Enter leech:—

"Well, it is an ill business. However, shalt have a good biting cataplasm for thy leg, meantime keep we thy body cool, put out thy tongue. Good! Fever. Let me feel thy pulse. Good! Fever. I ordain flebotomy, and on the instant."

"The man of art then explained that in disease the blood becomes hot and distempered and more or less poisonous, but a portion of this unhealthy liquid removed, Nature is fain to create a purer liquid to fill its place. Bleeding, therefore, being both a cooler and purifier, was a specific in all diseases, for all diseases were febrile, whatever empirics might say."

"But think not," said he, warmly, "that it suffices to bleed, any paltry barber can open a vein. The art is to know what vein to empty for what disease. T'other day they brought me one tormented with the earache. I let him blood in the right thigh, and away flew his earache. By the bye, he has died since then. Another came with the toothache. I bled him behind the ear and relieved him in a jiffy. He is also dead since, as it happens. I bled our bailiff between the thumb and forefinger for rheumatism. Presently he comes to me with a headache and drumming in his ears, and holds out his hand over the basin. I smiled at his folly and bled him in the left ankle, and made his head as light as a nut."

Fielding gives in 'Joseph Andrews' a glimpse of the vacuous pretensions of physicians during the first half of the eighteenth century, which recalls Lord Macaulay's statement that he would rather trust himself to the skill of a village apothecary of his own day than the successful physician of a large town in Queen Anne's reign. To open a vein, apply cautery and cataplasm, and oracularise in pedantic polysyllables seems to have been the practical parts of their art.

To the gentleman who asks after the patient, the surgeon, after expatiating upon his own ability, thus replies: "His case is that of a dead man. The contusion on his head has perforated the internal membrane of the occiput and divellicated that radical small minute invisible nerve which coheres to the pericranium, and this was attended by a fever at first symptomatic, then pneumatic, and he is at length grown deliruus, or delirious, as the vulgar express it." The brief and simple language of the modern medical man in similar cases is in striking contrast.

In America writers have in vain expended the resources of their sarcasm and humour to pour contempt on quacks and quackery.

Max Adeler chronicles the history of the "Patent Health Lift," the use of which (being worked in the consulting-room) cured toothache and all the intervening ills up to beri-beri and the bubonic plague, and pumped fifty gallons of much-needed water into the cistern per man. The profits were enormous, and the quack increased the size of the tank. One day the secret came out and he fled.

Some time ago there was photographed into the *Review of Reviews* the front page of the *New York Journal*. One portion of a column represented a cheerful-looking man who was exclaiming, "I am as sound as a dollar. Some months ago two pieces of diseased bone came away from my arm. . . . I took Dash's recipe, and my arm is now well and strong." Up to the present I do not know whether it was a *bonâ-fide* advertisement or a pleasantry.

Somewhat similar is Mr. George Sims's "Tatcho." Everyone

will remember when this appeared first, a gentleman as bald as pen and ink could make him, with the exception of one single hair over the apex of the cranium. Before using he says, "My hair was short and stubby"; after using, "It is now long and curly." Whether "Dagonet" is in earnest or whether he is indirectly attacking the glossed and glaring wording of modern testimonials might be disputed.

The following excerpt from George Eliot's works gives the main contentions *pro* and *con.* of the quack cure-all fad :—

Mrs. Holt loquitur: "And so I have done, Mr. Lyon, and to say the Elixir, the Pills and Cure are not good medicines, when they've been taken for fifty miles round, by high and low and rich and poor, and nobody speaking against 'em but Dr. Lukin, it seems a flying in the face of Heaven, for if it was wrong to take the medicines, couldn't the blessed Lord have stopped it? And if he writes to the *North Loamshire Herald* to tell everybody they're good for nothing, how can I ever keep myself?"

Felix Holt: Those absurd medicines and gulling advertisements I've no more doubt about them than about pocket-picking.

Rev. Mr. Lion: "They have been well-reported of, and many wise persons have tried remedies providentially discovered by those who were not regular physicians—notably the eminent Mr. Wesley—and have found a blessing in them."

[N.B.—Rev. John Wesley distributed his remedies gratis.]

Felix: "I was 'prentice to a country apothecary for five years, and I know that the Cathartic Pills are a drastic compound, bad as poison to half the people who swallow them. The Elixir is an absurd farrago of a dozen incompatible things, and the cancer cure might as well be bottled ditch-water."

Thackeray expresses his disgust, in 'Vanity Fair,' of this nauseous mixture of physic and piety. The Countess of Southdown (in some degrec representative of Countess Huntingdon) orders "Gaffer Jones to be converted and Goody Hicks to take a James's Powder." No one "leaves her house without carrying away piles of her quack theology and medicine." She stigmatises Dr. Creamer as a "dangerous and ignorant practitioner. I have providentially been the means of removing him from several houses. I could not save poor dear General Glanders, who was dying under the hands of that ignorant man. He rallied a little under the Podger's pills I administered—but alas! it was too late."

Now, whilst something may be allowed in extenuation of lay practitioners in those days when Europe was a battleground, and in consequence bachelors and doctors of medicine, being solely engaged in amputating limbs and using pitch as a styptic, were denied time to pursue inquiries into the subtleties and niceties of their art, yet is it not monstrous that to-day, with all our scientific discoveries, the nation should be victimised by the most arrant quackery? The best journals in England—monthlies, weeklies, and dailies, apparently without the least discrimination—publish in their advertising columns the most abandoned and shameless falsehoods. The great national movement under the auspices of H.R.H. the Prince of Wales, and promoted by Sir Wm. MacCormac, Sir Wm. Broadbent, and the highest minds in the medical profession, to establish consumption sanatoriums throughout the three kingdoms, in order to grapple with that fell disease, reminds us that consumption is incurable by drugs, and no doctor (or pharmacist) ever recommends or gives drugs in a case of genuine consumption. Anyone who does guarantee drugs (and some of the worst at that, madc Heaven knows how) to cure consumption is a fraud, and his soul will undoubtedly be cauterised in Hades, and of the papers who aid and abet this fraudulent quackery the religious weeklics appear greatly to blame, and they sin wilfully or guilelessly. If it is innocence, then virtue is indeed rewarded, for I estimate roughly that one religious weekly makes £50 or thereabouts each week by its "medical" advertisements. This represents over £2000 per annum.

But it is through such vehicles that the wares of Messrs. Holleraway, Mother She-gulls, Be a Sham, Guy Fox, Hoodwink and another (whose sole merit is all-iteration and "damnable iteration" too, as Shakespeare saith) are made purchasable.

Great Thoughts shows how great the human intellect is by printing patent drug advertisements which for breadth and scope of statement are beyond everything. As usual, there is a nostrum for a certain class of ailments which had much better be left to the skilled practitioner.

The Church periodicals are no better. Take the *Wesleyan M.S.S. Magazine* for March; upon inside of cover will be found in leaded type, "Theory of the Flaming Sword." Now what does the mind of the reader immediately recall? The expulsion from the Garden of Eden, but the entire page is devoted to a eulogy of a certain syrup.

(*To be continued.*)

AUSTRALIAN INDIGENOUS VEGETABLE DRUGS.*

BY J. H. MAIDEN,

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(Corresponding Member of the Pharmaceutical Society of Great Britain.)

PART I.

(*Continued from page 488.*)

RUTACEÆ.

Evodia.

The bark of *Evodia meliæfolia* is used for dyeing and also in medicine in China and Japan. Perkin and Hummel ('Proc. Chem. Soc.,' 67, 414) have investigated the colouring-matter, and considering the large number of *Evodias* which occur in this Colony and Queensland it seems appropriate to suggest that an Australian chemist should subject them to careful examination.

Geijera salicifolia, Schott. — "Balsam of Copaiba Tree," "Wilga."

The bark contains a powerful bitter, and has the odour of the drug from which it obtains one of its vernacular names.

Dr. Thomas Bancroft, of Brisbane, informs me that it is physiologically inert, or practically so.

New South Wales and Queensland.

Melicope erythrococca, Benth.

Mr. H. Tryon discovered that the bark of this tree has a pronounced tingling taste, and anticipating that it might contain a poison, gave me a sample of it. The physiological action upon frogs is not unlike that of the allied genus, *Xanthoxylum*. The active principle might be described as a protoplasmic poison, for it appears to destroy every part of the animal economy. Frogs under the influence of it spring about in an excited manner, become bathed with secretion, and in a few minutes lie paralysed. The primary cause of death is paralysis of the spinal cord. The heart stops in diastole. Fibrillary twitchings of the muscles continue for a long time after death. (T. L. Bancroft, in 'Proc. Roy. Soc., Qd.," 8.)

Coastal New South Wales and Queensland.

Murraya exotica, Kœn.

This plant contains a glucoside, murrayin, which crystallises in fine needles. Dilute sulphuric acid converts it into murrayetin and glucose. I am not aware that either of these bodies has been experimented with by physiologists. (See Sohn, p. 19.)

Queensland.

* From the *Agricultural Gazette* of New South Wales.

Pagetia medicinalis, F. v. M.

The oil of the leaves is supposed to be of medicinal value. (Bailey.) Queensland.

Xanthoxylum veneficum, Bailey.

The bark possesses a peculiar tingling, hot taste, like aconite. Numerous experiments were made with extract of the bark upon dogs, cats, rats, frogs, and grasshoppers. It acts upon the spinal cord, increasing the reflex excitability, and finally paralysing the cord. It poisons grasshoppers, while strychnine has no action upon them. It paralyses without tetanising frogs, even when applied to the skin. In its physiological action it resembles strychnine. The following may be taken as a typical example of the effect of this substance upon warm-blooded animals :—

Four grains of the alcoholic extract suspended in 5 minims of water and 5 of spirit were injected under the skin of a large cat. Immediately afterwards the cat was uneasy, would lie down, then raise itself, walk a little, and lie down again. In eighteen minutes a tremor of the head and ears was noticed, the pupils were dilated, locomotion was affected; the animal could only walk a yard or so, in a stiff, awkward way. In twenty minutes the tremors were frequent, and power to walk almost gone. In thirty minutes there were convulsive contractions of the fore-limbs and muscles of the chest; a strong light would not alter the iris. In thirty-three minutes the lips were livid, and tetanic convulsions commenced; during one of these attacks the respiration very laboured, inspiration stertorous, the head hangs down, and the cat jerks itself backwards; directly after, the spasm goes off, the cat lies down exhausted. In forty-five minutes there was a tetanic spasm every minute, and the animal was expected to die every convulsion. In fifty-five minutes tetanic spasms last about a quarter of a minute; inspiration extremely laboured and prolonged, with wheezing. At times no air can be inspired, and the chest becomes collapsed. In sixty minutes the cat jumped and fought for breath in a frightful way, and died. The heart could be felt to beat regularly for two minutes afterwards. Four hours after death there was *rigor mortis*, the right side of the heart was empty, and the left ventricle firmly contracted; the intestine was bloodless and contracted.

With larger doses than 5 grains tetanic spasms come on rapidly, and the animals die in a few minutes. Large dogs recover sometimes after 5 grains have been injected under the skin. (Dr. T. L. Bancroft, in 'Proc. R. S. N.S.W.,' 1886, p. 70, and 'Trans. Intercol. Med Congress,' Melbourne, 1890).

X. senegalense, D.C., of Africa, furnishes the artar-root of commerce. P. Giacosa has found in this substance an alkaloid called artarine, which forms a rose-grey amorphous powder. (See Sohn, p. 103.)

Coastal Queensland.

MELIACEÆ.

Cedrela toona, Roxb. (Syn. *C. australis*, F. v. M.)—"Red Cedar."

This tree is also a native of India, and its bark has been found valuable in fevers, dysentery, etc. ('Treasury of Botany.') It is astringent, and in India has been considered a reliable antiperiodic, and by Dr. Newton a good substitute for cinchona. ('Pharm. of India.') The flowers are considered emmenagogue. (Dymock.)

New South Wales and Queensland.

Melia Azedarach, Linn. (Syn. *M. composita*, Willd.)—"White Cedar."

The Hindoos use the flowers, fruit, leaves, and bark for many medical purposes. The root bark is on the secondary list of the United States Pharmacopœia as an anthelmintic. In large doses it is said to produce narcotic effects, though these, if produced, pass off without injury to the system.

On October 22, 1888, the Hon. Secretary of the Adelong School Board wrote to my predecessor:—"Recently a pupil of the Adelong Public School was taken suddenly and seriously ill, apparently having eaten something of a poisonous nature. She stated to her doctor that she ate some berries that grow on the white cedar trees in the play-ground."

I would invite my readers' attention to the 'Agricultural Gazette' for November, 1893, p. 853, in which I discuss the "alleged poisonous nature of white cedar berries." Since that time I have collected additional evidence on the subject, published in the 'Gazette' for July, 1896, p. 427; September, p. 564; October, p. 662; also, for February, 1897, p. 82, and October, p. 700; also for July, 1898, p. 741, which seems to leave no doubt that the fruits are poisonous to stock. There seems no doubt they are deleterious to man also. (See also the 'Chemist and Druggist of Australasia,' and the 'Garden and Field' for October, 1893.)

New South Wales to Northern Australia.

OLACINEÆ.

Villaresia moorei, F. v. M.

The late Sir William Macarthur, in 1854, reported that the bark of this tree contains a peculiar and little-known bitter principle. What is it?

Coastal New South Wales.

RHAMNEÆ.

Zizyphus jujuba, Lam.—"Jujube Tree" of India.

The French prepare a demulcent, *Pâté de Jujubes*, from the fruits of this tree. Various parts of the tree are used in native medicine in India. The bark is a powerful astringent. The dried and powdered fruit is used in medicine, as are also the leaves and a decoction of the root. (Dymock.)

Queensland.

SAPINDACEÆ.

Cardiospermum halicacabum, Linn.—"Balloon Vine" (because of its inflated membranous capsule), "Heartseed" or "Winter Cherry," "Heart Pea" (because of the heart-shaped scar on the seed).

This plant is found in all tropical countries. The root is laxative, diuretic, and demulcent. It is mucilaginous, but has a slightly nauseous taste, and is used in rheumatism. ('Treasury of Botany.') Sanskrit writers mention this plant under the name of Jyautishmati, and describe the root as emetic, laxative, stomachic, and rubefacient. They prescribe it in rheumatism, nervous diseases, piles, etc. The leaves are used in amenorrhœa.

Rheede says that on the Malabar coast the leaves are administered in pulmonic complaints. According to Ainslie, the root is considered aperient, and is given in decoction to the extent of half a teacupful twice daily. It would appear that in rheumatism the Hindus administer the leaves internally rubbed up with castor oil, and also apply a paste made with them externally. A similar external application is used to reduce swellings and tumours of various kinds. (Dymock.)

Queensland and Northern Australia.

Cupania pseudorhus, A. Rich.

For a note on this plant as a fish poison, see the 'Gazette' for July, 1894, p. 471.

New South Wales and Queensland.

Schmidelia serrata, D.C. (Syn. *Allophyllus ternatus*, Lour.)

The astringent root is employed in parts of India to check diarrhœa. ('Cyclop. of India.')

Queensland and Northern Australia.

ANARCARDIACEÆ.

Semecarpus anarcardium, Linn.—"Marking-nut Tree" of India.

This tree is common in some parts of India. The hard shell of

the fruit is permeated by a corrosive juice, which is employed externally in sprains and rheumatic affections, in scrofulous eruptions, and for destroying warts. ('Treasury of Botany.') The nut is also used to produce the appearance of a bruise in support of criminal charges preferred through enmity, its application in a diluted form producing great œdematous swelling and redness of the skin. It is also used for a fumigation for hæmorrhoids in India; it causes sloughing of the tumours. It is given internally in asthma, after being steeped in buttermilk, and also given as a vermifuge. Both the nut and the oil obtained from it are used in India for purposes too numerous to mention. (Dymock, 'Materia Medica of India.')

Queensland and Northern Australia.

LEGUMINOSÆ.

I would particularly refer my readers to the chapter on "Leguminosæ" in my "Plants Reputed Poisonous to Stock in Australia" ('Agric. Gazette,' January, 1897, p. 3). It appears to me that the effects of Leguminous plants on man can be more advantageously studied if we carefully examine the evidence which has been gathered together in regard to their effects on stock.

Abrus precatorius, Linn.—"Crabs' Eyes" or "Indian Liquorice."

The roots of this plant are used in India as a substitute for liquorice, though they are somewhat bitter. In Java the roots are considered demulcent. The leaves, when mixed with honey, are applied to swellings, and in Jamaica are used as a substitute for tea. Under the name of "Jequirity" the seeds have recently been employed in cases of ophthalmia, a use to which they have long been put in India and Brazil.

Queensland and Northern Australia.

Acacia spp.—"Wattles."

The barks of all wattles are more or less astringent (they are, of course, largely used as Tans), and are used in domestic medicine to make decoctions or infusions employed in diarrhœa or dysentery, perspiring feet, some affections of the eyes, and a number of severe and trifling ailments in which an astringent may or may not be of service.

The medicinal properties of these barks are discussed in a paper by Dr. S. J. Margarey on *A. pycnantha*, in 'Trans. R.S. South Australia,' 3, xiv.

The astringent principle (accompanied by no injurious substance in large quantity) is present to a more or less useful extent in the barks of scores of genera of our native trees, *e.g.*, *Eucalyptus*, *Banksia*, *Casuarina*. The gums of some species of wattle are used to a limited extent in domestic medicine.

I may mention here, as a most interesting fact, that the bark of *Acacia tenerrima*, Jungh., of Asia, contains a bitter poisonous alkaloid, readily soluble in ether and chloroform. No alkaloid has been previously found in an Acacia. (Greshoff in 'Ber.,' **23**, 3537; 'Journ. Chem. Soc.,' 60, 336.)

I would at this place invite attention to my article on the "Fish-poisons of the Australian Aborigines" in the 'Agric. Gazette' for 1894, p. 470 (July); and Mr. J. Shirley's paper on "A Fish-poison of the Aborigines," in 'Proc. R.S. Qd.,' 11 (1895). Mr. Shirley's plant is *Stephania hernandiæfolia*, p. 1109.

There is very little doubt that many of the reputed drugs referred to in these pages have been used, at one time or another, by the blacks for stupefying fish in order to catch them; and I would again invite my readers to put their observations on record.

Throughout the colonies.

Acacia cunninghamii, Hook. f.

The green pods of this plant are rich in saponin. (T. L. Bancroft, 'Proc. R. S. Qd.,' 8, 1890.)

Dr. Lauterer (ib. 12, 103) draws further attention to saponin in this plant. He found 3 per cent. of saponin in the unripe pods, and gives an instance of supposed "sandy blight" in a wood-cutter, which he traced to the eyes having been rubbed by the hands on which was some juice of the pods of this species. His paper, "Occurrence of Saponin in Australian Acacias and Albizzias," should be referred to.

New South Wales and Queensland.

Acacia delibrata, A. Cunn.

Dr. T. L. Bancroft, of Brisbane, has found saponin in the pods, being led to inquire into their disagreeable, acrid taste. Physiologically, it was found to act as an irritant poison. It has a very disagreeable taste, and is soluble both in alcohol and water. ('Proc. R.S. Qd.,' 1887.)

Queensland and Northern Australia (Gulf of Carpentaria).

Acacia falcata, Willd.

See 'Gazette' for July, 1894, p. 470.

New South Wales and Queensland.

Acacia implexa, Benth.

The Rev. Dr. Woolls observes that the bitter bark of this tree probably possesses medicinal properties. The bark of young trees contains a pleasant bitter, perhaps owing to the presence of saponin. The fringe of this subject has alone been touched, and a not too difficult, yet a very important subject for research is open to our young Australian chemists. Who will systematically examine our Acacias for saponin?

Victoria, New South Wales, and Queensland.

Acacia penninervis, Sieb.

See 'Gazette' for July, 1894, p. 470.

Tasmania, Victoria, New South Wales, and Queensland.

Acacia salicina, Lindl., var. *varians*.—"Goobang."

See 'Gazette' for July, 1894, p. 470.

Interior of probably all the colonies except Tasmania.

(*To be continued*)

FORMULÆ, METHODS, AND REACTIONS.

KNOWN BY THE NAMES OF THEIR AUTHORS.

(Supplementary List).*

Gaultier de Claubry-Chatin (IODINE).—See Chatin-Gaultier de Claubry.

Gehe (PERU BALSAM).—Shake 5 Gm. Peru balsam with 5 Gm. sodium hydroxide solution (s. g. 1·168 to 1·172), then wash out with three successive 10 Gm. of ether. The solvent is evaporated in a tared dish until two weighings at 5 minutes' interval show difference of not more than 1 Cgm. To weighed residue add 35 to 40 C.c. of semi-normal alcoholic potash solution and 20 C.c. alcohol, saponify on water bath, and titrate with acid. The weight of residue (cinnamein) should be from 57 to 60 p. c., and the acid number of this between 235 and 238.

Gerrard (GLUCOSE).—Dilute 10 C.c. of Fehling's reagent with 40 C.c. of water and heat to boiling; a solution of potassium cyanide of about 5 p. c. strength is then run in until the blue colour is only just visible. Another 10 C.c. of Fehling's solution is now added to the contents of the basin, and the urine or other saccharine solution run in rapidly from a burette, the liquid being kept boiling; when the colour is discharged the volume of liquid added is read off; this volume contains 0·050 Gm. of glucose; where more than 0·5 p. c. of glucose is present, the urine must be diluted with water.

Giesbrecht (SHELLAC FIXATIVE).—Make a moderately strong solution of brown shellac in absolute alcohol, filter it thoroughly, and spread on warmed slides by means of a glass rod dipped in the

* After Wilder, Schneider, Altschul, etc. Continued from page 511.

solution and drawn once over each slide. Then let the slides dry. Brush them over with creosote shortly before applying sections, and after the latter have been arranged, heat on a water-bath for about a quarter of an hour at the melting point of the paraffin. On cooling, the sections will be found to be firmly fixed in the shellac, and the paraffin may be dissolved away by dropping turpentine on them.

Gilson (Hardening Mixture).—Mix 1 part of chloroform with 1 or 2 parts of cedar oil, and from time to time add more cedar oil until all the chloroform is replaced.

Grant-Cohen (Alkalies with the Sulphites).—A measured volume of hydrogen peroxide, coloured with methyl orange and made exactly neutral with a few drops of centinormal soda solution, is placed in a flask, and a solution containing a known quantity of the salt to be analysed added, and the mixture gently boiled. The sulphites are thus oxidised into sulphates; when cool more methyl orange is added, and the liquid titrated with normal acid.

Grimshaw (Acetic Acid in Calcium Acetate).—Treat 10 Gm. of the acetate with water, add an excess of sodium acid sulphate, filter the mixture, make up to a definite volume, and titrate a known quantity with standard alkali. A similar volume is evaporated to dryness with repeated moistening with water to drive off all free acetic acid. The residue is then dissolved and titrated with alkali, when the difference between the two titrations will give the amount of acetic acid.

Grocco (Creatinine in Urine).—In this modification of Neubauer's method the secretion of 24 hours is kept acid with acetic acid, then treat with milk of lime till only faintly acid; add calcium chloride and evaporate the liquid, keeping it faintly acid by the cautious addition of acetic acid. The residue is extracted with alcohol containing a little sodium acetate, and the filtered liquid precipitated with alcoholic zinc chloride.

Gunn (Coca).—Powder 5 Gm. of leaves, damp the powder with 2 p. c. ammonia solution, and allow to stand 30 minutes; then percolate with ammoniated ether up to 100 C.c. or until exhausted; shake out ether with three washings of 2 p. c. HCl, wash acid solution once with ether, make alkaline with ammonia, wash out three times with ether, collect in tared dish, evaporate the solvent, and dry the residue at 75° C.

Haines (Sugar in Urine).—Cupric sulphate solution (as for Fehling's solution), 2 volumes; pure glycerin, 1 volume; liquor potassæ, B.P., 10 volumes.

Hannay (Determination of Cyanides).—Consists in titrating the solution, made alkaline with ammonia, with a standard solution of mercuric chloride containing 13·537 Gm. in 1000 C.c, 1 C.c. = 0·0027 HCN. A faint turbidity indicates the end of the reaction.

Hayem (Solution for Fixing Blood Corpuscles).—Mercuric chloride, 0·5 Gm.; sodium chloride, 1·0 Gm.; sodium sulphate, 5·0 Gm.; distilled water, 200 C.c.

Hayem (Solution for Hypodermocyclis).—Sodium chloride, 75 grains; sodium sulphate, 150 grains; sterilised water, 40 fl. ozs.

Hehner (Mineral Acids in Vinegar).—Mix 50 C.c. of the vinegar with 25 C.c. decinormal alkali, evaporate to dryness, and ignite at a low red heat to convert the acetates into carbonates. When cool, add 25 C.c. of decinormal acid; heat the mixture to expel carbon dioxide, and filter. After washing, the filtrate and washings are exactly titrated with decinormal alkali, each cubic centimetre of which used up equals 0 0049 Gm. sulphuric acid or 0·00364 hydrochloric acid. Pure vinegar when incinerated gives an alkaline ash.

Hirschsohn (Cassia Oil).—Run 10 C.c. of the oil into a special flask with a narrow neck graduated to 6 C.c. in tenths, the flask being three-parts filled with nearly boiling sodium bisulphite solution. The contents are well shaken, and when action moderates more hot bisulphite is run in, and the flask immersed in a boiling water bath until the non-aldehydes have separated as a perfectly clear layer. The lower surface of the layer of non-aldehyde is then adjusted to the zero mark on the scale of the neck of the flask by the addition of more bisulphite. When quite clear the volume of non-aldehyde is read off. The difference between this and 10 C.c. represents the amount of cinnamic aldehyde.

Hopkins (Uric Acid).—Saturate 100 C.c. of urine with finely-powdered ammonium chloride (about 30 Gm.). Allow to stand 2 hours with occasional stirring, then filter and wash with saturated ammonium chloride solution; then rinse off the filter with hot water; heat just to boiling with excess of dilute hydrochloric acid, cool, and allow to stand 2 hours; then collect crystals of uric acid, wash twice with cold water, then with alcohol, until free from acidity, dry at 100° C., and weigh. Add 1 Mgm. for every 15 C.c. of mother liquor. If preferred, the acid ammonium urate precipitate from above may be titrated. The precipitate obtained as above from 200 C c. of urine is treated with a known volume of decinormal sulphuric acid, boiled, cooled, diluted to 200 C.c., a few drops of methyl orange added, and titrated back with semidecinormal alkali. The difference between the volume required and the volume of acid solution taken represents the ammonia of the precipitate, the uric acid having no action on methyl orange. Each cubic centimetre of semideci-normal soda solution = 0 0084 Gm. of uric acid.

Jack (Glucose in Urine).—See Fischer's test.

Jackson (Titanium).—A yellow to orange colour is produced on adding hydrogen peroxide to a solution of titanium in hydrochloric or sulphuric acid.

Jacquemin (Alkalies and Alkaloids).—Solution of pyrogallic acid containing a mixture of ferric chloride is turned blue by alkalies or alkaloids.

Jacquemin (Iodine).—Pyrogallic acid gives a brown colour with iodine.

Jacquemin (Nitrobenzol).—On adding a solution of stannous chloride in caustic soda, aniline is formed, and a blue colour results on adding carbolic acid and chlorinated soda.

Jacquemin (Wool, Silk, and Cotton).—On washing textile fabrics in a warm dilute solution of chromic acid and washing out, wool and silk are dyed but cotton is not.

Jaillard (Rose-Geranium Oil).—Complete solution should take place on adding 6 drops to 5 C.c. of 70 p. c. alcohol.

Jakobsohn (Stain for Epithelia in Urine)—This is a 1 p. c. solution of sodium-alizarin monosulphite which is added to one drop of the recently centrifugated sediment. Thymol may be used for the preservation of the urine.

Jaksch (Melanin in Urine).—Melanin is detected by the addition of a few drops of strong ferric chloride solution, which gives a grey colour reaction; the precipitate formed is soluble in excess of the reagent.

Jaksch (Sugar in Urine).—Treat 50 C.c. of the urine freed from albumin with 2 Gm. of sodium acetate, and from 1 to 2 Gm. of phenyl-hydrazine hydrochloride, and heat to 100° C.; on cooling, phenyl-glucosazone crystallises out.

Jaksch (Uric Acid).—This is a modification of the ordinary murexide reaction, with the substitution of bromine or chlorine water or nitrous acid as oxidising agents.

Jassoy (MORPHINE).—On shaking the suspected powder with 20 times its weight of cold water, filtering, adding iodic acid and then chloroform, the last is coloured rose-red if morphine be present.

Jaworowski (ALBUMIN AND PEPTONE IN URINE).—This is a solution of ammonium molybdate, citric acid, 4, in water, 40. The urine is mixed with excess of soda and filtered, evaporated to one-third, shaken out with amyl alcohol, and neutralised with citric acid; on the addition of the above reagent a precipitate is formed in the presence of albumin or of peptone.

Jaworowski (AMMONIA).—Mercuric chloride, 1; sodium carbonate, 1; sodium chloride, 1, in water, 30 parts.

Jaworowski (CINCHONA ALKALOIDS)—Consists of a mixture, freshly prepared, of equal parts of 10 p. c. sodium thiosulphate solution and 5 p. c. copper sulphate solution. Quinine, cinchonine, cinchonidine, and quinidine all give yellow amorphous precipitates with this reagent.

Jaworowski (COPPER).—The reagent is prepared by adding 1 or 2 drops of phenol to 5 C.c. of solution of ammonia.

Jean (OILS).—Syrupy phosphoric acid, saturated with hydrochloric acid gas, gives distinctive colour reactions with various oils.

Jehn (PEPPERMINT OIL).—A dark cherry-red colour is produced on adding chloral hydrate, and turns violet on the further addition of sulphuric acid and chloroform.

Johnson (ALBUMIN).—See Hager's test for alkaloids.

Johnson (ARSENIC).—On heating with soda and a strip of aluminium, arseniuretted hydrogen is evolved, and may be detected by means of silver nitrate paper.

Jones (CHLORIDES, BROMIDES, AND IODIDES).—On placing the substance in a large test-tube with a little manganese peroxide and water, the addition of 1 drop of 10 p.c. sulphuric acid causes a brown colour if iodine be prescnt and, on boiling, violet vapours are given off. When all the iodine is removed by boiling, a further addition of 2 C.c. of the acid causes brown vapours to come off on again boiling if bromine be present. When all the bromine is removed by boiling, cool the liquid, add an equal volume of acid and heat once more. Green vapours indicate chlorine.

Jorissen (AMYLIC ALCOHOL).—If fusel oil be present in quantity in ordinary alcohol the addition to 10 C.c. of the latter of 10 drops of colourless aniline oil and 2 or 3 drops of hydrochloric acid causes the formation of a red colour. Very small quantities of fusel oil must first be separated by shaking the liquid with ether and evaporating the ethereal layer before applying the test.

Jorissen (IODINE IN BROMINE).—Boil till colourless with 30 C.c. of saturated solution of potassium chlorate, cool, add a few drops of morphine solution (1 Gm. dissolved in excess of diluted sulphuric acid and diluted with water to 100 C.c.) and a little chloroform. The chloroform is coloured violet if iodine be present.

Jorissen (MINERAL ACIDS IN VINEGAR).—A purple colour is produced on adding the vinegar to a mixture of 1 drop of Gurjun oil and 25 drops of glacial acetic acid.

Jorissen (MORPHINE).—On treating with sulphuric acid and adding a small crystal of ferrous sulphate a red colour is produced; this changes to violet on heating, and on pouring the liquid cautiously into ammonia solution the latter turns blue.

Jorissen (NITROUS ACID).—A solution is prepared by dissolving 1 Cgm. of fuchsine in 100 C.c. of glacial acetic acid; on adding to 2 C.c. of this solution a trace of a nitrite, the colour changes from violet to blue, then to dark green, yellowish-green, and reddish-yellow, and is finally entirely discharged.

Julius (BENZIDINE).—A voluminous deep blue precipitate is thrown down on adding potassium bichromate to an aqueous solution.

Jungmann (ARBUTIN).—A blue colour is produced on making the solution alkaline and adding phosphomolybdic acid.

Kaiserling (PRESERVATION OF SPECIMENS).—To preserve specimens with their natural colours, they are immersed for 3 to 5 days in a mixture of 200 C.c. of formaldehyde, 1000 C.c. of water, 15 Gm. of potassium nitrate, and 30 Gm. of potassium acetate. Then remove and, after draining, place in 80 p. c. alcohol for 6 hours, followed by 95 p. c. alcohol for 2 hours, and permanently preserve in a dark place, in a mixture of 2000 C.c. of water, 200 of potassium acetate, and 400 of glycerin.

Kalbrunner (MORPHINE).—A blue colour is produced on adding 5 or 6 drops of aqueous ferric chloride solution (1:8), followed by 3 or 4 drops of potassium ferricyanide solution (1:120).

Kämmerer (NITROUS AND NITRIC ACIDS).—A blue colour on adding potassium iodide, starch paste, and acetic acid indicates nitrous acid; if the blue colour is only produced on replacing the acetic acid with sulphuric acid and zinc dust, it indicates nitric acid.

Keiser (MICRO PRESERVATIVE SOLUTION).—Corrosive sublimate, 50 Gm.; water, 300 Gm.; acetic acid, 3 Gm.

Keller (CORNUTINE).—Ergotin 0·5 C.c. is dissolved in 0·5 C.c. of water, and after the addition of one drop of ammonia shaken out with 1 C.c. of ether; the residue obtained by evaporating the ethereal layer is dissolved in 1·5 Gm. of acetic acid containing a trace of ferric chloride. This solution is poured upon a little concentrated sulphuric acid in a test tube; cornutine gives a bright bluish violet colour-reaction at the zone of contact.

Keller-Kiliani (DIGITALIS).—If a preparation of digitalis made with acetic acid and containing ferrous sulphate is poured upon sulphuric acid, also containing ferrous sulphate, a reddish violet colour is produced.

Kern (GOLD).—A reddish-orange colour and precipitate are produced on adding 1 drop of gold chloride solution to a large excess of potassium sulphocyanide solution.

Kern (URANIUM).—A brown precipitate, soluble in hydrochloric acid, is produced on adding potassium ferrocyanide solution; the acid solution turns green on boiling with a few drops of nitric acid.

Kerner (CREATININE).—Creatinine is precipitated from acid solutions by means of phosphotungstic or phosphomolybdic acids; a crystalline precipitate is obtained from even very dilute solutions.

Kerstal (TELLURIUM).—A violet colour is produced on shaking powdered ore containing tellurium with a little water and mercury, and then adding a little sodium amalgam.

Kersting (NITRIC ACID).—A few drops of a solution of brucine in sulphuric acid causes a brilliant red to yellowish-green colour.

Kippenberger (ALKALOIDS).—Iodine, 12·7 Gm,; potassium iodide, 60 Gm., dissolved in water, one litre. The alkaloid may be liberated from the precipitate by dissolving the iodine compound in a little acetone, saturating first with alkali, then with acid, diluting with water and driving off the acetone with heat; the addition of a little thiosulphate solution removes any traces of free iodine; the solution is then made alkaline with sodium carbonate, and shaken out with ether or with chloroform. Glucosides give no precipitates with this reagent.

Kirkby (ALKALINE GLYCERIN MOUNTANT).—A mixture of glycerin, 4, distilled water, 3, and solution of potash, B.P., 1, makes a serviceable extemporary mountant for plant sections. It combines the refringent property of the glycerin with the clearing action of the caustic potash, and the swelling action of the latter is considerably restrained.

Kirkby (Clearing Sections).—Place the sections in a fresh, clear solution of chlorinated lime until quite bleached (2 to 5 minutes), then gently warm in a test-tube for a few seconds, and afterwards quickly replace the solution with distilled water and boil for 2 or 3 minutes. Repeat the treatment with boiling water three times, after which wash with 1 p. c. acetic acid and finally with cold distilled water. Staining can then be performed.

Kitasato and Salkowski (Indol in Bacterial Cultures).—Potassium nitrite solution (0·2 per mille), 1 C.c. and a little sulphuric acid are added to 10 C.c. of the culture broth. Indol is indicated by the production of red colour. If the red colour reaction is given by the addition of sulphuric acid alone, it indicates the presence of both indol and nitrites (red cholera reaction).

Kletzinski (Quinine).—Add to a saturated solution of potassium ferricyanide five times its volume of saturated potassium chloride solution, make the blackish-green liquid strongly alkaline with ammonia, and filter. A blood-red to violet colour is produced on adding an excess of chlorine water to a liquid containing quinine, and then applying the above reagent.

Klunge (Aloes).—Copper sulphate solution gives a yellow colour with aloes, which on boiling with alcohol and sodium chloride becomes red.

Klunge (Berberine).—A red colour is produced on adding chlorine water to an aqueous solution acidified with hydrochloric or sulphuric acid.

Klunge (Phenol).—A blue colour is produced on adding a few drops of oxaniline solution, followed by a little ammonia.

Kobell (Bismuth).—A scarlet-red colour is produced when bismuth, mixed with an equal weight of potassium iodide and a little sulphur, is heated on charcoal in the blow-pipe flame.

Kobell (Molybdic Acid).—A blue colour is produced on heating with sulphuric acid and adding alcohol.

Kobert (Hæmoglobin).—Solutions containing hæmoglobin give a precipitate of zinc-hæmoglobin on being shaken with zinc dust, or mixed with soluble zinc salts. The precipitate is coloured red by alkalies.

Koch (Aniline Water).—See Ehrlich-Weigert-Koch.

Köhler (Alkaloids).—Distinctive colour reactions are produced on mixing alkaloids with 3 to 5 times their weight of potassium nitrate, then adding 1 or 2 drops of sulphuric acid and sodium hydroxide solution.

Koninck (Potassium).—A yellow precipitate is produced on adding a 10 p.c. solution of sodium nitrite mixed with cobalt chloride and acetic acid.

Kopp (Nitrous Acid).—A bluo colour is produced on adding diphenylamine dissolved in sulphuric acid.

Kopp (Olive Oil).—This is the "elaidin" test, 1 volume of nitric acid and a piece of copper wire being heated with 10 volumes of the oil.

Köttstorfer (Iodine).—On adding carbon bisulphide, acidifying with diluted sulphuric acid and passing the vapours of fuming nitric acid through the solution, a rose-red to violet colour is produced.

Krant (Alkaloids).—See Dragendorff's reagent.

Kroupa (Ammonia).—Filter paper dried after immersion in yellow solution of fuchsine in acidulated water becomes red when exposed to ammoniacal vapours.

Kupferschlaeger (Tarry Matter in Ammonia).—A brownish-red colour is produced on supersaturating with not too concentrated nitric acid.

Krutwig (Silver in Lead Ore).—The ore is dissolved in nitric acid, and excess of soda added, and the gold-coloured precipitate examined for silver.

REVISION OF THE BRITISH PHARMACOPŒIA.

At the meeting of the General Medical Council held on Thursday, June 8, the following report was presented by the Pharmacopœia Committee, the members of which are Dr. Leech (Chairman), Sir Dyce Duckworth, Mr. Brudenell Carter, Sir John Batty Tuke, Dr. Atthill, Dr. MacAlister, Mr. Tichborne, and Dr. McVail :—

Report by the Pharmacopœia Committee.

"The Pharmacopœia Committee beg leave to report that 26,500 copies of the British Pharmacopœia of 1898 have been printed, and 25,225 of these have passed into circulation, leaving in hand only 1275 copies; it is therefore evident that at an early date a further re-issue will be needed.

"The Pharmacopœia Committee note with satisfaction that the Legislatures of Queensland and of Victoria have sanctioned Acts which provide for the adoption of the British Pharmacopœia, 1898, in Queensland and Victoria respectively.

"In accordance with the report of the Pharmacopœia Committee adopted by the Council in November, 1898, the Pharmaceutical Societies of Great Britain and Ireland were invited to appoint representatives to confer with members of the Pharmacopœia Committee, and nominated Mr. C. Ekin, Dr. W. Inglis Clark, and Mr. R. J. Downes to act in this capacity. A conference has been held, at which Dr. Leech, Dr. MacAlister and Dr. Tirard (Secretary) met the above-named representatives, and discussed numerous points connected with subjects dealt with in the Pharmacopœia.

"It is recommended that the Pharmacopœia Committee be allowed to authorise the publication of reports received from experts in pharmacy and pharmaceutical chemistry upon matters deemed worthy of investigation.

"The President has addressed a letter to the Lord President of the Privy Council requesting that a report upon the Indian and Colonial Addendum should be forwarded through the Secretary of State for India and the Colonial Office to the Indian and Colonial medical and pharmaceutical authorities. Communications have been received from the India Office and from the Colonial Office expressing readiness to comply with this request.

"The report has been widely circulated, copies having been sent to about 900 medical and pharmaceutical authorities, and experts in India and the British Colonies.

"Valuable criticisms and suggestions have already been received from some of the Indian and Colonial medical authorities, and also from Surgeon-General G. Bidie (Retd.).

"A comprehensive committee has been formed in Canada to consider what additions it is desirable to make to the Addendum in order to adapt the Pharmacopœia to the requirements of the Dominion, and a preliminary report has already been received from this body.

"After the various communications have been considered by the Pharmacopœia Committee, a draft Indian and Colonial Addendum will be drawn up and submitted for the approval of the Council. But much time must elapse before all the comments can be received and considered, and it will probably be found impossible to present the draft Addendum at the November meeting of the Council." "D. J. Leech, Chairman."

On the motion of Dr. Leech, seconded by Dr. MacAlister, the report was adopted, and on the motion of Mr. Bryant, seconded by Sir Dyce Duckworth, it was also agreed that, in accordance with the recommendation of the Auditor, the money spent in the preparation of the British Pharmacopœia should not be charged as part of the general expenditure of the year, but that a separate Pharmacopœia Account should be kept.

THE STUDENTS' COLUMNS.

ANALYTICAL NOTES.

The Detection of Arsenates.

In the chart on page 450 of Attfield's Manual no reference is made to the probable presence of arsenates in addition to phosphates occurring in the AmHS group, neither is reference made to the fact that such acidulous radicals may be found existing with the basylous radicals Ba and Sr. The table is therefore incomplete, and the student should note these points, and, in addition, it is necessary to be very careful not to conclude that what the book says *is* calcium oxalate, until he has proved the absence of Ba, Sr, and even cerium, and the actual presence of Ca by the usual tests.

Test for Aqua Caryophylli.

If to an aqueous solution of the volatile constituents of cloves, such as are contained in the above, concentrated sulphuric acid be added, an opalescent precipitate is obtained, which disappears on addition of more acid, the liquid gradually acquiring a rose-red colour. If to the same liquid be added a drop of a weak solution of ferric chloride, a distinctive violet or purple colour is obtained. If ferric chloride be added alone a green colour is produced followed by a white precipitate, not soluble in HCl and turning brown or red; on shaking, flocculent resinous matters separate. Aqua pimentæ acts in much the same way.

ZOOLOGICAL NOTES FOR PHARMACISTS.—XIV.

Tissues and Glands forming Materia Medica.

Blood.—The medium for nutrition in Craniata consists when fresh of a colourless plasma containing red and white corpuscles In Hirudo the plasma is red, and in Insecta often green, the corpuscles being colourless. The red corpuscles in all Craniata except mammals are nucleated; in mammals the white only contain nuclei and they show movements similar to those of Amœba—Section II. Blood coagulates in a few minutes. From the clot consisting of fibrin (formed from the plasma) and corpuscles the pale yellow blood-serum gradually separates. Fibrin may be obtained free from corpuscles by whipping blood with twigs and washing the clot.

Fats.—Glycerin compounds of the fatty acids occur in a liquid state in the living animal. Found in most parts of the body in masses of membranous cells supported by connective tissue. In some fishes, as Gadus, the fatty matter is more or less confined to the cells of an abnormally large liver. Whales produce a large quantity of fatty tissue, blubber. Physeter secretes its peculiar fat, spermaceti, in special cavities, the largest of which is situated in front of and above the brain-case.

Bone Marrow.—Bone is of two kinds—compact dense bone, as forms the shafts of the long bones, and light spongy bone, occurring at the extremities of the bones, and covered with a layer of dense bone. Red marrow is the substance permeating spongy bone. It contains little fat, and from its special cells the red blood corpuscles are largely derived in the adult mammal. Yellow marrow is for the most part fat, and occurs in the cavities of the shafts of long bones.

Synovial Membranes cover the joints of bones and sheaths of ligaments. Synovia is secreted, a viscid substance coating the surface and producing an easy motion of the joints.

Ductless Glands.

Thyroid.—Situated in the neck, one lobe on each side of the trachea—consists of a number of small sacs enclosed in a coat of fibrous tissue and secreting a clear colloid substance. The gland has some important action as a regulator upon the central nervous system.

Thymus.—Situated behind the breast-bone. In non-hibernating animals it persists only for a year or two after birth. In hibernating animals it persists through life, and appears to have some action in keeping up the respiration and temperature during the quiescent period.

FLORAL CALENDAR FOR JUNE.

The list of flowers in blossom this month is so extensive that space is not available to enumerate the whole, and the more important, therefore, only will be mentioned :—

Apocynaceæ.—*Vinca major.*

Boraginaceæ. — *Borago officinalis*, *Cynoglossum officinale* (*P. J.* [3], **10**, 1033).

Calycanthaceæ.—*Calycanthus floridus.*

Caprifoliaceæ.—*Sambucus nigra.*

Compositæ or Asteraceæ. — *Arnica montana.* B.G. *Matricaria chamomilla.* *Pyrethrum carneum* and *P. roseum.* F.

Coniferæ or Pinaceæ.—*Pinus sylvestris*, *Juniperus communis.*

Cruciferæ or Brassicaceæ. — *Isatis tinctoria*, *Dentaria bulbifera*, *Brassica alba* and *B. nigra* (*P. J.* [3], **7**, 1057).

Cucurbitaceæ.—*Bryonia dioica.*

Cyperaceæ.—*Carex arenaria*, etc.

Dioscoreaceæ.—*Tamus communis.*

Ericaceæ.—*Vaccinium myrtillus.*

Geraniaceæ.—*Geranium maculatum.* B.G.

Euphorbiaceæ. — *Euphorbia pilosa*, *E. hiberna*, and *E. cyparissias.*

Graminaceæ.—*Anthoxanthum odoratum*, etc.

Ilicaceæ or Aquifoliaceæ.—*Ilex aquifolium.*

Iridaceæ.—*Iris pallida*, etc.

Labiatæ or Lamiaceæ.—*Ajuga reptans*, *A. chamæpitys*, *Salvia pratensis*, *Nepeta cataria.* *Lavandula stœchas.* B.G.

Lauraceæ.—*Cinnamomum camphora.* B.G.

Leguminosæ or Fabaceæ.—*Cytisus scoparius*, *Lathyrus aphaca*, *L. nissolia.* *Trigonella fœnum-græcum.* B.G.

Liliaceæ.—*Veratrum album.* B.G. *Aloe perryi.* B.G. *Allium suwarrowii.* B.G. *Hemerocallis flava.* F.

Linaceæ.—*Linum usitatissimum*, *L. catharticum* (*P. J.* [3], **7**, 1058).

Orchidaceæ.—*Orchis latifolia*, *O. morio*, etc.

Papaveraceæ.—*Chelidonium majus*, *Papaver rhœas.*

Ranunculaceæ.—*Aquilegia vulgaris*, *Delphinium staphisagria.*

Rhamnaceæ.—*Rhamnus frangula* and *R. catharticus* (*P. J.* [3], **7**, 1058).

Rosaceæ.—*Potentilla tormentilla* (*P. J.* [1], **21**, 41),

Rutaceæ.—*Ruta graveolens*, *Dictamnus fraxinella.*

Scrophulariaceæ. — *Rhinanthus crista-galli*, *Melampyrum pratense*, *Digitalis purpurea* (*P. J.* [3], **7**, 1057.)

Solanaceæ.—*Lycium barbarum.* B.G. *Atropa belladonna*, *Hyoscyamus niger.* *Solanum jasminoides.* B.G. *Solanum dulcamara* (*P. J.* [3], **7**, 1057).

Tiliaceæ.—*Tilia europœa.*

Typhaceæ.—*Typha angustifolia.*

Umbelliferæ or Apiaceæ.—*Ægopodium podagraria*, *Œnanthe crocata*, *Imperatoria ostruthium*, *Meum athamanticum*, *Smyrnium olusatrum*, *Apium graveolens*, *Eryngium campestre.*

Valerianaceæ.—*Valeriana officinalis*, *V. dioica*, *Centranthus calcitrapa.* B.G. (*P. J.* [3], **7**, 1057.)

In addition to the above list many of the plants mentioned in the "Floral Calendar" for May are still in blossom.

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PHARMACY AND THE DRUG TRADE.

A RECENT correspondent, in speaking of the necessity for legislative action in regard to the "company pharmacy" question, remarks that all chemists are agreed on that point, and at the same time he somewhat inconsistently expresses his opinion that chemists have not yet realised their position on this important matter. But, notwithstanding the contradictory nature of these two statements, they both of them represent facts which will have to be recognised and suitably dealt with before any real progress can be made in the settlement of various questions affecting the interests of the public, of the medical profession, and of all who have any claim to be considered as occupying a professional position in the practice of pharmacy. The incongruities of law and practice connected with the exercise of that pursuit; with the trade in poisons and with the business carried on by chemists and druggists are by no means new creations, but have been long existent, and the attention now directed to them in some unusual quarters is more the result of accident than a consequence of correct appreciation of their importance either by the representatives of the public or by the bulk of those engaged in the occupations referred to. By the gradually developed breakdown of a radically imperfect attempt to regulate the practice of pharmacy as an art and to provide for public safety, in regard to the supply of medicine for the sick, or of materials for use in the technical operations of various industries, effects have been produced which are so obviously anomalous as to force home a conviction that some remedy is required, even to the minds of persons unacquainted with the circumstances to which such effects are properly attributable. The results are often contradictory, for while fatalities arising from mistakes in the preparation of medicine or from misuse of poisonous articles are considered by some to require protective legislation of some kind, any impediment placed in the way of obtaining such articles for industrial purposes is held by others to be so inconsistent with free trade principles as to be inadmissible.

So far as the business of the chemist and druggist is concerned there is much reason for thinking that, in regard to legislative regulation, the position at the present time is not much in advance of that existing before the passing of the first Pharmacy Act in 1852, excepting that in place of the frequently ignorant and incompetent persons then carrying on business under the designation of chemists and druggists there is now a body of educated and legally qualified individuals. The attempt then made by the Pharmaceutical Society to establish a legal qualification to "exercise the business or calling of a pharmaceutical chemist" was based upon the assumption that the compounding and dispensing of medicine was work requiring special educational training on the part of all persons so engaged, and it sought to give effect to the views held by many members of the medical profession as to what was desirable in the public interest. Though it was then shown that there was no ground for the apprehension that the proposed legislation would create a monopoly, or deprive the public of the convenience of purchasing common medicinal articles of grocers or general dealers in small villages or localities where there was no regular chemist and druggist, the prevalence of free trade notions was too powerful in Parliament and the trade character of the chemist's business was too prominent to allow of such a professional qualification being made compulsory. The subsequent Act of 1868 was almost entirely directed to the regulation of the trade in poisons, and it touches the practice of pharmacy only in so far as certain poisonous articles are concerned. So that there is really now no pharmacy law in England beyond that by which the privileges of licentiates of the Society of Apothecaries were in 1815 confirmed and supplemented as to medical practice.

In regard to the practice of pharmacy, the Apothecaries Act of 1815 is now practically effete; but the medical successors of the old apothecaries have learnt by experience the necessity of more precise restriction of the practice of a professional occupation and the insufficiency of a mere distinctive title for preventing irregular practice by unqualified persons. Pharmacists are in precisely the same position, and the question now to be decided by chemists and druggists is whether the occupation they follow is to rank as a trade or as a profession? Unquestionably there are as many good grounds for taking one view of the matter as there are for the other, according to circumstances; but one thing still more certain is that there must sooner or later be a distinction between the qualification required of the professional pharmacist who desires to devote himself to the practice of pharmacy and that held to be sufficient for the trader in drugs, whose business is conducted on lines more analogous to that of a grocer or drysalter. In the latter case the requirements of qualification would properly be regulated by regard for public interests, both as to safety and convenience, and they will necessarily be much less than in the case of those who desire to obtain a professional status as comparable with that of a medical practitioner, as is the case in most European countries. From that point of view there seems to be some possibility of reverting to the position originally taken by the Pharmaceutical Society, and endeavouring, as at that time, to obtain adequate pharmaceutical legislation that would protect public interests without interfering with trade operations, and at the same time secure to legally qualified persons undisturbed possession of the privileges which should be the natural consequences of the qualification required to be taken for carrying on an occupation affecting the interests of the public. But in order to effect such a reform the first necessity will be for those desiring to improve their position to accept the principle that pharmacy is something more than a trade, and to bear in mind the fact that the trading associations of the business have been the source of most of the difficulties that British pharmacists have had to contend with.

ANNOTATIONS.

THE PHARMACEUTICAL SOCIETY OF IRELAND takes credit, through its President, for the introduction into the Companies Acts Amendment Bill of the two clauses which cover the same ground as the Lord Chancellor's Medical and Pharmacy Bills. What is certain is that the inclusion of those clauses in the Bill followed the issue of a circular to the members of the House of Lords by the Council of the Irish Society. That Society, following the example of the Pharmaceutical Society of Great Britain and other bodies representing professional occupations, has for some time past contended that the company trading difficulty, in so far as it affects pharmacy, ought to be dealt with in the Companies Acts Amendment Bill, but the Departmental Committee which had the subject under consideration felt that it was impossible to deal with the matter in that measure. The Lord Chancellor took a similar view and introduced a separate Bill to deal with the difficulty. Despite those facts, however, a clause dealing with companies engaged in carrying on the business of chemists and druggists has been inserted by a Select Committee of the House of Lords in the Companies Acts Amendment Bill, and the Lord Chancellor's Pharmacy Bill is for the present in a state of suspended animation. Whether the virtual incorporation of the lesser in the more important measure is an advantage or not remains to be seen. In any case, the British and Irish Councils are agreed that the clause cannot be accepted as it stands. They are also at one regarding the desirability of endeavouring to get the case of pharmacists dealt with in the same manner and in the same clause as that of the medical profession. Whilst, therefore, no definite understanding regarding a joint course of action has been arrived at by the two Councils, it is satisfactory to note that they are in agreement on the essential points.

THE COMPANY TRADING PROBLEM has served the *British Medical Journal* as a text once more, and another opportunity has thus been afforded the conductors of that paper to lecture the pharmaceutical press upon its alleged shortcomings. Apparently in certain medical circles it is esteemed a grave fault for pharmacists to claim due consideration from the Legislature, and it might almost be imagined that the especial organ of the general practitioner supports the view that pharmacists ought to be grateful to the Lord Chancellor for condescending to notice their case at all. Reference is made to the Pharmaceutical Society as "being dissatisfied with the provisions of their Bill," but it might be objected that, inasmuch as the Society has not yet promoted any new Bill, it is difficult to see where dissatisfaction could come in. The allusion, however, is evidently to the Lord Chancellor's Pharmacy Bill, which our contemporary erroneously persists in ascribing to the Pharmaceutical Society, and the fact that the provisions of that Bill have failed to satisfy pharmacists ought not to surprise medical practitioners. Neither does it justify the presumptuous air of patronage assumed in stating that the attitude of the pharmaceutical press, "upon which strictures of some severity might easily have been passed," was not alluded to in the report of the General Medical Council's Committee—an omission absurdly described as "an act of forbearance which it is to be hoped will meet with due appreciation." In regard to this and its ill-advised reference to "recriminations and hints of opposition," the *British Medical Journal* will do well to note two facts. The first is that the Council of the Pharmaceutical Society, upon the recommendation of its Law and Parliamentary Committee, has instructed its Watch Committee to take steps to oppose the clause in the Companies Acts Amendment Bill, which deals with pharmacy, and to secure the inclusion of pharmaceutical chemists and chemists and druggists in the clause relating to the medical and dental professions. The second fact is that the Council of the Pharmaceutical Society of Ireland is taking action upon similar lines and that the whole strength of the pharmaceutical craft in the United Kingdom will be brought to bear in the direction indicated.

THE PHARMACEUTICAL QUESTION may or may not be for the present insoluble, for the reason suggested by the *British Medical Journal*—that provisions which would satisfy the Pharmaceutical Society are not likely to be passed by Parliament—but it is really too ingenious for the leader writer of that paper to pretend that the chances of securing what is desired by pharmacists would be greatly helped by the passing of the Lord Chancellor's Medical Bill or its equivalent—Clause 3 of the Companies Acts Amendment Bill. Recognition of the general principle—that the action of companies must be brought within the provisions which regulate the conduct of individuals—is all very well in its way, but the medical profession is not being asked to acquiesce in such recognition being given and no more, and pharmacists fail, therefore, to see why they should be asked to do so. What the Lord Chancellor proposes is to put the matter on a practical basis so far as the medical profession is concerned, not merely to present a general principle for recognition, and pharmacists are not disposed to starve on a general principle whilst others, with no better claim to public recognition, are permitted to thrive on a definite application of the same principle. Reverting to the assumed present insolubility of the pharmaceutical question, the reason suggested for it hardly suffices to explain the situation, since no one is in a position to say what is likely to be passed by Parliament and provisions which would satisfy the Pharmaceutical Society have not yet been brought before the Legislature. Whether some practicable compromise between the Society's views and those of the Lord Chancellor can be arrived at remains yet to be seen, but, so far, the Lord Chancellor has not manifested any tendency to favour a practicable compromise, and, until he does, it appears idle to discuss the point. Meanwhile, the order of the day for pharmacists is opposition—by supporting amendments or otherwise—to the Lord Chancellor's proposals, as they present themselves in his two Bills and also in the Companies Acts Amendment Bill.

THE OPPOSITION SUGGESTED, as we must emphatically insist, is aimed at the Lord Chancellor's proposals only and not at the medical profession. The fact must not be overlooked that the members of that profession are indebted to pharmacists for directing their attention to the company trading difficulty and pointing out how it might involve other professions than that of pharmacy. Subsequently, the medical profession had the hearty support of the Pharmaceutical Society of Great Britain in the steps that were taken to solve the awkward problem, and it is not too much to assume that, if the General Medical Council had made a firm stand and declined to abandon those who should have been regarded as natural allies, the Lord Chancellor would not have attempted to discriminate between the practically identical claims of medical practitioners and pharmacists, as he has done. It has been asserted that pharmacists were included in the suggestions submitted to the Lord Chancellor by the General Medical Council and that the Law Officers of the Crown are alone responsible for the distinction made in the Bills actually drafted and introduced. That may be the case, but we have yet to learn that any protest has been entered

by the medical authorities—consistent with their previous action—against the proposed exclusion of pharmacists from the benefits the Companies (Medical Profession) Bill is intended to confer. It is ungracious, therefore, to say the least, for the *British Medical Journal* to object to pharmacists fighting for their own hand, as the medical authorities have decided to do, after coolly kicking aside the ladder which has enabled them to attain their present position in the matter. Expressions of sympathy and recommendations to accept the recognition of a general principle do not constitute a sufficient return for active support which has been fruitful in results. What pharmacists looked for was that the resulting benefits, if any, should be extended to them, as well as to those whom they had supported throughout and, failing the realisation of that anticipation, they are now disposed to take such steps as may enable them to arrive at the same goal by another and less desirable route.

The Salters Company Research Fellowship which is tenable in the Research Laboratory of the Pharmaceutical Society becomes vacant this year, and applications for it are now invited. The subject of the Fellowship is chemistry considered especially in its relation to pharmacology, and the holder, who is expected to devote his whole time to scientific investigation, enjoys an exceptional opportunity for conducting a post-graduate course of study. The Fellowship is of the annual value of one hundred pounds, so that the holder need have no anxiety regarding ways and means during the time he is engaged in applying the newest methods of scientific chemistry to the elucidation of pharmacological problems, and, though nominally tenable in the Society's Laboratory for one year only, it may be renewed under conditions with which it is not difficult to comply. Applications for the Fellowship—which are not limited to pharmaceutical chemists and members of the Society, though preference will doubtless be given to such—must be sent in writing to Professor Collie, 17, Bloomsbury Square, London, W.C., so as to be received by him not later than Friday, June 30 next. It is hopcd that the applications will be numerous.

The Spalding Poisoning Case, to which reference was made in the Journal a fortnight ago, has attained another stage, a verdict of "wilful murder" being returned by the coroner's jury against the husband of the deceased woman. It was found that death was the result of poisoning by mercury and strychnine, and evidence was given to show that those poisons had been purchased by the accused in suspiciously large quantities. A regrettable feature of the case is that the sale of the poisons appears to have been effected without the legal formalities having been duly complied with, the seller having—on his own acknowledgment—supplied them to a person who was neither known to him nor introduced by some person known to him. After the verdict of the jury had been returned, the foreman gave expression to the feeling that the seller of the poisons was seriously to blame, and the coroner said he agreed with that view of the matter, which, however, was one for the Spalding magistrates to deal with, as he had no doubt the seller would have to answer for it before the magistrates.

Fumigation with Hydrocyanic Acid Gas would seem a risky operation to conduct, but according to a bulletin issued from the Maryland Agricultural Experiment Station and quoted by the *Standard*, it has been resorted to upon a large scale by Professor W. G. Johnson, State Entomologist for Maryland, for the destruction of insects on fruit trees and bushes. In dealing with outdoor trees, boxes are used which are composed of a light wooden framework and oiled canvas, with a hood extension enabling trees seventeen feet high to bo fumigated. One-fifth of a gramme of potassium cyanide per cubic foot of space enclosed is found to be the best quantity for deciduous trees, and sulphuric acid diluted with fifty per cent. of water is used to decompose the cyanide. The acid is first put into a jar, which is placed in the required position inside the enclosure to be fumigated; the water is next poured in, and, lastly, the potassium cyanide, enclosed in a bag, is dropped into the jar, the operator instantly retiring and closing the box, tent, or hothouse, which should remain closed for half an hour. The materials must be the purest of their kind that can be obtained, and fumigation should never be done when the sun is shining, but only at night or on cloudy days. The fumigation of nursery stock in houses constructed for the purpose is said to be very simple, cheap, and satisfactory. In hothouses, too, the plan is easily followed and has been tried successfully for the destruction of various insects on different classes of plants, without injury to the latter. Nevertheless, until numerous trials on a small scale have enabled experts to lay down strict rules as to the quantities of potassium cyanide that can safely be used for various plants, growers are advised to refrain from adopting this dangerous method.

Mr. Rawling's Query why the Council of the Pharmaceutical Society does not make a test question in the law courts of the right of a company of unqualified persons to use pharmaceutical titles (see p. 564) appears to indicate that, even now, the effect of the House of Lords' judgment in the case of the London and Provincial Supply Association is not fully appreciated. The reply is that it is felt the Society would almost inevitably be nonsuited at the outset of the case. Though no High Court decision has yet been given on the point, it is thought to be useless to attempt to get behind the judgment of the House of Lords, which construed the Pharmacy Act as applying only to individuals or natural persons and leaving artificial persons—corporations or limited liability companies—free, to the extent of their capacity, to do what individuals are prohibited from doing, unless qualified. The incapacity of a company either to qualify by examination or to conduct the physical act of selling was the reason for holding companies to be outside the scope of the Act and, therefore, free to keep open shop for the sale, etc., of poisons or to assume the title of chemist and druggist in connection with that business. Obviously the only effectual remedy for the existing state of affairs in regard to company trading in pharmacy is suitable amendment of the Pharmacy Act. That has repeatedly been attempted without success, and the Council is doing all that can be done at the present time with that object in view.

The New British Pharmacopœia is expected shortly to be made a legal standard for the Dominion of Canada. According to the *Montreal Pharmaceutical Journal*, it is proposed that every drug shall be deemed to be adulterated if, when sold or offered for sale under a name recognised in the Pharmacopœia, it differs from the official standard of strength, quality, or purity. In a similar manner, the French 'Codex Medicamentarius' and the United States Pharmacopœia will be legally recognised, articles sold or offered for sale under names recognised in those works, and having the name of the foreign pharmacopœia indicated upon the label, being required to agree with the French and United States standards. Still more stringent is a clause providing that non-official remedies, sold or offered for sale under names found in recognised standard works on materia medica or chemistry, must not differ from the standards laid down in those works. It is also proposed that a drug shall be deemed to be adulterated if its strength, quality, or purity falls below or differs from the professed standard under which it is sold or offered for sale.

REVIEWS AND NOTICES OF BOOKS.

A MANUAL OF MATERIA MEDICA. By JOHN M. MAISCH, Ph.M., Phar.D. Seventh edition, revised by HENRY C. C. MAISCH., Ph.G., Ph D. Pp. 523, with 285 illustrations. Price 10*s.* 6*d.* net. London: Henry Kimpton. 1899.

For the past seventeen years this work has been a favourite text-book with American and English students, and the influence it has exerted has been very marked, the system of classification adopted in it having proved to be the most convenient in practice, whilst it has been gradually brought home to teachers and students alike that, for practical application, a description of the essential physical, histological, and chemical characters of organic drugs is of primary importance. The macroscopic characters of drugs have been well studied and summarised by many authors, but the microscopic characters have had much less attention devoted to them in America and England than in Germany and France, and the chemistry of drugs is to a great extent in a state of chaos generally. The compiler of a text-book dealing with all three sections, therefore, sets himself a difficult problem for solution, and considerable allowances must be made for imperfections in any such text-book produced at the present time. Such imperfections exist in the present as in former editions of the late Professor Maisch's guide to the materia medica of the vegetable and animal kingdoms, but it must be acknowledged that the book remains the only fairly complete work of its kind. In revising it for a new edition "the endeavour has been made to incorporate all recent advances in the pharmacognostic and chemical study of drugs, and to introduce such substances as may have attained a medical importance since the previous issue." So states the preface, and there appears no sufficient reason to call the statement in question. The new British Pharmacopœia has been incorporated, as it were, into the work, so that the requirements of British students are well met, and no pains have been spared to make it equally useful on both sides of the Atlantic. The chief defects of the book are the want of clearness in some of the illustrations, the extreme brevity of some of the monographs, and the omission to give the names of authorities for statements regarding the chemical constituents of drugs. On the other hand, it must be recognised that satisfactory illustrations are not available in many instances, and that the reviser has been wise to keep the volume to its present convenient size, whilst it is the only recent text-book printed in English giving particulars of the microscopic structure of drugs. Its price is moderate, the paper and printing are excellent, and the pharmaceutical student who does not procure a copy of the book is making a grievous mistake.

THE ARRANGEMENT OF MUSEUM HERBARIA. By E. M. Holmes, F.L.S. Pp. 16. Glasgow: William Hodge and Co. 1899.

This is a reprint of a paper read before the Museums Association last year, by the Curator of the Pharmaceutical Society's Museums. In it the author describes the various methods adopted in different museum herbaria for convenience of reference to specimens, and publishes as an appendix an alphabetically arranged list of all the natural orders of flowering plants given in Bentham and Hooker's 'Genera Plantarum,' with cross references to those published in Engler's 'Natürlichen Pflanzen-Familien,' so that anyone visiting different British or Continental herbaria can easily find any natural order, and thus save time in identifying specimens. The reprint is of convenient size for the pocket, but for the use of museums or private collections the list of natural orders has been printed separately in sheet form, and will be sent by the author to anyone desiring a copy, on receipt of two stamps to defray cost and postage.

BRITISH PHARMACEUTICAL CONFERENCE.

MEETING OF THE EXECUTIVE.

A meeting of the Executive Committee was held at 16, Bloomsbury Square on June 7 at 4.30 p.m.

Present:—Mr. J. C. C. PAYNE, J.P. (President), in the chair; Messrs. Atkins, Hills, and Park (Vice-Presidents); Messrs. Naylor and Ransom (Hon. Gen. Secs.); Messrs. Atkinson, Bird, Turney, and White.

Letters regretting their inability to be present were read from Messrs. Symes, Moss, J. C. Umney, Collier, Druce, McKnight, and Wright.

The minutes of the previous meeting were read and confirmed.

Mr. TURNEY read the following proposed programme of local arrangements for the meeting at Plymouth. The proceedings will commence on Monday, July 24, when the President, Mr. J. C. C. Payne, will hold a reception at the Assembly Rooms, Royal Hotel, in the evening. The Sessions of the Conference will open at the Law Courts on the following day, when the Mayor of Plymouth will offer an official welcome. The business meetings will extend from 10 a.m. to 4 p.m. on Tuesday and Wednesday, with the usual interval of an hour for luncheon at the Corn Exchange each day. At the close of each day's work afternoon tea will be served at the Assembly Rooms, followed probably by a short excursion on Tuesday. A smoking concert and ladies' drawing-room concert will be held on Wednesday evening. On Thursday there will be a whole day excursion, the members and friends being first conveyed to Mount Edgcumbe by steamer, Lord Mount Edgcumbe having kindly granted permission for his park and private gardens to be visited. Returning from Mount Edgcumbe, luncheon will be served in the pavilion on the promenade pier, after which the whole party will be taken by steamer around the Sound, through the Hamoaze, and up the River Tamar. Afternoon tea will be served on board.

The draft programme was unanimously adopted, and the thanks of the Executive were accorded to Mr. Park and the Hon. Local Secretary, Mr. Davy Turney, for their kindness in attending the meeting to lay before them the proposed local arrangements.

The Secretaries reported the result of the invitations sent to the members suggested for election as Local Corresponding Secretaries. The following gentlemen, having expressed their willingness to undertake the office, were duly elected:—

R. W. McKnight, Belfast
C. Thompson, Birmingham
Stewart Hardwick, Bournemouth
J. Jackson, Bradford
R. A. Cripps, F.I.C., Brighton
H. E. Boorne, Bristol
R. Wright, F.C.S., Buxton
E. Saville Peck, B.A., Cambridge
J. Munday, Cardiff
F. J. Palmer, Cheltenham
W. Shepheard, Chester and Wrexham
T. R. Lester, Cork
H. W. Jones, F.C.S., Coventry
W. F. Wells, Dublin.
Peter Boa, Edinburgh
W. Wippell Gadd, Exeter
J. Anderson Russell, Glasgow
J. H. Wilson, J.P., Harrogate
F. Rossiter, Hastings and St. Leonard's
E. C. Sayer, Ipswich
W. N. Allison, Hull
H. Hutton, Leamington
F. W. Branson, F.I.C., F.C.S., Leeds
Lewis Ough, F.L.S., F.C.S., Leicester
Theo. H. Wardleworth, Liverpool
C. Johnstone, Manchester
T. Maltby Clague, Newcastle-on-Tyne
H. Mathews, Oxford
J. Davy Turney, Plymouth
G. T. W. Newsholme, F.C.S., Sheffield
H. Wilson, F.I.C, F.C.S., Southampton
J Righton, Southport
C. Ranken, Sunderland
N. M. Grose, Swansea
W. A. Wrenn, Taunton
J. G. Everett, Windsor
F. J. Gibson, Wolverhampton

A preliminary list of officers was drafted for the ensuing year.

Nineteen gentlemen, having been duly nominated, were elected to membership.

PHARMACEUTICAL SOCIETY.

DONATIONS TO THE LIBRARY AND MUSEUM.

To the Library (London).

At a meeting of the Library, Museum, School and House Committee, on Wednesday, June 14, the Librarian and Curator presented the following reports of donations :—

Students' Association of the School of Pharmacy :—Papers, Session 1897-98.

Chemists' Assistants' Association :—Proceedings, 1897-98. Two copies.

Professor Greenish, London :—Materia Medica, 1899.

Smithsonian Institution, Washington :—Five reprints from annual report, 1897.

Kaiserliche Leopoldinisch-Carolinische Deutsche Akademie : — Nova Acta, 70.—71. Band ; Katalog der Bibliothek, 9. Liefcrung.

Pharmacy Board of Victoria :—Report for 1898.

Herr E. Merck, London :—Annual report for 1898.

To the Library (Edinburgh).

Pharmacy Board of Victoria :—Report for 1898.

Herr E. Merck, London :—Annual report for 1898. Two copies.

To the Museum (London).

Messrs. Randall and Sons, Southampton :—Specimen of specially prepared kino of *Pterocarpus marsupium*, from North Malabar.

Messrs. Burroughs and Wellcome, London :—Very fine specimen of cascara sagrada, in quills.

Messrs. Wright, Layman, and Umney, London :—Specimen of false ipecacuanha.

Dr. H. O. Forbes, Director of the Liverpool Museum :—Specimen of Lagaham resin from Socotra.

Mr. R. J. Lynch, F.L.S., Botanic Gardens, Cambridge :—Fresh specimens of *Polygonum bistorta* and *Aristolochia clematitis*.

PHARMACEUTICAL SOCIETY OF IRELAND.

The monthly meeting of the Council was held on Wednesday, the 7th inst., at the Society's House, 67, Lower Mount Street, Dublin, at three o'clock.

The PRESIDENT, Mr. R. J. Downes, was in the chair; and the other members of Council who attended were the Vice-President (Mr. Beggs), and Messrs. W. F. Wells, jun., Kelly, Grindley (Treasurer), J. E. Connor (Newry), Tate (Belfast), J. J. Bernard, Simpson, Ponter, and Michie.

THE COMPANY TRADING DIFFICULTY.

The PRESIDENT, after the minutes had been read, addressing the Council, said: We can claim another feather for our cap. Since our last meeting and issue of our circular to the members of the House of Lords, Lord Dudley has introduced the Companies Acts Amendment Bill, including in it the substance of the two Bills of the Lord Chancellor. The process which determined this decision we cannot know ; but I can fondly believe that the resolution of this Council at our last meeting and circular issued with it forced the Lord Chancellor to the conclusion that he could not in his high office face the responsibility—or, shall I say, the shame ?—of proceeding with the Bill he had brought in. We have also gained, by concession of the principle which from the beginning we contended for, that the Companies Acts Amendment Bill was the proper place where our grievance was to be satisfied. This, the Lord Chancellor and the Committee said, was impossible. It remains to be seen whether we shall succeed in our other contention that our case must be dealt with in the same manner and in the same clause as that of the medical profession. Our cases being alike should in justice receive like rule, and that we have shifted the Lord Chancellor and the Committee affords to my mind ground for hope that reason and justice are not yet dead. The clause affecting the business of pharmacy is still ill-considered, and, apart from the injustice it would inflict on us, it is peculiar in this respect, that it makes the Act of 1868 the criterion for offences. This, again, makes me think that there is a desire only to deal with the poison selling and not the pharmacy aspect of the business. The British pharmaceutical chemist, in the eye of the law, is only a poison seller ; in Ireland we are compounders of medical prescriptions ; and if any such distinction is sought to be made, we will have to look well to it that the Irish pharmacist has a place in the Medical Professions Clause. This must be fought for, even if we should lose, in the druggist interest. Our strong complaint that it is a scandal that persons unqualified and incriminated may open shop and transact the business and use the titles of pharmaceutical chemist, chemist and druggist, and registered druggist, under cover of the Companies Acts, is not met or attempted to be met by the clauses. It is a complaint which the Government admits to require a remedy, and the remedy which we have indicated has been approved and endorsed by the leading borough and urban councils in Ireland, and I hope will be endorsed by the county councils just formed. I see no prospect of efficient help from the Council of the Pharmaceutical Society of Great Britain. They, like the General Medical Council, appear to think that they cannot extend co-operation to any outside of their own sphere. Therefore, while we have always acted for the benefit of the whole body of pharmacists, British and Irish, and of the medical profession, believing in the advantages of co-operation, we are not under any obligation to sacrifice any point we may be able to make for ourselves in consideration of any sympathy which we may have with them. It is, therefore, more than ever our duty to watch and push our own interests independent of every other consideration. I would suggest that these clauses should at once be submitted to our solicitor and counsel for consideration, probably in conjunction with Mr. Campbell, Mr. Healy and Mr. Redmond, to show how they bear on us, and what course we should adopt to meet our case in the House of Commons ; and in the meantime I would urge our members to use any influence they have with any member of the House of Lords so as to have the matter discussed there. I will ask you to discuss this question when we reach the Law Committee's report.

THE QUEEN'S BIRTHDAY.

The PRESIDENT said : On the occasion of the celebration of Her Majesty's birthday, I thought it would be in keeping with the prestige and sentiments of this Council to telegraph our congratulations and good wishes. I did so on your behalf, and we received a special reply.

The REGISTRAR read the telegram, which was as follows :—

> The President and Council of the Pharmaceutical Society of Ireland desire to convey the expression of their homage and congratulations. (Sent on May 24)

The REGISTRAR also read the reply received, as follows :—

> The Private Secretary is desired to express the thanks of the Queen for the kind message which you have forwarded to Her Majesty.

On the motion of Mr. WELLS, seconded by Mr. GRINDLEY, the telegram and reply were ordered to be inserted on the minutes.

IRISH PHARMACISTS IN BRITISH GUIANA.

A letter was read from the Government Secretary of British Guiana, in reply to one from the Council asking that licentiates of the Irish Society in British Guiana should be exempted from examination there. The reply was that the representations of the Council had come too late to be dealt with in a Bill which had then become law, but that it would be considered if the Ordinance should come up for amendment at a later date.

The PRESIDENT : We saw that the British Society's certificates were recognised in the colony, and wrote requesting to be put on the same footing with them.

THE WORK OF PHARMACOPŒIA REVISION.

The PRESIDENT said : I received a communication from the General Medical Council requesting my attendance in London at the Conference of the Pharmacopœia Committee. In accordance with this request I attended as your representative—a position which I feel to be not only one of much honour, but of great responsibility, not only as regards the work undertaken, but also for giving effective representation to your views. I am the only representative of the retail pharmacists. I may say at once that I was received as your representative and President with all the courtesy you could desire by every member of the Conference, including Dr. Leech, the President of the Committee, the medical representatives, and the representatives of the Pharmaceutical Society of Great Britain. We had most interesting discussions, extending over a period of more than three hours, and it was a pleasure to notice that the desire is to have a perfect book, which it will be a pleasure to refer to and to work from, for both the medical man and the pharmacist, and for them rather than the public analyst. The position which you sought is not conceded to you of discussing questions with the Pharmacopœia Committee of the General Medical Council ; the work of the Conference is to prepare the work for that Committee ;

and although we may do everything to accomplish perfection, it will yet be in the power or proper function of that Committee to set aside the work of the Conference. Although I mention this as possible, I by no means suggest that it is likely to happen. On the contrary, I have reason to believe that it is the intention to ratify the work of the Conference, and I am not disposed to recommend the raising, at the present time, of ultimate questions which will not be of importance for at least five years. The great advantages which I see in the position we occupy are, the stimulus which must be given to pharmaceutical studies—a work in which every licentiate is invited to assist; the insight which we must obtain into the methods of compiling and amending the Pharmacopœia; the number of very nice points which have to be dealt with; and not least, the learning how small is our experience, scientific and practical, compared with that of others. I shall call our Committee together as soon as I receive certain official communications; but in the meantime if any of our members desire suggestions for special work, I have plenty to distribute, both scientific and practical. In conclusion, I will say you have undertaken a share in a great labour, and I trust our members will prepare themselves, and prove that their training for our licence has fitted them for this as well as their other obligations.

CORRESPONDENCE.

Letters were received from the Royal College of Physicians (Ireland), the General Medical Council, and the British Medical Association, acknowledging the receipt of copies of the resolution passed by the Council of the Society on May 3, relative to the Companies (Medical Profession) Bill. The letter from the College of Physicians stated that they did not consider the occasion a suitable one to legislate in the direction indicated.

The PRESIDENT: The General Medical Council also consider that it would not be suitable to include us in the Bill. Considering that the medical profession are indebted to us for calling their attention to the position in which they stood with regard to limited companies, I consider their reply and treatment of us very ungenerous. It would not interfere in the least with their position and dignity if they used their influence on our behalf and gave us their sympathy, even without themselves going to the Lord Chancellor and proposing that we should be put into the Bill. I think the attitude of the College of Physicians in Dublin and of the General Medical Council in London in the matter is not such as to promote that feeling of sympathy and goodwill between us which we have been endeavouring to cultivate.

Mr. BERNARD: It strikes me that there is another body which we have not approached, and which is equally liable with us to have their rights infringed upon, and that is the Royal College of Veterinary Surgeons in England. They are not mentioned in the Bill, and you could form a company to carry on their business. Would it be worth while to bring the matter under their notice?

The PRESIDENT: When we first raised the question we sent to every examining body.

Mr. WELLS: I think you ought to send to them again.

Mr. BERNARD: We should get our licentiates to stir up their Members of Parliament all over the whole country.

Communications were received from the Sligo Board of Guardians and the Castlecomer Rural District Council, intimating that they had unanimously adopted the resolution of the Council against company pharmacy.

A letter from the County Inspector of the Royal Irish Constabulary at Omagh stated that Mr. R. A. Anderson, chemist and druggist, of Six Mile Cross, had been fined £5 for using the title of "pharmaceutical chemist" without being lawfully entitled to do so. The defendant, the letter stated, had sent a memorial to the Lord Lieutenant, praying for an abatement of the fine.

The REGISTRAR read a copy of the memorial which had been received from the Castle, with a request that the Council would favour the Lord Lieutenant with their observations thereon. A sergeant of constabulary called at the defendant's shop and made a purchase; and the bill which he received was headed "Draper, grocer, and pharmaceutical chemist." The memorialist stated that some years ago he was registered as a chemist and druggist, and a printer suggested that he should put into his billheads the words "pharmaceutical," which he did, not knowing the meaning of it. He sold ordinary drugs up to October last, and then ceased to sell drugs of any description, and he ordered his shop assistants to strike out the words "pharmaceutical chemist and druggist" from his billheads, but they did not do so. The justices held that a technical breach of the law had been committed, and all except the Resident Magistrate, Mr. Dunsterville, joined in a recommendation that the fine should be reduced to 10*s*.

Mr. BERNARD: He notifies the reduction that he wants. That is going a step further than anyone else.

Mr. WELLS: He knew very well what he was doing. He got his caution as well as other people.

The letter and memorial were referred to the Law Committee.

A letter from Dr. Thomas Laffan relative to the certificates in pharmacy which the Royal University of Ireland requires was referred for inquiries.

Reports from Committees and other business having been dealt with, the Council adjourned.

MIDLAND CHEMISTS' ASSISTANTS' ASSOCIATION.

The annual meeting of this Association was held on Wednesday, June 7, at the Exchange Rooms, Birmingham. Mr. G. SELBY, the President, was in the chair. The report of the scrutineers showed that the following had been elected as members of the new Committee: Messrs. Cox, Thomas, Selby, Hosland, Spear, Foster, Moseley, Duncan, Lawson, Billingham, James, Bell, and Mann. The report of the Treasurer showed a balance in hand of £7 5*s*. 0½*d*. This and the Secretaries' report was adopted. On the proposition of Mr. E. OSBORNE, seconded by Mr. FOSTER, votes of thanks were passed to the Secretaries, and to the President, on the motion of Mr. THOMAS, seconded by Mr. FOSTER. Reference was made to the very satisfactory manner in which Mr. Selby had discharged his duties.

In responding, Mr. SELBY briefly reviewed the work of the past session, which is generally acknowledged to have been one of the most successful on record. With a view of increasing the interest taken in the meetings, he favoured the giving of prizes for original papers by members. He recommended that the city should be divided into districts, and all the assistants canvassed by the Committee. A vote of thanks was passed to the Treasurer (Mr. Foster) and the auditors and scrutineers (Messrs. Spear and Wells). Approbation was expressed of the objects and efforts of the Federation of Local Associations. An endeavour is to be made to arrange excursions during the summer on Sundays.

EDINBURGH DISTRICT CHEMISTS' TRADE ASSOCIATION.

The annual business meeting of this Association was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Friday, June 9, at 8.45 p.m., Mr. DAVID MCLAREN, President, in the chair.

Report of the Year's Work.

Mr. C. F. HENRY, Hon. Secretary, read the seventh annual report and financial statement, from which it appeared that there were sixty-nine members, an increase of five over the previous year. The Association had been successful in getting wholesale houses to consent to give the discount of 15 per cent. on all orders for proprietary articles, whether large or small, and this was a benefit to all chemists in Scotland. In regard to the Bill introduced into the House of Lords proposing that titles conferred by the Pharmacy Act, 1868, could be used by other than qualified persons, the Committee, acting on the instruction of the Association, had forwarded to prominent members of the Government and the House of Lords a petition which it was hoped would lead to the abandonment of a proposal which would, if carried out, be an injustice to registered chemists and misleading to the public. The financial statement showed a balance of £31 4*s*. 7*d*, and on the motion of Mr. MCDOUGALL, seconded by Mr. MACPHERSON, the report and statement were unanimously adopted.—On the suggestion of the CHAIRMAN it was agreed to send a donation of £2 2*s*. to the Benevolent Fund and £1 1*s*. to the Orphan Fund of the Pharmaceutical Society.

The Lord Chancellor's Pharmacy Bill.

The SECRETARY read the following petition which, in terms of the resolution of the Association, had been forwarded to the Lord Chancellor, Lord Salisbury, the Duke of Devonshire, the Secretary

for Scotland, Mr. A. J. Balfour, M.P., and the Lord Advocate :—

To the Right Honourable the Lord Chancellor. The humble Petition of the Edinburgh District Chemists' Trade Association,

Sheweth

That your petitioners having observed that in Clause 2 of the Companies Acts Amendment Bill it is proposed to confer the titles of "Pharmaceutical Chemist" and "Chemist and Druggist" on other than those who have passed the Examinations provided for by the Pharmacy Acts, 1852 and 1868, which confer and protect these personal titles, your petitioners humbly pray that this clause be withdrawn.

Your petitioners humoly submit that the said titles imply a personal qualification on the part of those using them, and that the general use of such personal titles by parties not possessing and incapable of acquiring the qualification implied therein, destroys the statutory significance of the said titles, and would prove misleading to the public. And your petitioners will ever pray, etc.

Signed on behalf of the Association,

DAVID MCLAREN, President.
CLAUDE F. HENRY, Secretary.

The action of the Committee was unanimously approved of, and it was remitted to the Committee with powers to take any further action that may be considered necessary.

Proposed Pharmacy Acts Amendment.

The SECRETARY read the report of the special Committee appointed to draft proposals for a Pharmacy Acts Amendment Bill. The Committee had drawn up the following proposals :—

DRAFT PROPOSALS FOR A PHARMACY ACTS AMENDMENT BILL.

I. That the dispensing of medical prescriptions be confined to qualified persons.

II. That the Association recognises that public safety would be better ensured if certain powerful drugs and potent substances used in modicine were included in a new section of the Poison Schedule, to be called Part III, and made subject to all the provisions applying to substances included in Part II. of said Schedule, except that the word "Caution" be substituted for the word "Poison" in labelling. But the Association would not, in the meantime, press this proposal if its inclusion was so opposed as to delay other reforms.

III. That any employer on whose behalf any poison is sold, or any medical prescription dispensed by an unqualified assistant or servant, shall be liable to the same penalty as an individual who unlawfully sells or dispenses any poison or medical prescription.

IV. That limited liability companies and business firms who sell poisons or dispense medical prescriptions shall be so regulated and registered under the amending Act as to secure such protection of the practice of pharmacy as is required for the safety of the public, and shall be made liable to all penalties to which registered chemists are liable under the Pharmacy Act, 1868, and shall only use statutory pharmaceutical titles implying personal qualification in connection with the names of qualified persons.

Mr. HENRY said that Clause 1 had long been urged by chemists as reasonable. There could be no doubt the mere selling of a few poisons was not the only thing contemplated in the passing of the examinations provided for by the Pharmacy Acts. They were a test of a person's capacity to practise pharmacy, and the Committee thought that, in the meantime at least, the dispensing of medical prescriptions—being an essential part of the practice of pharmacy—should be confined to qualified persons, or at least should only be done under the immediate personal supervision of qualified persons. They thought this ought to be done not only in justice to those who had passed these examinations, but also as a precaution for the safety of the public. With regard to Clause 2, it would be in the recollection of the Association that about a year ago the Government introduced a Bill which the Pharmaceutical Society successfully opposed. That Bill proposed to schedule a number of potent substances which might be sold by anyone, and their ground of opposition was that if the substances were poisonous or dangerous the vendors should be those educated, trained, and qualified to sell them. The proposal now made was to schedule certain potent substances, the sale of which would be restricted to qualified persons only. The reason for Clause 3 was obvious. At present the employer could not be got at, but only the assistant, who might be—and often was—a mere boy. He was fined, and his employer could not be touched. If the employer was not art and part, he was at any rate accessory to the fact, and should be punished for his share in the illegality. In regard to the storage and dispensing of poisons, limited companies would be made liable just as chemists are at present. The Committee, in putting forward this proposal, went on the broad principle that the practice of pharmacy by whomsoever or wheresoever carried on should be regulated by a Pharmacy Act which, like the Acts of 1852 and 1868, should be carried out by the Pharmaceutical Society. It was an anomaly that qualified chemists should be subject to penalties which limited companies were not at present liable to, and the Committee was also of opinion that as a matter of justice, as well as public utility, statutory titles should be confined to qualified persons.

After some discussion the draft clauses were approved of and the Secretary was instructed to send copies to the Council of the Pharmaceutical Society and the Privy Council.

Beecham's Pamphlet.

The Committee reported that it had decided to take no further action in regard to the remit anent the pamphlet issued with Beecham's pills, and which had since been altered. The action of the Committee was approved of.

New Members.

Mr. Andrew Adamson, Kirkcaldy, was nominated for election as a member, and Messrs William Duncan and Wm. B. Cowie, Edinburgh, as honorary members.

Alteration of Rules.

On the recommendation of the Committee it was agreed to alter Rule 4 so as to allow the appointment of an Assistant-Secretary and Treasurer.

Election of Office Bearers.

The following were elected office-bearers for the ensuing year :—David McLaren, Chairman ; George Lunan, Vice-Chairman ; C. F. Henry, 1, Brandon Terrace, Secretary ; R. J. McDougall, Assistant-Secretary ; William Burley, Treasurer ; and as members of Committee, Messrs. Boa, Bowman, Glass, Hendry, D. McGlashan, Macpherson, Smith, Stephenson, Swan, and Wylie.

Thanks were accorded to the Chairman and Secretary for their labours during the year, and the meeting then closed.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.

At a special general meeting of the members of the above Association, held at the White Bull Hotel, Blackburn, on Tuesday last, the Hon. Sec., Mr. R. LORD GIFFORD, read a report, in which the Committee gave some indication of its work and policy and the progress of affairs. The Committee had come to the deliberate opinion that a real Pharmacy Law, superseding the present totally inadequate Poisons Regulation Law, is the only solution of the pharmaceutical problem. That problem involves the necessity of settling, once for all, the basis upon which pharmacy shall work out its destiny. It is impossible to prevent pharmacy suffering still further degradation unless those who practise it obtain a footing upon the professional ladder. It is at least the duty of the State to make it clear that chemists are qualified and responsible persons, so far as all powerful drugs and medicinal substances are concerned. The question of principle being settled, the side questions will right themselves. Forego this principle—"the just consequence of compulsory examination"—or compromise upon it, and there is no settlement. The qualification should be obtained only by personal examination. Either it is necessary or it is not necessary for responsible people to know the botany, the materia, and the chemistry of the Pharmacopœia. There are some chemists who argue in favour of "a working compromise," but what working compromise can be devised which would make it impossible for unqualified people to suit their circumstances to it? The question, however, is one of principle, and cannot be compromised. Chemists require to know the circumstances operating in favour of just law, and those operating in favour of absurd compromise. In harmony with the spirit and intention of the Legislature of 1868, the Council of the Pharmaceutical Society has consistently increased the rigour of the examinations. By this means it has furnished a rock foundation which no destructive criticism can undermine. The Council's position is therefore as strong as it has been said to be weak—in other words, as the gate of pharmacy is narrowed, so ought the fence around the fold to be strengthened. Again, it is easy to show that the public interest, its health and its ignorance, should not be exploited by unqualified adventurers. The public is duped and swindled at every turn, and it is the duty of chemists, collectively and individually, to expose the lies and evil practices prevailing. The forces operating against chemists are nothing but sordid capitalistic and selfish interests. There is no thought of public safety in the breasts of opponents whose one object is to keep pharmacy an open field, so that the public may continue to

be exploited. The tendency to side issues is a serious evil, and on that ground the Committee opposed Mr. Glyn-Jones at the Council election. While he is congratulated on his victory, he is asked: Can he serve two masters? He must make a choice, and it is hoped that his abilities will be employed for the benefit of pharmacy. A great force which is operating against chemists is the parasitic press, trade journals—which are wolves in sheep's clothing. The bulk of their subscribers are unqualified men, and those precious properties have been able (by strict attention to business) to buy the brains of excellent chemists in order to educate their unqualified *clientéle*. Some talk about the poor wretches who, forced by circumstances, have sold their birthright to the leeches that abound. What shall be said of the educated, prosperous pharmacists who supply the demand for information which comes from the unqualified? Shortsightedness has not been confined to the rank and file. But let us see this parasitic press for what it is—capitalistic adventurers, whose interests lie in keeping pharmacy an open trade by whatever means they have at hand. Nothing matters, not even if the means are dishonourable. Just as the unqualified parasites on the body of the drug trade are unrestrained by responsibility or sense of shame, so its press is conducted without reference to the code of honour. There are some chemists who cannot see that the intrusion of this press into pharmaceutical politics is an impertinence, and that the opinions expressed have exactly the same importance as that of any other enemy; but surely the absolute incapacity to find an argument, exhibited week by week in the case of a section of this press, and the fact that it is compelled to fall back upon buffoonery, should open the eyes of qualified chemists as to who is on their side. In conclusion, it is of primary importance that professional qualification should be personal. If the principle does not apply in the chemist's case it breaks down. But Conservatives, Liberals, Radicals, and Socialists all agree with the chemist's claim when presented unobscured by irrelevancy. There is only a parasitic world and its press to fight, and it is a manifest duty to have a straight and decisive settlement of the issue.

Councillor SHORROCK (Darwen), who presided in the unavoidable absence of Councillor Critchley, dealt at length with the work of the Committee during the season, and explained that the meeting was called to keep the members in touch with their work, and to invite criticism and suggestions.

Mr. JOSEPH HINDLE thought that if the Council confined itself to the question of title and the sale of poisons and potent drugs it would be more effective.

The SECRETARY pointed out that this was what the Council had done, and

Mr. LOMAX supported that view, eulogising the action of the governing body.

Mr. W. HOLT read a number of suggestions approved by the Committee to be sent to the Federation of Local Associations. A discussion took place on these, and ultimately the Vice-President and the Secretary were asked to attend the annual meeting at Plymouth, the hope being expressed that the Federation might be made a more effective organisation.

Mr. W. WELLS moved a resolution assuring the Pharmaceutical Council of the continued support of the Association in its endeavours to institute a profession of pharmacy. He said they were all agreed that nothing short of pharmacy as a profession would meet their requirements or deal out fair justice either to chemists or to the public. They were glad to know that they had now a Council which endorsed that view, and which, he felt sure, was prepared to do its utmost to carry it into effect. He therefore thought it would ill become them to close the meeting without assuring the Council of their hearty support in its very onerous work.

Mr. LOMAX (pharmaceutical chemist, Darwen) seconded the resolution, which was agreed to *nem. con.*

The meeting then terminated.

SALOPHENE IN INFLUENZA.—The prompt action of salophene and its harmlessness have rendered it a very valuable specific for influenza. Salophene is quite tasteless, without any unpleasant after-effects, and may therefore be taken continually for a long time. Its action is remarkably prompt, and is accelerated by the drinking of aërated mineral water. Doses of 50 centigrammes several times per diem at intervals of two to three hours are prescribed in influenza. Small doses of salophene are excellent as a prophylactic during epidemics.—*Pharm. Centralh.*, 40, 173.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON).

On Wednesday, June 14, a special meeting of this Association was held in the Westbourne Restaurant, Craven Road, W., the President, Mr. J. F. HARRINGTON, in the chair. There was a good attendance of members.

The PRESIDENT said they had been called there that evening to consider

The Companies Acts Amendment Bill,

in so far as it affects pharmacy. They would find that in Clause 2 which would make it legal for a company to carry on the business and use the description of pharmaceutical chemist or chemist and druggist, provided the business was *bonâ fide* conducted by a qualified manager or assistant, and that the name of that person was conspicuously posted in the shop or other place in which the business was carried on. Clause 3 would make it unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife, and at present it did not affect pharmacists, but they were desirous that it should. The President then briefly traced the history of pharmaceutical politics since the beginning of the year, pointing out the position at the present time, viz., that the Pharmaceutical Council had resolved to oppose Clause 2 in the Companies Acts Amendment Bill and to endeavour to get included in Clause 3 the words pharmaceutical chemist and chemist and druggist. Such being the position, it had been thought advisable to call a meeting of the Association to express its views on the matter. Personally, he thought that the Council was taking the wisest and the only possible course. With regard to company pharmacy, they had heard in that room many different opinions as to what steps should be taken, if any, to bring companies under certain regulations. It was the opinion of some that all directors should be compelled to be qualified chemists; others thought that at least one director should be qualified, and that his name should be over the door, and that he should be responsible for the proper conduct of the business; while others believed that the best solution of the difficulty would be to require that each business should be registered, and that a qualified manager should be at each shop and that his name should be registered. He must acknowledge that he could not see in any of those suggestions anything that would be satisfactory to pharmacists. Supposing one or more directors were qualified, his or their names could be put over any number of shops, and he did not see that it would in any way satisfy qualified pharmacists or protect the public. Then, in the case of each shop being registered with a qualified manager, all a company would have to do would be to employ some young man who had just passed the Minor, or say some poor old chemist who had not been successful in his business, who, while nominally manager, would have nothing to do with the real management of the business. He did not think any good could be done in attempting to regulate company pharmacy. But if they were compelled to regulate companies, as would be the case if the Bill was passed with Clause 2 as it now stands, it must be remembered that most of the companies were run by some of the cleverest and smartest business men in the country, and if the Pharmacy Act were made to apply to them in the same way as it does to an individual, they would be sure to take full advantage of it and let the public know that there was no difference in regulations affecting their shops and those of qualified chemists. This, he thought, would be a great disadvantage to the latter. Did members of that Association think that by any such regulations they would have to contend with a single shop less or that they would obtain any advantage? He did not wish to say very much on the subject, but simply desired to place it before the meeting and leave it to be discussed; but he hoped all present would decide to support the Council in its efforts, and, when the time came, use all their powers to influence the gentlemen who represent them in Parliament to stop Clause 2. He had said very little about Clause 3, but if they succeeded in inserting their titles in that clause it would be a very great and distinct advantage. They, as chemists, could not ascertain their power until they tried, but he believed that if the chemists of the country would only exert themselves they could show that they are a much more influential body than they are supposed to be. It would be no use going for it in a half-hearted way. "Do not," said the President, "feel that you are asking a favour, but that what you want is justice. Work yourselves up into such a state of enthusiasm about it that you must carry conviction." He did not think they ever had a better opportunity than the present, for they had always had to fight companies, and now

the Government was bringing in a Bill to amend the Companies Act—and surely it wanted amending so far as it applied to pharmacy as much as it did to any other business mentioned in the Bill.

Mr. J. W. Taplin thought that chemists ought to use their best endeavours to get Clause 2 withdrawn and tack themselves on to Clause 3. He thought the time had arrived for action in the matter, and they ought to get the Pharmaceutical Council to act and to give it their support.

Mr. R. H. Parker was of opinion that the position of pharmacists at present is not only an anomalous, but a difficult one, but they must all act together in their efforts to improve it. With regard to Clauses 2 and 3 in the Bill under discussion, they ought to be opposed *in toto*, unless chemists' titles were included in Clause 3; but in any case Clause 2 must be fought tooth and nail. What would be the outcome supposing chemists were successful in getting their titles in the medical clause he was not prepared to say. It would then be impossible for companies to carry on the business, and he thought something would have to be done to legalise companies composed of qualified men, and to which they had no objection. He thought there could be no doubt that a great agitation would be made to set such companies on a legal footing, and he was of opinion that the Pharmaceutical Council would be wise to formulate a scheme to regulate pharmacy as conducted by qualified individuals, by companies and by medical men. Mr. Parker then went on to show that chemists can very reasonably claim exclusive use of their titles, and that they should aim at putting a stop to companies of unqualified persons using those titles, but at the same time they could not hope to stop them from trading or calling themselves "drug stores," "herbalists," etc. With regard to the President's remarks about registering shops, he was not quite in accord with him. He believed that if there was a system of having every shop registered that was carried on for the purposes of selling poisons or compounding medicinal substances, whether owned by companies, medical men, or chemists, and also registering the name of the qualified man who should be responsible for the conduct of each shop and have real managership—viz., engaging assistants, buying drugs, and to be in charge for a reasonable time every day—no qualified man would take all that responsibility unless well paid, and that would seriously handicap companies in carrying on the business in competition with the pharmacist. He was therefore of opinion that it would be wisest to throw over the principle of qualified proprietorship, and to fight for effective qualified managership of each shop.

A spirited discussion then took place, in which Messrs. Taplin, Hick, T. Bright, Cracknell, Andrews, and others took part. The opinions generally expressed were that Clauses 2 and 3 of the Companies Bill must be opposed as they now stand; that compromise of any kind with companies was not to be thought of, and that the Pharmaceutical Council should be urged to press for getting chemists included in Clause 3. Mr. Andrews was inclined to agree with Mr. Parker with regard to registration, and it was pointed out that the position of companies is quite legal, although chemists were apt to consider it illegal. Finally, on the motion of Mr. Cracknell, seconded by Mr. Hyne, it was resolved

> That this meeting of the Western Chemists' Association pledges itself to support the Council of the Pharmaceutical Society in the action it is taking to oppose Clauses 2 and 3 of the Companies Bill, 1899.

The proceedings then terminated.

A New Purgative.—Hart recommends the oil from the seeds of *Omphalea megacarpa*, a Euphorbiaceous tree, as a purgative. Calmody describes the oil as mild and tasteless, with a strong purgative action, which follows in about three hours after taking the oil, but which is, however, only of short duration, and is not accompanied by any pain. The seed is described as being enveloped in a rough, black, and brittle shell, enclosing a sweet nut-like nucleus. The fruit containing the seed has a diameter of about 3½ inches; it is covered with a sticky rough skin of a quarter to three-eighths of an inch thick; it is somewhat pulpy and streaked. Round the seed is a thin parchment-like husk, which, however, does not completely envelop it. Underneath this is a layer of starchy matter about three-eighths of an inch thick. The seeds weigh 13·15 Gm., the starchy tissue 31·175 Gm., of which 50 per cent. is pure starch. The fruit ripens in February and March.—*Oest. Zeit. für Pharm.*, 53, 214.

LETTERS TO THE EDITOR.

NOTICE TO CORRESPONDENTS.—All Communications for the 'Pharmaceutical Journal' must be Addressed to the Editor, 17, Bloomsbury Square, London, W.C., and, if intended for publication in the current week's issue, should reach the Office not later than Wednesday, though news can be received, if specially arranged for, as late as Thursday morning. Advertisements and Orders for copies of the Journal must be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C., and Instructions from Members of the Pharmaceutical Society, with reference to the transmission of the Journal, must be sent to the Secretary, 17 Bloomsbury Square, London, W.C.

The Question of Title.

Sir,—It is useless chemists prating about the Lord Chancellor's Bill week after week as they do in the columns of the Journal. Why does not the Law and Parliamentary Committee of the Society make a test question in the Law Courts of the right of the unqualified company to infringe the title of chemist and druggist or pharmaceutical chemists in contravention of the first clause of the Pharmacy Act? By so doing we should have the question of "individual qualified proprietorship" set out in its truly legal interpretation, and if that is against the spirit and wording of the Pharmacy Act, then by all means let the Pharmacy Act be amended by wiping it clean off the Statute Book, and the Pharmaceutical Society and its supporters gracefully give over their functions and cease to be any longer a Department of State. It will only mean the expenditure of money, but let it be tried before the Lord Chancellor's Bill is brought in, as opposition then will be futile, since the principle is recognised in his measure that a company can override individual proprietorship. This should be fought for to the bitter end, and if the chemists and druggists are beaten they will have the satisfaction of knowing they can be no worse off then than they are now.

Torquay, June 9, 1899. W. J. Rawling.

An Example of Surgery Dispensing.

Sir,—Whilst a lady customer was on a visit to a noted health resort she obtained a prescription from a well-known physician—

℞ Calcii Chlorid	℥ii.
Tr. Nux Vomic.	℥i.
Aq. ad	℥vi.

Sig.: ℥ss ter in die. M.

I made this prescription up, getting a clear mixture. On the lady's arrival home she called in her medical man, who had the prescription shown to him. He took the same, and said he would have it made up at his surgery. To-day the lady's companion came in, and, producing a six-ounce bottle with a thick sediment at the bottom of bottle, asked if the medicine had been made up properly. I found on examination that the dispenser had used chloride of lime for chloride of calcium. The lady had taken a dose of this and was very ill in consequence. I telephoned to the doctor's surgery, and found that chloride of lime had been used, and in conversation the dispenser did not seem to have any idea that there was any difference between calcium chloride and chloride of lime (chlorinated lime). He thought the latter was right. I leave your readers to judge of the seriousness of allowing ignorant and unqualified men to dispense any medicines for the public.

June 8, 1899. M.P.S. (189/27).

Why do not More Subscribe?

Sir,—I sympathise to a great extent with your correspondent G. C. Osborne, whose letter appears in a recent number of the Journal (*ante*, p. 481). There must be a cause for the failure of the Society to retain as subscribers so many of those who pass the Minor, and that so many even of those in business do not join. This is a question which will press for consideration later on, but it is well to remember the old adage about swapping horses when crossing a stream, while we are passing through such a critical time as the present. This is a crisis in the history of the pharmaceutical body, and it behoves us to sink minor questions for the present and give our minds to struggling for our professional existence. As to the certificate of membership, that is certainly a very minor question, but I should like whilst writing to add my voice to what seems to be the general chorus of condemnation of the taste (?) exhibited in its production. A more bald, unin

teresting, and utterly miserable-looking production I have not seen; it is not worthy of the Pharmaceutical Society.

Southport, June 7, 1899. GLYCYRRHIZA (189/18).

The Position of Qualified Assistants.

Sir,—Will you kindly allow me a little of your valuable space, as you have done before? The case before the Coroner at Spalding, reported in *P. J.*, June 3, affords food for reflection. No store department, drug company, or branch could be run for a day but for the shelter of the qualified assistant. Any man selling his name for the purpose of evading the Act of Parliament is a traitor and a blackleg to his fellow-tradesmen. In the flagrant case above mentioned, should not the attention of the Privy Council be drawn to its power under the Act, 1868, sec. 26? Nearly all other bodies, like the Incorporated Law, Medical, Dental, etc., have the power in their own hands of striking such men off the Register. Take away the qualified assistant and you deprive companies of the capability of carrying on the business. And it would be greatly to the assistants' advantage in the aggregate, for where they employ one, half a score could earn a competence on their own account. The big fish swallow up the little, giving them no chance to live.

June 9, 1899. E. W. (189/32).

The Poison Regulations.

Sir,—It appears to me "Mensura" has missed the point of my brief communication. As regards his peculiar commentary on David's actions, I will not presume to soar with him in his higher flights of imagination, where perhaps even now he is speculating as to whether David preferred spheroid, ovoid, or other shapes for his missiles; besides, I think here also he has overlooked the most important fact, for I believe David had more faith in a guiding power than he had in the form or surface of his projectiles.

June 13, 1899. PONDO (190,30).

Unqualified Opinion.

Sir,—I have been reading the remarks in your issue of June 3, by "Country Chemist" and "Down-Trodden Chemist," and as in my time I have been both, I may perhaps be allowed a few words. As to "Country Chemist's" first query, I think there are many in the trade who will agree with me (some, perhaps, unwillingly) that, whether Mr. Boot be qualified or not to use the title of chemist, yet, as a man of business employing many chemists, he is fully qualified to give his opinion from a practical point of view, as affecting the trade, whether allowed to express it in the *Pharmaceutical Journal* or not. As regards the question of conscience, whether Mr. Boot's, or "Country Chemist's," or any other chemist's (including myself), that is a subject which space in the *Pharmaceutical Journal* will not allow of being properly and fairly discussed; anyhow, qualification should neither make nor mar a man's conscience. The assertions of "Down-Trodden Chemist" are (even where holding the proverbial grain of truth) far from being correct as regards "medicinal preparations being prepared by boys and girls at high-pressure speed." A walk round Messrs. Boot's warehouses, laboratory, and plant would soon show him the folly of stringing words together in such ignorance. The confidence of the public is of primary importance to all well-regulated companies, and the "D.-T.C." may be sure that every effort is taken by them to ensure the safety of the public. Chemists have had to put up with a deal, and will have a lot more to put up with, as there is no putting back the wheels of progress, and where twenty years ago they might (if they had then chosen to unite) have been able to guide the stream of public opinion, they preferred to let things take their course, with results disastrous to the trade as a craft. The same policy prevails with the rank and file of to-day, who are powerless to stop the growth of company pharmacy, and all the grumbling and sneering in the world will not oust facts or bring back the palmy days that chemists rejoiced in without caring what the future of their trading might develop. I consider the letter of Mr. Glass the most to the point of any on the subject now foremost in the minds of many in the trade. As to "D.-T.C.'s" remarks about our being "used as tools and the contempt with which we look upon and speak of our quack masters," his remarks are altogether untrue. I should like to say, in conclusion, that I am not acting as the mouthpiece of Mr. Boot or anyone else, but I like fair play, and I consider "D.-T.C.'s" remarks and suggestions for closing your advertisement columns, etc., to those not qualified more of an insult than the letter he condemns as such.

June 10, 1899. QUALIFIED (190/4).

ANSWERS TO QUERIES.

Special Notice.—*Scientific, technical, legal, and general information required by readers of the 'Pharmaceutical Journal' will be furnished by the Editor as far as practicable and as early as possible, but he cannot undertake to reply by post. All communications must be addressed "Editor, 17, Bloomsbury Square, London, W.C.," and must also be authenticated by the names and addresses of the senders. Questions on different subjects should be written on different slips of paper, each of which must bear the sender's initials. Replies will, in all cases, be referred to such initials, and the registered number added in each instance should be quoted in any subsequent communication on the same subject. When formulæ are given without definite weights and measures, it should be understood that all solids are to be weighed and liquids measured.*

Increased Minor Fee (S. H. E.—30/14).—After August, 1900.

Flora of Sussex (S. H. E.—30/14).—Arnold's 'Flora of Sussex,' published by Hamilton, Adams and Co., London, in 1887, at 3*s.* 6*d.*

Chemistry of the Metals (E. V. W.—30/17).—Roscoe and Schorlemmer's work is probably the most satisfactory for your purpose.

Polishing Paste (F. W. F.—30/5).—Powdered glass in finest powder, 4; ferric oxide, 1; crude oleic acid, *q.s.* to make a paste. Perfume with a little mirbane.

Preparations of Chlorodyne (C. H. W.—30/16).—We should say not, but the difficulty can easily be avoided by using chlorodyne which does not contain the ingredient referred to.

Lemon Kali (A. S. C.—30/18).—Mix well-dried tartaric acid and sodium bicarbonate, each 1, then add powdered white sugar, 2, with which fine essence of lemon has previously been thoroughly blended, in the proportion of about 30 minims to each pound of sugar.

Strength of Solutions (S. H. E.—30/14).—If you mean a book containing tables dealing with the specific gravity and strength of different liquids, you should find Dittmar's 'Chemical Arithmetic' (Hodge and Co., Glasgow. Price 6*s.* net) serve your purpose.

Dead Black for Camera (J. L. G.—30/12).—Procure some drop black ground in turpentine, rub it up with a very little japanner's gold size, and thin to a suitable consistence with turpentine. If too much gold size be used a slight but undesirable gloss will be left after the paint is dry.

Solution of Gutta-percha (J. E. M.—30/7).—Gutta-percha may be dissolved to a thick syrupy liquid in a mixture of benzene and chloroform. When the solvent evaporates, the residue will be solid. Benzene alone may be used, but a mixture of benzene, 3, and chloroform, 1, gives a better result.

Boric Acid in Milk (J. T.—30/11).—A case brought before a magistrate three months ago (see *ante*, p. 241) was dismissed on the ground that the presence of boric acid has not yet been proved to be attended with injurious results, but until there is a High Court decision on the point other magistrates may take a different view.

Tincture of Nux Vomica (C. H. W.—29/10.—As pointed out by Guyer (see *ante*, page 212), the new B.P. tincture is apt to become dim on standing, owing to the deposition of fat, especially in cold weather. You might filter the tincture after shaking it up with precipitated calcium phosphate. Magnesia would not be so suitable in this case.

Clarifying Turbid Oxymel of Squills (W. E. M.—30/6).—Probably the honey you have been using is the cause of your trouble. Take a known weight of the honey, thin it down with water, heat, and add a little precipitated chalk and a liberal dash of finely-powdered animal charcoal; filter while hot through flannel, and evaporate to the original weight of the honey or a little less. Then proceed with the clarified honey as the B.P. directs.

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Pharmacy and the Allied Sciences.

A REVIEW OF CURRENT WORK.

Light-Sensitive Copper Salts. Schneeberger has made a series of experiments with copper salts as a substitute for silver. Cuprous iodide (Cu_2I_2), damped with ammonia, was exposed to sunlight, half being covered over with an opaque card. The exposed part turned a deep blue, whilst the unexposed remained only a pale blue. When air was excluded from it, the exposed cuprous iodide blackened in proportion to the exposure, the unexposed part being white. An emulsion of the iodide was made in gelatin and sensitised in weak ammonia, and the air excluded by petroleum, and a plate coated with this was exposed whilst in the ammonia. It blackened on exposure, but again became white when placed in the dark. When the plate was taken out of the sensitiser, washed, and treated with dilute sulphuric acid, it developed up with a black colour. An emulsion of cuprous oxide (Cu_2O) was also made and exposed, with exclusion of air, in water acidulated with sulphuric acid, and this also blackened, and kept that colour when washed and dried. In this case fixation wa effected by means of dilute hydrochloric acid.—*Brit. Journ Photog.*, 46, 375.

Measuring Volumes. The use of flasks for measuring liquids is recommended by the *British Journal of Photography*, for photographic work, in preference to the graduated measure, with its many disadvantages. Where very close accuracy is not needed, a useful substitute is found in ordinary glass bottles, preferably with wide mouths. A set of bottles of one, two, and four-ounce capacity should be kept at hand, one or the other being employed as needed. When mixing larger quantities of liquids, or when making standard solutions for stock, properly graduated measuring flasks may be used. As an example of processes in which the use of open measure glasses is inadvisable, reference is made to the preparation of pyroxylin. For measuring the acids open measures are entirely inadequate, and the requisite quantity of water should either be taken up by a pipette or measured from a burette. It is asserted that a difference of 10 grains of water in two pints of acid would make a difference of 2 or 3 per cent. in the weight of the gun-cotton produced, and, as is well known, the best test of uniformity of product from a given formula is to be found in the amount of increase of weight the cotton-wool takes on by treatment with the mixed acids.

Nitrogenous Food of Plants. According to experiments carried on by M. L. Lutz, it is possible for flowering plants, when placed in aseptic conditions, to take the nitrogen necessary for their sustenance from organic compounds belonging to the class of amines in the form of salts. The assimilation of these substances may take place without their nitrogen having been first transformed into nitric or ammoniacal nitrogen. Ammoniacal salts composed of alkaloids cannot supply to plants their necessary nitrogen. Algæ placed in similar aseptic conditions present the same phenomena as flowering plants. Fungi have the power also of deriving their nitrogen from amines, as well as from nitric or ammoniacal nitrogen. With them, in regard both to amines and to alkaloids, the intensity of assimilation is in inverse proportion to the size of the molecules.—*Ann. Sci. Nat.* (*Bot.*), 7, 1899, p. 1.

Hand-Made Suppositories. J. La Brown finds it almost impossible to make a workable suppository mass by adding oil to grated cacao butter, as recommended in text-books, and he describes what he considers a more satisfactory method. The required quantity of grated cacao butter (15 grains for each ordinary suppository) is weighed out, 1 grain of powdered acacia added for each suppository, and the whole is mixed thoroughly on a pill tile with a spatula. The medicinal ingredients are then added (extracts being previously rubbed up with a little water), a few drops of water are added from a pipette, and the spatula is again brought into operation, more water being added as required until a mass of proper consistence is obtained. Finish by rolling out and dividing the mass, then shape with the spatula. The resulting suppositories have a slightly higher melting point than if made with pure cacao butter.—*Spatula* 5, 384.

Fruit of Grasses. According to the view of M. P. Guérin, the ovule of grasses has, in general, two integuments, each composed of two layers of cells. The outer integument always disappears shortly after fertilisation, while the inner integument is persistent, and constitutes a true testa to the ripe seed. In some cases, as in *Bromus* and *Brachypodium*, the epiderm of the nucellus takes part in the formation of the integument. In the pericarp the absorption is more or less complete; the endocarp usually persists in the form of long isolated cells or of a sclerified ring. Except in a few cases, there is a complete fusion between the pericarp and the integument of the seed, justifying the retention for the fruit of grasses of the special term caryopsis.—*Morot's Journ. de Bot.*, 12, 365.

Seedless Grapes. Herr Müller-Thurgau attributes the absence of seeds in many varieties of grapes sold in the markets to two causes—functional inefficiency of the pollen and of the ovule. In some varieties the pollen-grains are well developed, but either the pollen-tubes do not reach the ovules or the ovules are themselves incapable of impregnation. To this class belong the sultana-raisins and the currants of commerce. In other varieties, on the other hand, the ovules are perfect and capable of impregnation, but the pollen grains are functionally defective; either the pollen-tubes do not germinate on the stigma, or they are incapable of impregnating the ovules. Grapes which do not contain seeds are smaller than those which do.—*Landwirthsch. Jahrb. d. Schweiz*, 1898.

Hydrocyanic Acid in Plants. M. A. J. van de Ven (*Arch. Néerl. Sci. Exact. et Nat.*, 1899, p. 383) finds the quantity of hydrocyanic acid in the branches of *Prunus lauro cerasus* to decrease with increase of age. The root gave very little evidence of the existence of hydrocyanic acid. In young leaves, when just unfolded, the acid occurs only in isolated groups of cells along the principal veins, the proportion reaching, in the early summer, as much as 2·4 per cent. The amount of the acid in the leaves is decidedly increased by strong insolation. No trace of hydrocyanic acid could be detected in *Vicia sativa* or *Aquilegia vulgaris*. M. A. Hébert, on the other hand (*Bull. Soc. Chim.*, 19, 1898, p. 310), has found traces of hydrocyanic acid, in the stem, leaves, and leaf-buds of *Aquilegia vulgaris* at the commencement of the period of vegetation; also in the young green shoots of the red and black currant and of *Ribes aureum* (but not of *R. sanguineum*), and in the embryo of *Eryobothrys japonica*, belonging to the Rosaceæ. But in no case was the quantity sufficient to furnish an adequate means of defence to the plant.

BOTANICAL NOMENCLATURE.

BY E. M. HOLMES, F.L.S.

It has been suggested by the Editor that information concerning the rules relating to the names of plants might prove useful or interesting, more especially as the subject is scarcely touched upon in the majority of botanical text-books. To this rule Asa Gray's 'Structural Botany,' pp. 345-358 (1879, Trübner and Co.), is a notable exception.

The reasons for the changes in the names of plants in successive pharmacopœias must naturally be rather puzzling, if not exasperating, to students who have no clue to them. These changes arise from the fact that botanical nomenclature has developed gradually, and is still developing, the universal acceptance of fixed laws by botanists not having yet become a fact.

The difficulties that beset the subject will be best described by a brief review of the growth of botanical names. In ancient times one name was sufficient for a plant, the number of species recognised being small and confined chiefly to those which attracted attention or served some useful purpose, either for food, clothing, building, or on account of their beauty or odour, or their poisonous properties.

These ancient names, after passing through the Greek language, became modified with Latin terminations by Roman authors (Pliny, etc.), and may be found, together with others that became known later, in Ainsworth's and other Latin dictionaries. These are the origin of many of the generic names used in botany at the present day.

With the discovery of printing and the use of illustrations in herbals, a closer observation of plants took place, and as more species became known, a second or a third word became necessary to distinguish new plants which were obviously like others in habit but different in certain particulars. Thus such names as *Plantago major*, *Plantago minor*; *Helleborus albus*, *Helleborus niger*; *Pinus sylvestris*, *Pinus sylvestris montana altera*, *Pinus sylvestris montana tertia*, etc., were invented, until gradually names developed into phrases or sentences and became too cumbrous for quotation or ordinary use. These are well seen in the works of C. Bauhin, Morison, Ray, and the older British botanists of the sixteenth and seventeenth centuries.

The language of botanists being Latin, the new generic names invented from time to time usually received Latin terminations. These were obtained from various sources, sometimes they were compounds from Greek words, as Glycyrrhiza; sometimes from Arabic, as Alhagi and Datura; from Chinese, as Thea; or from American aboriginal names, such as Guaiacum and Yucca; and occasionally from classical names not related to botany, as Heracleum, Daphne, Narcissus, and Adonis, etc. In fact, it may be said that no regular rules concerning the names of plants, either genera or species, existed until the time of Linnæus. This celebrated botanist reduced the chaos to order. Seeing the difficulties that arose from the lengthy names of plants, he limited the name to two words, separating the descriptive words of the same and making them more precise, and giving to them the term "specific names." The second word in the name of each plant he called the trivial name. This often was taken from the first double name of the plant, as employed by the older botanists, thus, *Aristolochia longa*, *Plantago major*, and *Helleborus niger* were names employed by Brunfels (1539), Fuchsius (1542), Tragus (1552), and Matthiolus (1570) before the necessity for using three or more words for the name of a plant had arisen. The term "trivial name," however, soon fell into disuse and was superseded by that of specific name, the specific names of Linnæus becoming known as the description, or diagnostic characters. The plan of limiting the name of a plant to two words was made a definite rule by Linnæus, and extended to all known plants, and has ever since been known as the binomial system of nomenclature.

For this simple innovation Linnæus earned the lasting gratitude of all botanists. Like all wise reformers, he saw that arbitrary laws are not readily enforced, and that sudden changes are not easily effected, and therefore decided not to alter existing names more than was absolutely necessary to facilitate the progress of knowledge. Therefore, when in 1751 he published in the 'Philosophia Botanica' a series of rules for botanical nomenclature for the future guidance of botanists, he did not attempt to make them retro-active; and when in 1753 he published his 'Species Plantarum,' in which he gave two names only to every known plant, he retained a large number of the old generic and specific names that were not in accordance with his rules, rather than cause inconvenience to working botanists by the introduction of new ones. Thus the names *Rosmarinus* and *Sempervivum*, etc., are still retained, although contrary to his rule that the generic name should consist of a noun and be a single word. *Pterocarpus marsupium*, *Pinus pumilio*, and *Vicia sepium* are also instances of the specific name being a noun, which is not in accordance with his rule that the specific name should be an adjective. Many of the old generic double names, such as *Uva-Ursi*, *Capillus-Veneris*, and *Bursa-pastoris* were retained as specific names. Some of the Linnean rules or recommendations were not found to work well in practice, and were not followed by subsequent botanists. It will be understood, therefore, that the rules of nomenclature which Linnæus hoped would secure a greater degree of uniformity and precision in the future have been considerably modified by usage. For this reason the Linnean code was revised, and with considerable advantage to botanists, by A. P. Candolle, in his 'Théorie Élémentaire' (published in 1813), in which he laid special stress upon the law of priority being duly respected.

But another difficulty soon confronted botanists. For various reasons the number of synonyms* or alternative names for plants increased so enormously that each succeeding author of any large work on systematic botany found the labour of ascertaining the correct name to apply to any plant to be a heavy burden upon his time, and it was felt that some rules should be laid down once for all, so that no doubt should exist as to the proper name to use.

The following are a few of the circumstances that led to the increase of synonyms.

1. Several of the older genera or species were imperfectly described, and before the details necessary for completion were obtained, other genera or species were described in full detail, under which the plants already described but imperfectly so, were found to fall naturally.

In such cases the genus or species imperfectly described had to be replaced by the later one having a more perfect description.

2. Sometimes botanists in different countries described a plant as new, not having recognised their plant in previously published descriptions, or being in ignorance of any such publication having existed.

3. Sometimes two plants (as in myrrh) were confused under one species, and a second name had to be given to one of the two.

4. The different views concerning species and genera held by different botanists caused some genera and species to be sunk under others, or others to be split up into new ones.

The difficulty of ascertaining which of the numerous synonyms of a plant is the correct one to use was strongly felt by so accurate

* For an instance of synonyms see *Scopola carniolica*, *Pharmaceutical Journal* [3], **20**., p. 469.

a naturalist as Darwin, in accordance with whose intentions his family after his death gave a sum of money to be devoted to the compilation of an "Index to the names and authorities of all known flowering plants and their countries, as a work of supreme importance to students of systematic and geographic botany, and to horticulturists." He was led to this intention by "the difficulties he had experienced in accurately designating the many plants which he had studied, and in ascertaining their native countries."* The outcome of this was the gigantic work entitled the 'Index Kewensis,' in which is given every species of flowering plant known up to the year 1885, with its synonyms, so far as could be ascertained, a reference to the work and the page in the work in which each species was first described, and the native country or regions in which it is indigenous. It does not, however, indicate varieties.

This work, having been done under the superintendence of Sir J. D. Hooker, necessarily reflects to a certain extent his opinion of the names that ought to be retained and those which should be treated as synonyms. This is indicated in the 'Index Kewensis' by printing the synonyms in italics for the species, and in lighter type for the genera. But as this opinion has evidently been influenced to some extent by the publication of important monographs since the date of Bentham and Hooker's 'Genera Plantarum' (1862-1883), the names adopted do not in all cases agree with those in that work, *e.g.*, the *Balsamodendron* of the 'Genera Plantarum' is represented by *Commiphora* in the 'Index Kewensis.' In many cases, but unfortunately not in all the date of the names is given, it being impossible in some cases; but the names which are considered by Sir J. D. Hooker to be the correct ones to retain are not always accepted by Continental botanists as such, or even, in some cases, by the present authorities, at Kew, and, therefore, the 'Index Kewensis' serves chiefly as a work of reference for quickly finding out the synonyms or alternative names of plants and their original descriptions under those names.

Nevertheless, for the present the 'Index Kewensis' serves as the best standard of names extant for those British botanists who accept the rule of priority after 1753, and of the first correct combination of the species with its proper genus. Following this idea, carried out in the 'Index Kewensis,' Dr. Otto Kuntze attempted a wholesale revision of names without ascertaining how far these names were in accordance with other recognised and generally-accepted rules, such as that a genus or species imperfectly described must give way to a later one which is completely described, and the doctrine held by a good many botanists that a name in constant and general use for fifty years or so should not be changed without the gravest reasons. This want of consideration for the work and time of others naturally raised a storm of opposition, and instead of facilitating the work of botanists has given an endless amount of trouble to others to correct his errors. This is utterly in opposition to the principles adopted by Linnæus, whose object was not self-glorification, but to facilitate the work of botanists and the progress of science by giving as much uniformity and precision to scientific names and terms as usage and circumstances permitted.

From all this it is obvious that until an agreement is effected between the leading botanists of all countries to adopt definite rules, one name for a plant will be adopted in one work, and another name in others, involving an appalling waste of time to working botanists and hindering the progress of botanical science. To remedy this evil an attempt was made at the International Botanical Congress at Genoa in 1892 to decide upon some definite rules of nomenclature, especially with regard to the priority of names. It was agreed by the majority of botanists present (1) that the year 1753 (in which the first edition of the 'Species Plantarum' of Linnæus was published) should be accepted as the starting-point for the priority of names. (2) That genera founded upon illustrations or dried specimens without descriptions should not be upheld. (3) That generic names differing even only in one letter such as *Bellis*, *Bellium*, etc., should be maintained.

From this brief history of the growth of botanical nomenclature it will be understood that the change of botanical names of plants in Pharmacopœias depends upon the rules accepted by the botanists in the particular country in which the Pharmacopœia is published. Thus, in the United States, Germany, and Great Britain different names might be given in accordance with the views held in the national botanical establishments of those countries.

It may be useful now to give briefly the more important of the rules carried out in actual practice by the majority of botanists. It is generally recognised that all such rules should be based upon reasons sufficiently clear and cogent to dispose all to accept them. The essential principle to be arrived at is fixity of names and the avoidance of any names that can cause confusion in science. Usages that lead to confusion or errors should not be maintained.

Names of Divisions, etc.

1. The names given to the divisions and subdivisions, classes, and subclasses of plants should be derived from Greek or Latin words, and should, in groups of the same nature, have a definite form and termination—*e.g.*, dicotyledons, monocotyledons, acotyledons; polypetalæ, monopetalæ, apetalæ; or thallophyta, bryophyta, pteridophyta, spermatophyta, etc.

Names of Natural Orders.

2. Families or natural orders should have the termination *aceæ*, with a few exceptions.

Some exceptions justified by usage have been permitted, thus when derived from a name ending in *ix* as Salix, the termination *ineæ*, as in Salicineæ, has been used, or in *is* with the genitive *idis*, the termination *ideæ*, as in Berberideæ, or when the name is long, and there is no tribe in the family ending in *ineæ* the name has been shortened thus Dipterocarpus would be represented by Dipterocarpeæ.

A modification of 2 rule has been adopted by German botanists in the National Herbarium in Berlin, by which all alliances or cohorts are given the termination *ales*; natural orders, *aceæ*, suborders, *oideæ*; tribes, *ineæ*; sub-tribes, *inæ*, the endings to be added to the roots of the generic names, thus Pandanales from Pandanus, Rumicoideæ from Rumex, Asclepiadeæ from Asclepias, Metastelmatineæ from Metastelma, Madinæ from Madia.

This seems an excellent arrangement and does away with the difficulties of natural orders ending in *eæ* or *ineæ*, which traverses the essential principle of the avoidance of all names that can cause confusion in science. It may be hoped that this amended rule will be generally accepted both by authors of students' text-books and by systematic botanists. A few exceptions are still made by the German botanists to these rules, viz., Cruciferæ, Umbelliferæ, Compositæ, Labiatæ, Gramineæ, Ilicineæ, Palmæ. For the last three Graminaceæ, Aquifoliaceæ, and Palmaceæ are so well known that there should be no difficulty in adding them to the list, and for the other notable exceptions the alternative names Brassicaceæ, Apiaceæ, Asteraceæ, and Lamiaceæ were proposed by Lindley about fifty years ago.

These names are even more appropriate than those generally used, since Cruciferæ is not the only family bearing cruciferous flowers, Umbelliferæ not the only one bearing umbels, Compositæ not the only one with capitula, and Labiatæ by no means the only one with labiate flowers. It is not, however, to be expected

* *Vide* 'Index Kewensis' Preface.

that such well-known and widely-used names as these can be changed otherwise than very gradually, if at all, and only by inducing a new generation of botanists to introduce them for the sake of uniformity and clear comprehension and increased facility of study.

Generic Name.

3. The generic name should be a substantive and must be subject to the laws of the Latin and Greek languages. Hybrid names formed from both languages are objectionable. But a few have been retained when consecrated by long usage, *e g.*, *Sapindus*, *Morinda*. When formed from proper names, an *a* or *ia* is usually added, as *Dyera*, *Hookeria*, *Hanburia*. When German names are used, ä, ö, ü become ae, oe, ue, and the French é becomes ë. In some cases the proper name has been shortened and altered beyond recognition—thus, *Gundelsheimer* becomes *Gundelia*, and Goodenough, *Goodenia*. These names, if gaining in euphony, lose in signification, and the practice does not help the memory, but such usages which cause confusion and error should not be followed in future. Some few generic names have adjectival terminations contrary to rule, such as *Scabiosa*, *Gloriosa*, *Impatiens*. These were retained in deference to their long usage.

(*To be continued.*)

LESSONS IN PHYSICO-CHEMISTRY.

Critical Constants.

When a liquid is continuously heated it expands until it reaches its boiling point. As the temperature rises the amount of vapour given off by the liquid increases. When the pressure exerted by this vapour is equal to the existing pressure (of the atmosphere or otherwise) on the liquid the latter passes continuously into vapour, without the temperature rising further until the change of state is complete; in other words, the liquid boils. The temperature at which this boiling occurs necessarily depends on the pressure on the liquid, since, as has just been said, it is the temperature at which the pressure of the vapour formed is equal to the pressure on the liquid. Therefore, if the latter pressure is increased, a higher temperature will be necessary for the continuous passage of the liquid into vapour. When, however, the pressure on the liquid is increased very greatly a condition is at length arrived at in which no amount of heating the liquid will cause it to boil. Under the pressure that has now been reached separation of vapour from the liquid will not take place, and the effect of applying more heat to it is only to make it expand more and more, still remaining in a homogeneous state. The lowest pressure at which this phenomenon occurs is what is called the critical pressure for the substance in question.

Let us now consider the reverse process. Suppose we take a gas, say hydrogen sulphide, collected in a vessel, and by means of a piston or a column of mercury, or in any other way, we increase the pressure on the gas, it undergoes diminution of volume. At length, however, a point is reached at which no further steady contraction occurs, but in place of this the gas begins to condense to a liquid, and further compression only causes more condensation until all the gas has passed into the state of liquid. If now the experiment is repeated, but the gas is maintained at a higher temperature than was employed in the first case, it will be found that a greater pressure is needed to cause its liquefaction; the higher the temperature at which the experiment is conducted, the greater will be the pressure necessary to change it to the liquid state. But by heating the gas more and more, a temperature can be reached at which it cannot be liquefied, even by the highest pressures that can by any means be obtained. Compression of the gas will now only cause slight diminution of its volume, and not separation into two parts, a gaseous and a liquid. The lowest temperature at which this condition is reached is called the critical temperature.

It may, perhaps, appear that the explanations of critical temperature and critical pressure here given are mutually contradictory. For it would seem from what has been said that for any given substance there can be found a pressure at or above which it cannot exist in the gaseous state, however much it may be heated; while on the other hand, there can be found a temperature at or above which it cannot exist in the liquid state, however much it may be compressed. But in the above we have spoken only of changes of state, and said nothing about the state in which the substance exists. The critical pressure is that pressure at or above which no abrupt separation of a liquid into a heterogeneous mixture, partly liquid and partly gas, can occur; the critical temperature is that temperature at or above which no abrupt separation of a gas into a heterogeneous mixture of liquid and gas can occur. When a substance is at its critical temperature, and under its critical pressure, it cannot correctly be called either a liquid or a gas, since under these conditions the gaseous and liquid states are continuous. If the temperature is lowered, the pressure remaining the same, the substance contracts and is seen to be a liquid; if, on the other hand, the temperature is allowed to remain unaltered and the pressure is diminished, the substance expands and is seen to be a gas; but in neither case is there any separation into a heterogeneous mixture of the two.

The critical volume of a given quantity of a substance is the volume occupied by it when it is in this state; that is, when it is at its critical temperature and under its critical pressure. The critical constants of a number of substances have been determined; the first work in this direction was that of Andrews, who in 1869 determined the critical temperature of carbon dioxide (31°·1 C.), and introduced the present conception of the critical constants.

It will be sufficient to indicate in outline the methods by which these constants are determined. To find the critical temperature of a substance, a quantity of it is sealed up in a strong glass tube, which it should nearly fill, and heated steadily in a bath. Formation of vapour proceeds regularly, until at a certain point the meniscus indicating the surface of the liquid becomes irregular and wavy, and then disappears, and the contents of the tube are seen to be homogeneous. The critical temperature has now been reached; if the tube is heated slightly above this point, and then allowed to cool slowly, on again reaching the temperature a mist suddenly appears, and immediately afterwards the meniscus forms, and the tube is seen to be partly filled with liquid. For the determination of the critical pressure, a little of the liquid is put into a narrow tube closed at one end, and connected to a screw pressure pump, from which another tube passes to a gauge. The closed end of the tube containing the liquid, which is directed upwards, is heated to rather above the critical temperature; consequently, in a rather cooler part of the tube, a little way from the heated end, there will be a point of separation between gas and liquid, that is, there will be a meniscus. The pressure is now increased till the meniscus becomes irregular and then vanishes, showing the contents to have become homogeneous. This is the required critical pressure and is read on the gauge. The critical volume cannot be observed directly; the volume of unit quantity of the substance in both gaseous and liquid states at a number of pressures and temperatures near the critical are ascertained; those volumes are plotted in a curve, and the critical volume is found by graphic interpolation (see *P. J.*, [3], **25**, 1141).

HYDRAMINE: A NEW DEVELOPER.

BY LUMIÈRE BROTHERS AND SEYEWETZ.

Among the numerous substances which we have obtained in our experiments on introducing developing groups into amines and phenols, we may draw attention to one of which we have made a special study, which, when used as we describe below, forms an excellent developer. It is a definite combination of hydroquinone and paraphenylene-diamine, obtained by the direct interaction of these two substances, and is, according to our analysis, a molecular compound of these two bodies without the elimination of any elements. It is possible that the two hydroxyl groups of the hydroquinone are saturated by the two amidogen groups of the paraphenylene-diamine, the groups which give rise to the developing properties of the two substances being left intact, as the formulæ represent :—

$$C_6H_4\begin{matrix}OH(1)\\OH(4)\end{matrix}\quad\begin{matrix}(1)NH_2\\(4)NH_2\end{matrix}C_6H_4$$

To avoid the difficulty of naming this compound in accordance with its chemical constitution, we propose giving it the purely conventional name of "hydramine."

Hydramine occurs in beautiful white scales, melting about 194–195° C. to a brownish-red liquid. It is sparingly soluble in water (1 part in 500 parts of cold water), more soluble in hot water (5 per cent. at 100° C.), sparingly soluble in cold alcohol, soluble in acetone, and dissolves easily in acids and alkalies. The alkaline solution becomes gradually brown in the air, but the change is retarded by the presence of soda sulphite. At a boiling heat acids and alkalies decompose it into its two components. Ferric chloride gives, in aqueous solutions, a dark blue colour, changing rapidly to dark red. Excess of ferric chloride converts the compound into quinone.

A plain solution of hydramine in water is a developer of the latent image, but its action is so slow, and the resulting image so feeble, that, from a practical point of view, the developer in this form need not be considered.

Sulphite of soda, added to this aqueous solution, does not increase the developing power, a difference which marks off hydramine from compounds which contain two developing radicles in the same aromatic nucleus. Even if alkaline carbonates be added to the solution, which already contains sulphite, it is not possible, however the proportions of sulphite and carbonate be varied, to develop a vigorous image; the plate develops slowly, and the negative is flat.

If tribasic phosphate of soda is used in place of the carbonate, the development is quicker, and yields a more vigorous, though still flat, image, and this happens whatever proportions of reagents are employed. Acetone and sulphite of soda, in conjunction with hydramine, give an energetic developer, which gives stronger images than does carbonate or tribasic phosphate, but still very inferior to those resulting from the use of a small dose of caustic lithia in the developer. But we will not further dwell on the various ways in which the developer can be "alkalinated," except to speak of what we consider the best, viz., with caustic lithia.

Very small quantities of lithia, added to the soda sulphite solution of hydramine, greatly augment its developing power. The image appears quickly, and the half-tones show a normal gradation. With a view to determine the best formula, we tried various proportions of sulphite and of lithia. We found the best proportion of sulphite to be 15–16 grammes of anhydrous salt per litre (=13–14 grains of crystallised sulphite per ounce). More causes loss of vigour; with less the solution deteriorates quickly. If the lithia is kept below 2 grammes per litre (=$\frac{2}{10}$ grain per ounce), the image is feeble; 3 grammes per litre (1$\frac{1}{3}$ grains per ounce) is the best strength. The addition of any more will not increase the energy of the developer.

We may put the normal developer as follows :—

Hydramine	5 grammes	2½ grains.
Sulphite of soda (anhydrous)..	16 ,,	7 ,,
,, ,, (crystallised)..		14 ,,
Caustic lithia	3 ,,	1⅓ ,,
Water	1000 C.c.	1 ounce.

This solution gives good gradation in the half-tones; the image comes up quickly, gains strength gradually, and can be brought to an intensity equal to that given by the most energetic of developers. Owing to the low proportion of alkali, there is no softening action on the gelatin. The solution, prepared as above, is colourless, and will keep practically unchanged in a corked bottle. It does not stain the skin to any extent worth speaking of.

One point which must be mentioned is its great sensitiveness to the action of potassium bromide. One C.c. of a 10 per cent. solution has a very marked action on 100 C.c. of developer (this is at the rate of ·4 grain per ounce of developer). With 10 C.c. of potassium bromide solution development is quite arrested, so that it will be seen that the developer lends itself freely to the correction of over-exposure.

In conclusion, it is curious to note that the direct combination (without elimination of water) of two bodies possessing developing properties — of which one, hydroquinone, is acid, and the other, paraphenylene-diamine, is basic in character— should give rise to a compound possessed of such striking developing properties as to act properly in conjunction with a small quantity of caustic alkali. That hydramine does act thus must probably be attributed to the fact that the groups of the two components saturate each other.

It is equally interesting to note how different is the action of alkaline carbonates, acetone, sulphite, and tribasic phosphate of soda upon hydramine from what obtains with many developers, with which these alkalies or their substitutes react like caustic alkalies.

Lastly, the retarding action of small quantities of bromide is equally noteworthy, for it is well-known that this is exhibited in connection with only a few organic developers.—*Revue Suisse*, through *British Journal of Photography*.

QUACKS AND QUACKERY.

BY "PHARMACIST"

(*Concluded from page 548*).

The Rev. W. J. Dawson recently wrote that it was absurd for the opinions of boys to be chronicled regarding books. Quite right, but take the *Young Man*, a Christian journal which he edits, and one will find there opinions expressed upon certain drugs by patients who are as ignorant concerning them as the boys concerning literature. Mr. Dawson's paper publishes the Alabone cure for consumption. Now, why not publish the "Jameson" cure for influenza? I can get numerous witnesses who will testify that a bowl of hot whisky punch will cure *la grippe* in a twinkling. Surely there is some moral responsibility for the managers of papers, especially religious ones, or must everything be prostituted to the great money-making craze per quackery?

Then think of the innocents gulled, the loss of practice by doctors, and the loss of trade to the legitimate chemist. I know a poor widow suffering from rheumatism who expended her shillings on "the ono cure for one disease" rubbish. She took two of the pills, and threw the rest in the fire. Another woman

with swollen ankles was persuaded past her will to use Blank's Specific, and the doctor was only called in when the agony wa unbearable; and a pale young lady displayed her purchase for anæmia, costing one fifth of her weekly wage. I said they were a low down fraud, and then I was shown the testimonials of hoary-headed saints or sinners.

Just take the case of an individual who, during the Transvaal raid times, created a little fuss. I think he wrote a book which is now forgotten. He has told us in the *Daily Telegraph* about his illness, dragging in the sacred name of Gladstone *à la fin de siecle* style of advertising. He says, "I found a difficulty in walking straight when passing through the streets." Strange ailment, yet there are not a few who recognise the old symptoms. His distraught appearance also in the published photograph bears out his own words: "I have been forced as early as ten o'clock in the morning (so early !) to hail a hansom in Cheapside, not being able to control my limbs." Ingenuous man !

The disease spread from his limbs to his brain; it usually does. The rest need not be told; it is not edifying, and indeed the narrative should not be put into the hands of young people of either sex. It would absorb too much of their attention and take them from their studies.

Against immoral literature I see the Dundee chemists are making protest. But do they think that so long as Mr. Beecham is backed by the religious gentlemen of the country that he will care one straw for their resolutions, or that he will modify by one tittle the secret enclosure, should it be as vile and morbid as 'La Terre' or Ovid's 'Amatoria'?

The *Methodist Times* has recently advertised certain pills for headache and female ailments, the acme of refinement in journalism. A hair restorer, which if everything that is said about it is true, ought to raise tresses on a billiard ball; coloured pills, seven boxes of which renovated a wrecked system given up by two doctors; an elixir which cures the worst cases of consumption. Lackey Woodhawk opens with an old wheeze and concludes by declaring "they may be taken with perfect safety," which is as much as to say, "if they'll do you no good, they'll do you no harm." A crown treatise on cured consumption cases pronounced "incurable by the most eminent authorities," which I would term an untruth, only it would not suit the occasion. Drayman cures livers, a U.S.A. specific which banishes deafness, and twenty other discoveries which rival the miracles wrought by the Apostles.

Everyone knows, of course, that a journal does not pay by its circulation—its advertisements pay, and though not strictly *en regle*, perhaps it would be requiring a too exact obedience to the Sermon on the Mount to insist in this go-ahead, money-making age that business should be run on such lines, which Archbishop Magee declared to be too stringent for commercial enterprise.

The *Methodist Recorder* advertises a blood mixture, the ubiquitous Beecham, alterative pills, gout pills, chlorodyne, which cures cholera, epilepsy, and palliates cancer—it does not cure leprosy. Consumption cures by the dozen. Old Page Woodcock offers any man £1000 to prove his advertisements false, but denounces some statement as a "cussed lie." "Cussed" is profane, and I am surprised that the editor of the *Recorder* should allow it to appear in his columns.

An entire half-page is devoted to a tonic which some "evangelist" calls "Life." This, of course, is hyperbole, but so are most of the "patent" testimonials. Page Woodcock actually declares "'Tis folly to believe all the patent medicine advertisements." Well, he ought to know. Mr. Congreve's Commissioner interviews a Baptist minister "who for private reasons does not wish his name made public." Ha ! ha !

Even the *Out and Out*, which contains the quintessence of religious balm and is edited by Rev. Gregory Mantle, finds space for the patent pill. This is very sad.

The Rev. Mr. Baxter, although he agrees with no man about anything regarding this life, and has deliberately for the past twenty years told his readers in the *Christian Herald* that the globe will crinkle up nine months from the issue of his last number, yet his columns tell of the wonderful elixirs, etc., and how to live to a green old age.

Consider for a moment the pharmacist's case. The titles of medical men are protected; let anyone assume them and by that means receive emoluments unauthorised by a diploma, he will be promptly and deservedly "jugged." The practitioner is even protected against the advertising of his fellow who may have a long purse. The lawyer is protected by an iron-bound code; even the clergyman of every persuasion holds a status that no one can usurp who is not similarly "set apart." But the pharmacist has hitherto been unable to find means to protect himself, though he spends four years as apprentice to his profession and must finally equip himself with (1) British Pharmacopœia (300 pages of concisely condensed medical wisdom); (2) materia medica (300 pages), containing a history of all the vegetable products of the earth useful in medicine, their order, habitat, source, and preparations; (3) botany, a compendium of numerous orders of plants, their growth, their uses, etc., etc.; (4) 600 pages of organic and inorganic chemistry; (5) a grounding in Latin; (6) a practical acquaintance with pharmacology, being expected to make pills, tinctures, decoctions, etc., etc., and to manipulate the most deadly poisons (regarding which Parliament has drawn up statutes, which the chemist must religiously obey) ceaselessly and with all this responsibility to preserve a steady nerve and cool head.

And when he has attained his degree (which is not always done at the first attempt), it is usually with the object of being able to open up a shop of his own, what does he find? He has not only to combat the legitimate competition of his fellow-pharmacist, but thanks to an indulgent Government and the blessing of a constitutional country, he finds himself confronted with a horde of "spongers" and poachers who can do exactly as he is doing—without any qualification—only, of course, in a varied manner. Every grocer, herbalist, specific-vendor who can publish the most glaring untruths, liability companies which usurp his most cherished privilege—and at back of all these an organised system of advertising which crowds out in dozens of columns in our great dailies and in our Christian journals the reader's *quantum* of news in order that the latest indigestible and insoluble pill may victimise its thousands. Now and again may be seen an odd insertion from some unlucky pharmacist who is thinking of his unpaid accounts and rent. Heaven help him! What is his half-crown notification of name and address with "prescriptions carefully compounded" to the gorgeous and glorious £10 flashes which luxuriate in liardom, and with the full unctuous approval of our leading evangelical weeklies? Perhaps Parliament should pass an Act, insisting that all "patent" medicines should be issued subject to the sanction of the General Medical Council and, when obtained, with a signed and vouched declaration from the Council printed on each bottle, stating for what diseases the contents are suitable. Of course they would need patients on whom to experiment, but I doubt whether the heads of hospitals would consent to the corresponding wholesale slaughter of their charges. In that case the brute creation would have to be requisitioned, or a shipload of dervishes.

I would be strictly impartial, I would take Scott's emulsion, Hunyadi Janos, Beecham's pills, Congreve's consumption cure, etc., etc. If Scott's emulsion was not found "reliable," if the mineral water was not shown to be a "speedy, sure, and gentle aperient," if the pills were found useless for the various ailments, and if Congreve's cure failed—the fact would be recorded, the stipulation being made, however, that where a cure was undertaken, and the patient died, then the proprietor would be sentenced to fourteen days on bread and his own elixir, or pills.

This would be more salutary than capital punishment. There would, of course, be some difficulty in the working of the Act, but not insuperable. For instance, if patients with the necessary diseases were not to be got, or were lacking in courage to be made the media of the direful test, then the General Medical Council might, for a fee, secure certain able-bodied persons, who, consenting to be inoculated with the virus of each malady, would then, for the glory of science, submit themselves to the patent antidote. If such volunteers were in any way damaged ("moral or intellectual") they might claim compensation from the proprietor, and in case of a fatal termination, their next-of-kin could sue.

This would only apply to infallible cures, but where the drug was a professed remedy for influenza, bronchitis, etc., and the patient did not recover within twice the longest time usually taken by medical practitioners, then a fine of £500 should be inflicted for every such offence, and the drug itself should be confiscated and consigned to the 'Index Expurgatorius.'

In the last resort the onus as well as the expense of proof should fall on the owners of such drugs. The Council failing to procure patients, it would then be incumbent on the proprietor to get his own patient and in the presence of Council's witnesses cure or kill him. Twenty successes as a minimum would be required before the patent should be legalised. These proposals, I conceive, would thin out a goodly number of proprietary articles deemed indispensable to the salvation of the nation, and it would also act as a deterrent to others who felt any inclination to indulge in free-lance pharmacy.

AUSTRALIAN INDIGENOUS VEGETABLE DRUGS.*

BY J. H. MAIDEN,

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(Corresponding Member of the Pharmaceutical Society of Great Britain.)

PART I.

(*Continued from page 550.*)

LEGUMINOSÆ.

Albizzia lebbek, Durazz.

Contains saponin.

Queensland.

Albizzia lophantha, Benth.

The dry root contains about 10 per cent. of saponin. (Rummel.)

Western Australia.

The leaves, bark, root, and pods of all Australian species of *Albizzia* and *Pithecolobium* should not only be examined for saponin, but also for pithecolobine, an amorphous alkaloid, a deadly fish-poison, found in the bark of *P. bigeminum* and *P. saman*.

Archidendron vaillantii, F. v. M.

The pods contain beans which possess a black colour, and nauseous, hot taste. The bark also is hot and acrid. Alcoholic extract of the dried bean was made, 5 grains of which, suspended in a few minims of water, were injected under the skin of a kitten, which died asphyxiated in a few hours. The bark was found to be more poisonous than the bean or leaves. Guinea-pigs poisoned with this substance have painful convulsive movements of the whole muscular system, increasing in frequency and force as the poison gets absorbed. The hind legs get paralysed, and the animals lie in a helpless state for many hours before they die, and utter feeble cries when moved about. After death the muscles contract when cut across, or when stimulated through their nerves up to their exit from the cord. Neither the motor nor the sensory nerves seem to be affected. The substance kills by paralysing the reflex function of the spinal cord. (Dr. T. L. Bancroft, in 'Proc. R.S., N.S.W.,' 1886, p. 70.) Queensland.

Cæsalpinia nuga, Ait.

It is said that the roots are used in Asia in decoctions for calculus and nephritic complaints. (F. M. Bailey.)

Queensland.

Cassia absus, Linn.

The seeds of this plant, which also grow in Egypt and India, are bitter, aromatic, and slightly mucilaginous. They are used in Egypt as a remedy for ophthalmia. ('Treasury of Botany.') For this purpose the grains are reduced to fine powder, and a small portion, a grain or more, introduced under the eyelid. It was tried with success in an epidemic of purulent ophthalmia which visited Brussels in 1822. ('Pharm. of India.')

It is a remedy which should be used with caution.

Queensland and Northern Australia.

Cassia glauca, Lam. (of Java), contains an alkaloid in its leaves. (Greshoff. 'Ber.,' 23, 3537. 'Journ. Soc. Chem. Ind.,' 10, 269.)

The glucosides cathartic acid and sennapicrin have been found in the leaves of certain non-Australian species of Cassia, and might be looked for in our Australian ones. See Sohn, p. 25.

Cynometra ramiflora, Linn., var. *bijuga*. (Syn. *C. bijuga*, Spanoghe.)

The root is purgative. In India a lotion is made from the leaves boiled in cow's milk, which, mixed with honey, is applied externally in scabies, leprosy, and other cutaneous diseases. (Rheede.) Queensland.

Daviesia latifolia, R. Br.

The leaves of this shrub possess a very persistent bitter taste, which obtains for it the name of "Native Hops." I have often chewed the leaves as a tonic; I believe with success, but others consider it possesses a higher value. J. Bosisto has a note on the plant in 'Proc. A.A.A.S.,' 1890, p. 554, in which he draws attention to the fact that it is "a favourite remedy for low fevers and for expelling hydatid cysts" in Victoria. He points out that it contains a crystalline body and an oleo-resin. Mr. James Stirling wrote to me that it is used for gleet, gonorrhœa, etc., by some Gippsland miners. Bosisto has a further note on the plant in 'Pharm. Journ.,' [4], 6, 187 (February 26, 1898), and at the same place is a paper by Dr. B. H. Paul and A. J. Cownley entitled "Examination of the Crystalline Substance obtained from *Daviesia latifolia*." Only a small quantity was available, and the authors state that the substance placed at their disposal is "either of a glucosidal character or of the nature of a plant sugar." Further examination is promised on a larger supply of the leaves being received.

A note in the 'Agric. Gazette' for March, 1894, p. 143, may be referred to.

Tasmania, Victoria, and New South Wales.

Derris.

For notes on the use of *Derris* (*Pongamia*) *elliptica*, Benth., as a fish-poison in Java, see 'Gazette' for July, 1894, p. 471.

A bitter principle, Derrid (? identical with Pachyrhizid from *Pachyrhizus*), has been found by Greshoff in the bark of the root. One part dissolved in five million times its weight of water is a

* From the *Agricultural Gazette of New South Wales.*

powerful fish-poison. ('Ber.,' 23, 3537; 'Journ. Chem. Soc.,' 60, 335.)

Our native species of *Derris* and *Pongamia* should be examined for Derrid.

Entanda scandens, Benth.—"Queensland Bean," "Leichhardt Bean."

The properties of the seeds do not appear to have been tested in European practice; among the natives of India they have the reputation of being emetic. An infusion of the spongy fibres of the trunk is used with advantage for various affections of the skin in the Philippines. (Dymock, 'Materia Medica of Western India.') Queensland.

Erythrina indica, Lam.—"Coral Tree."

Wight states that the leaves and bark are used as a febrifuge. Kanni Loll Dey, in a communication in the Calcutta Exhibition Catalogue, says:—"It is anthelmintic and useful as a collyrium (*i.e.*, eye-salve or eye-wash) in ophthalmia. The leaves are applied externally to disperse venereal buboes and to relieve pain in the joints." In the Concan, the juice of the young leaves is used to kill worms in sores, and the young roots of the white-flowered variety are pounded and given with cold milk as an aphrodisiac. (Dymock, 'Materia Medica of Western India.')

It is not likely that these properties are not shared by the other species of Erythrina. For an account and alkaloids in this genus see Greshoff, 'Ber.,' 23, 3537. ('Journ. Chem. Soc.,' 60, 335.)

Erythrophlœum laboucherii, F. v. M.—Leichhardt's "Leguminous Ironbark."

Said by Baron von Mueller to contain Erythrophlœin, the active principle in *E. guineense*.

Northern Queensland.

Galactia varians, Bail.

For an account of the medicinal properties of the root of this Queensland plant see Dr. Lauterer ('Proc. R.S., Qd.' 12, 93). It owes its value to the presence of a sticky yellow acrid resin, of which Dr. Lauterer says: "The resin might be recommended in rheumatism, skin diseases, scrofulosis, and syphilis, and in rheumatism and skin diseases it might surpass guaiacum in quickness and certainty of effect."

Queensland.

Gastrolobium bilobum, R. Br.

One of the so-called "Poison-bushes" dangerous to stock. See 'Agricultural Gazette' for Jan., 1897, p. 5. Rummel, 'J. Chim. Min.,' 1880, p. 1032, has found a glucoside, which he terms Gastrolobin, in this plant.

Western Australia.

Guilandina bonducella, Linn. (Syn. *Cæsalpinia bonducella*, Fleming).—The seeds are called "Molucca Beans," or "Bonduc Nuts," and "Nicker Nuts."

The kernels of the nuts are very bitter, and are said by the native doctors of India to be powerfully tonic. They are given in cases of intermittent fevers, mixed with spices in the form of powder. Pounded and mixed with castor oil they are applied externally in hydrocele. At Amboyna the seeds are considered anthelmintic, and the root tonic in dyspepsia. In Cochin China the leaves are reckoned deobstruent and emmenagogue, and the root astringent. The oil from the former is used in convulsions, palsy, and similar complaints. In Scotland, where they are frequently thrown on the sea-shore by the currents, they are known as "Molucca Beans." (Drury.)

For a full account of the properties of these seeds see "Nouvelles Recherches sur Le Bonduc et sur ses Graines," by MM. E. Heckel et Fr. Schlagdenhauffen, 2 eetude ('Nouveaux Remèdes,' March 15 and April 1, 1886).

Northern New South Wales, Queensland, and Northern Australia.

Hardenbergia monophylla, Benth. (Syn. *Kennedya monophylla*, Vent.)—Commonly, but wrongly, called "Native Sarsaparilla."

The roots of this plant are sometimes used by bushmen as a substitute for the true colonial sarsaparilla (*Smilax*), but its virtues are purely imaginary. It is also a common thing, in the spring, in the streets of Sydney, to see persons with large bundles of the leaves on their shoulders, doubtless under the impression that they have the leaves of *Smilax glycyphylla*.

See 'The Flowering Plants and Ferns of New South Wales,' No. 20.

All the colonies except Western Australia.

Indigofera enneaphylla, Linn.

An infusion of the whole plant is diuretic, and as such is given in fevers and coughs in India. (Ainslie.) It is not endemic in Australia.

South Australia, New South Wales, and Northern Australia.

Mucuna gigantea, DC.

Used in India in rheumatic complaints. The bark for this purpose is pulverised, mixed with dry ginger, and rubbed over the parts afflicted. (Rheede.)

Dr. T. L. Bancroft failed to find an active principle in this plant. ('Proc. R.S., Qd.,' 1887.)

New South Wales to Northern Australia.

Pongamia glabra, Vent.—"Indian Beech."

This tree also grows in tropical Asia and Fiji. In India an oil (called Poonga oil) is extracted from the seeds for use as an illuminant, and as an application in scabies, herpes, and other cutaneous diseases. The oil is also much used as an embrocation in rheumatism. A poultice of the leaves is a popular application in India to foul ulcers. The plant is used medicinally in various ways, and for various purposes, by the people of India. (Dymock.)

Dr. Bancroft ('Proc. R.S., N.S.W.,' 1886, p. 70) points out that all parts of this plant contain a principle of great activity as an emetic. Frogs poisoned with extract of the bark vomit for several hours, after which they become torpid, and generally die within forty hours. (See 'Derris,' p. 1118.)

Queensland and Northern Australia.

Sesbania ægyptica, Pers.

In India the leaves of this shrub are used as a cataplasm to promote suppuration. ('Cyclop. of India.') The warmed leaves are simply moistened with a little castor oil.

Queensland and Northern Australia.

Sophora tomentosa, Linn.—"Sea-coast Laburnum.

The roots and seeds have been considered as specifics in bilious sickness.

In fact, it was formerly renowned in the Dutch Indies as a medicine ("*Anticholerica rumphii*"). It contains a poisonous alkaloid, soluble in ether, which is contained in largest quantity in the seeds. Alkaloids have previously been found in *S. speciosa* and *S. angustifolia*, but have not been closely investigated. Greshoff ('Ber.,' 23, 3537; 'Journ. Chem. Soc.,' 60, 335).

See also Pieter G. Plugge ('Arch. Pharm.,' 1895, 233, p. 430; 'Journ. Chem. Soc.', 70, 61), who finds cytisinein *Sophora* and other Papilionaceous genera.

New South Wales to Northern Australia.

Tephrosia purpurea, Pers.

For a note on this plant as a fish-poison, see the 'Gazette' for July, 1894, p. 472.

Western and South Australia, New South Wales to Northern Australia.

ROSACEÆ.

Geum urbanum, Linn.

Buchner, 'Report. Pharm.,' 85, 184 (Sohn, p. 55), has found an amorphous yellow, neutral bitter principle, which he calls "Geum bitter," in this plant, which occurs in Europe as well as in all the colonies except Western Australia and Queensland.

Rubus.

A glucoside Villosin (with Villosic acid, a derivative) has been obtained by G. A. Krause (Sohn, p, 87) from the root of the North American *R. villosus.* We have five species of *Rubus* in the colonies, some of them very abundant; Villosin might be looked for in these.

DROSERACEÆ.

Drosera

Australia is the land of *Droseras*, but I am not aware they have ever been utilised for medicinal purposes. In 'Pharm. Journ. [3], 9, 600, is an account, extracted from 'New Remedies,' of some experiments by Dr. Curie, of Paris, on the medicinal action of tincture of Drosera (whole plant) in phthisical complaints, he having been led to his experiments by the fact that centuries ago it was employed in medicine for such a purpose. According to M. Vigier the trials of the drug by Dr. Curie in phthisis seemed to show very favourable results, but upon further analysis of the cases, he was disposed to think that those presenting symptoms of bronchitis were most favourably influenced. Drosera is used by homœopathic practitioners in the treatment of spasmodic cough from any cause.

RHIZOPHOREÆ.

Rhizophora mucronata, Linn.—A "Mangrove."

The bark has been tried medicinally in cases of hæmaturia, but with what result I have been unable to learn. For notes on the medicinal utilisation of the astringency of this tree, see 'Pharm. Journ.' [1], 6, 11.

New South Wales to Northern Australia.

MYRTACEÆ.

Barringtonia acutangula, Gaertn.

In India an extract or juice is obtained from the leaves of this tree which, when mixed with oil, is used in native practice for eruptions of the skin. The kernels, powdered and prepared with sago and butter, are used in diarrhœa; mixed with milk they produce vomiting. ('Treasury of Botany.') The root is bitter, and is said to be similar to cinchona, but also cooling and aperient. (Drury.)

Northern Australia.

Barringtonia racemosa, Gaud.—Erroneously called "Fresh-water Mangrove."

The root of this tree has a bitter taste, and is used by Hindoo practitioners on account of its aperient and cooling qualities. The seeds and bark are also used in native medicine; the latter is of a reddish colour, and is said to possess properties allied to the cinchonas. The pulverised fruit is used as snuff, and, combined with other remedies, is applied externally in diseases of the skin. ('Treasury of Botany.')

See 'Gazette' for July, 1894, p. 471.

Queensland.

Careya arborea, Roxb. (Syn. *C. australis*, F. v. M.)

A poultice made of the "pulp" of the leaves is a valuable remedy in inveterate ulcers. (Armit, 'Journ. Linn. Soc.' [Bot.], 20, 69.)

For a note on this plant as a fish-poison see the 'Gazette' for July, 1894, p. 471.

Queensland and North Australia.

THE STUDENTS' COLUMNS.

ZOOLOGICAL NOTES FOR PHARMACISTS.—XV.

Glands Forming Materia Medica (continued).

Supra-renal Capsules.—Triangular bodies situated at the upper side of the kidneys—produce a substance which is necessary to the proper tone and action of the muscles.

Pituitary Body.—A small two-lobed structure on the underside of the brain, formed originally from a downward extension of the diencephalon and an upward extension of the buccal cavity wall, function unknown.

Pineal Gland.—Situated on the dorsal side of the brain, an upward extension of the diencephalon—is a vestigial sense organ, and in some reptiles still develops into such and persists as a median eye.

Spleen.—Placed on the left of the stomach, between it and the diaphragm. The gland consists of a pulpy mass and is the main source of the white blood corpuscles.

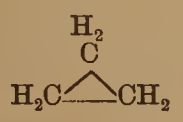
EXPLANATORY NOTES ON THE B.P., 1898.

Phenazonum.—The constitution of phenazone is somewhat difficult for the student to understand. The constitutional formula given in the Pharmacopœia shows that it is a phenyl-dimethyl derivative of a body called pyrazolone. In order to explain the nature and constitution of this body it will be necessary to discuss the principles of the scheme of classification adopted in organic chemistry. Carbon compounds may be broadly divided into

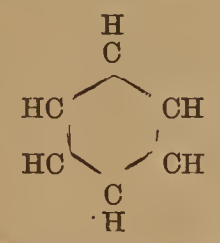
1. Fatty or aliphatic compounds.
2. Benzene or aromatic compounds.

The substances comprised in the first of these divisions are derived from hydrocarbons containing an open chain of carbon atoms, the term aliphatic being derived from the Greek word meaning "fat."

The second division—the benzene compounds—are characterised by containing a closed chain or ring of carbon atoms, and for this reason are also known as "cyclic" compounds. Many substances are now known, however, which contain a closed ring not composed, like benzene, entirely of carbon atoms, but of oxygen sulphur, and nitrogen as well. The "cyclic" compounds are hence further classified into "carbocyclic" or "isocyclic," containing a closed ring of carbon atoms like trimethylene and benzene,

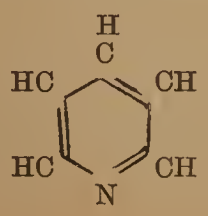


and

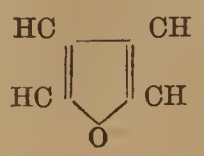


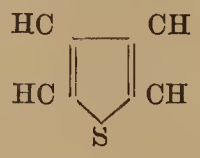
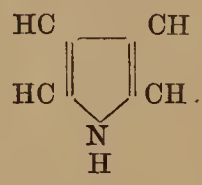
and "heterocyclic" compounds which contain in the closed ring other elements as well as carbon. The most familiar examples of heterocyclic compounds are:—

Pyridine



furfurane

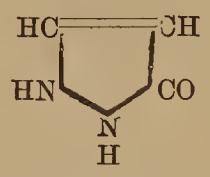


thiophene  pyrrol 

The scheme of classification is then as follows :—

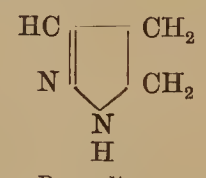
1. Aliphatic or open-chain compounds.
2. Cyclic or closed-chain compounds, divided into
   - A. Carbocyclic or isocyclic compounds.
   - B. Heterocyclic compounds.

Pyrazolone, the ring nucleus characteristic of phenazone, is, therefore, a heterocyclic compound containing a closed chain of three carbon and two nitrogen atoms.



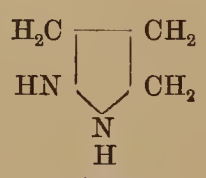
pyrazalone

Its name and constitution recall the fact that it belongs to the pyrrol group (see the formula for pyrrol given above). The connection is shown in the following way. Pyrrol contains one nitrogen atom in the closed ring, while pyr*a*zol is another heterocyclic compound of the same type, containing *two* nitrogen atoms in the ring. This is indicated by the introduction of the letters "az" in the name pyr*a*zol. If pyrazol be treated with nascent hydrogen, it takes up two atoms and then four, giving



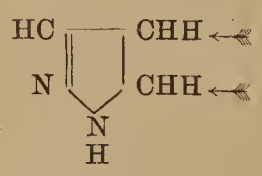
Pyraz*o*line.

and

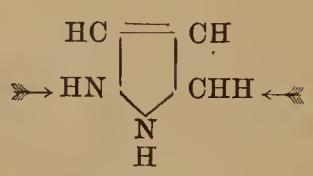


Pyraz*o*lidine.

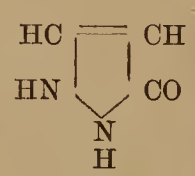
This behaviour is similar to that shown by benzene and pyridine when submitted to the action of nascent hydrogen. By carefully comparing the formulæ, it will be seen that pyrazolone differs from pyrazoline in containing an oxygen atom in place of two hydrogen atoms. It is therefore a ket*one* of pyrazoline, and this is indicated by changing the termination *ine* into *one*. The prefix iso- indicates that the iso pyrazolone is one of the possible isomers of normal pyrazolone, the difference consisting in the position occupied by the two hydrogen atoms taken up in the reduction of pyrazol to pyrazoline.



pyraz*o*line



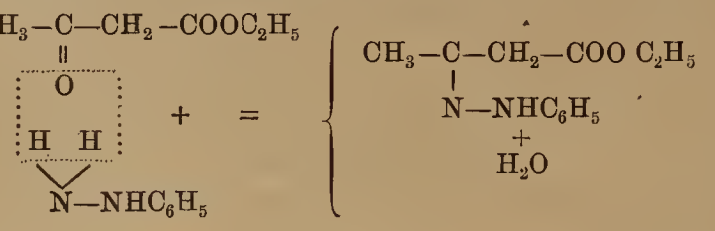
iso-pyrazol*ine*



iso-pyrazol*one*

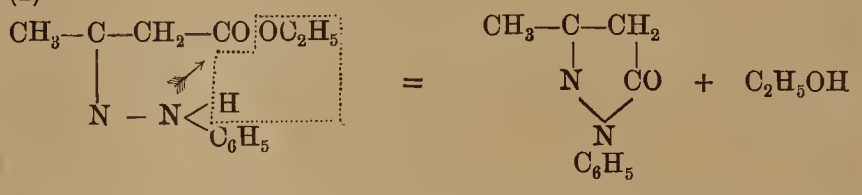
The formation of phenazone is an example of the production of a cyclic compound from two open chains. It is made by treating phenyl-hydrazine with aceto-acetic ether. The reaction first results in the production of a hydrazone, which is quite typical of the behaviour of phenyl-hydrazine towards ketonic and aldehydic derivatives, *i.e.*, bodies which contain the carbonyl group $=C=O$. Compare in your text-book the reaction of phenyl-hydrazine with sugars. Aceto-acetic ether is the ethyl ester of β keto-butyric acid, $CH_3^{\gamma}\cdot CO^{\beta}\cdot CH_2^{\alpha}\cdot CO\,OH$. The carbon atoms, proceeding from the carboxyl group, are distinguished by the Greek letters in order to show where the substituting element or group is believed to occur. The reaction between β keto butyric ethyl ester and phenyl-hydrazine may be represented in two stages :—

(1)



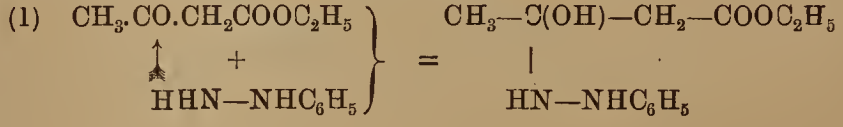
a molecule of water being produced from the oxygen of the ketone group and the hydrogen of the amido group in the phenyl hydrazine. This is the characteristic reaction referred to above resulting in the formation of a hydrazone. When this is heated a molecule of alcohol is eliminated, with formation of the closed ring—the pyrazolone derivative :—

(2)



The body so produced is phenyl-methyl-pyrazolone, but the reaction is not quite so simple as represented, because we actually get phenyl-methyl-*iso*-pyrazolone. Compare the formulæ for normal and iso pyrazolone given above. The most probable explanation of this apparent wandering of a hydrogen atom is shown in the equations below, where (1) an additive compound is first formed, the carbonyl oxygen being converted into hydroxyl, (2) water is eliminated by the union of the hydroxyl and a hydrogen atom of the neighbouring CH_2 group, and (3) separation of alcohol with formation of phenyl-methyl-*iso*-pyrazolone.

(1)



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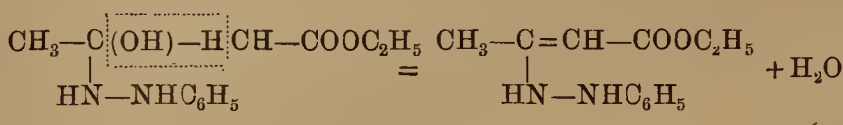

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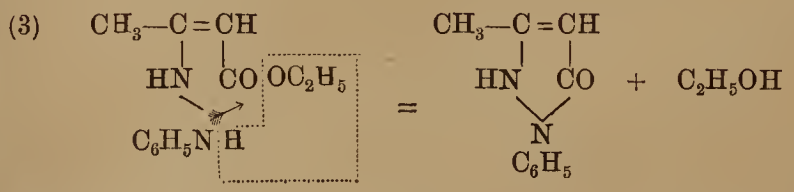
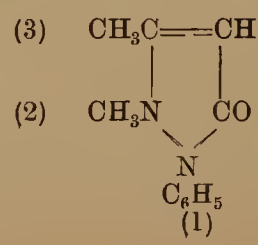


The phenyl-methyl-iso-pyrazolone is then heated with methyl iodide and methyl alcohol, by which substitution of a methyl group is effected for a hydrogen atom in the position shown below, such a compound being further distinguished from possible isomers by describing it as (1), (2), (3), phenyl-dimethyl iso-pyrazolone to indicate the position taken up by the groups entering the ring



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PHARMACEUTICAL JOURNAL.

A Weekly Record of Pharmacy and Allied Sciences

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PRESENT ASPECT OF LEGISLATION AFFECTING THE PRACTICE OF PHARMACY.

THOUGH the Pharmacy Act Amendment Bill introduced into the House of Lords falls short of providing either a remedy for the interference with the privileges of legally qualified chemists and druggists, resulting from the exercise of their business by companies of unqualified persons, or a satisfactory means of doing away with the anomalous state of the law relating to that business, the altered form in which the provisions of the Bill have appeared in the second clause of the Companies Bill, since introduced by the Earl of DUDLEY, presents one feature which appears to constitute a very important difference from the Pharmacy Bill, as originally proposed by the LORD CHANCELLOR, and, probably, to indicate a very material alteration of opinion on the part of those concerned in the promotion of legislative measures affecting the practice of pharmacy. From the general wording of the clause referred to, the legality of carrying on the business of a chemist and druggist by a company of any kind appears to be taken as having been established by the decision of the House of Lords in 1880, as well as the legality of using the description of chemist and druggist in connection with that business. That assumption is precisely what might be expected in a Bill drafted from a purely legal point of view. But the clause is nevertheless remarkable because, in place of giving unlimited legal effect to the House of Lords' decision, and also going beyond that decision, as in the LORD CHANCELLOR'S Pharmacy Bill, by authorising companies to carry on the business and use the title of chemist and druggist, so long as the business is *bonâ fide* conducted by a duly registered person, as manager or assistant, a further condition has been imposed that—unless the name of the qualified person conducting the business of a company, either as manager or assistant, is conspicuously posted in the shop where the business is carried on—a company may not carry on the business of a chemist and druggist. That alteration may prove to be of very great importance, inasmuch as it appears to indicate recognition, to some extent, of the necessity for qualification of the individual who has the actual control and responsible direction of a chemist and druggist's business. That condition of proprietary qualification has always been insisted upon by the Pharmaceutical Society as being absolutely essential, in the interest of the public, and since chemists and druggists have, with that object, acquired individual privileges under the operation of the Pharmacy Act, 1868, there is now a further ground for objecting to the unjust appropriation of those privileges, through the medium of the Companies Acts, which the LORD CHANCELLOR'S Bill would have definitely legalised.

In that respect the alteration of the clause relating to the carrying on of a chemist's and druggist's business by a company may have considerable significance, as showing approximation to the view held by members of the Pharmaceutical Society as well as by chemists and druggists generally. From the report and minutes of the Select Committee of the House of Lords, just received, it appears that the clause referred to, as well as that relating to the medical profession, was inserted in the Companies Bill at the meeting held on April 24; but no information is there given to show how that came about. Nor is there anything to show how the business of a company can be *bonâ fide* conducted by a qualified person in the position of an assistant, or even that of a manager, in either of which he would really be in the service of the company and subject to control by the directors. Moreover, it does not appear what significance is to be attached to the words *bonâ fide* in connection with the conduct of a company's business by a qualified manager or assistant. But the alteration may indicate a disposition on the part of the LORD CHANCELLOR to adopt a more considerate line of action that would enable the Council of the Pharmaceutical Society of Great Britain to co-operate in the drafting of a Bill—in the manner suggested by Mr. WALTER HILLS when addressing the annual meeting as President—a proceeding which, in some form or other, must after all be the case before any legislative measure affecting chemists and druggists can be carried through.

But even supposing that the possibility referred to by the late PRESIDENT at the April meeting of the Council should be forced upon chemists and druggists, and assuming that, in such case, satisfactory arrangements could be made for the business of a company to be conducted by a legally qualified manager or assistant, in such a way that his control of the business would be as thorough as if he were the actual proprietor, there would still remain the question as to the right to use the title of chemist and druggist, indicative of qualification to carry on the business under the Pharmacy Act, 1868; and there would also be the still more important question as to the use of the title of pharmaceutical chemist obtainable only by a voluntary qualification under the Pharmacy Act, 1852. In regard to those questions, the proposals of Clause 2 of the Companies Bill are quite as unsatisfactory as those of the LORD CHANCELLOR'S Pharmacy Bill, and as objectionable as the present practice of companies consisting of unqualified persons. If the decision of the House of Lords is to be held as a valid legal precedent, any attempt in the Courts to stop the use of the title of chemist and druggist by companies, even of unqualified persons, would most probably be futile, and there is every reason for thinking that the effect of that decision in this respect can only be destroyed by legislation. It is to that feature of the Bills now before the House of Lords that especial attention will have to be directed by those properly entitled to use these titles. On that point there must be strenuous opposition—and if legally qualified chemists and druggists, or even pharmaceutical chemists, cannot individually be induced to abstain from supporting companies, by placing their services and the use of their qualifications at the disposal of unqualified persons carrying on business as companies, there should be, in any amended Pharmacy Bill, very stringent provisions for upholding the personal value of the legal qualification which has become, in itself, a property entitled to respect as well as useful for the protection of the public.

ANNOTATIONS.

THE BOARDS OF EXAMINERS of the Pharmaceutical Society of Great Britain will meet next month to conduct the oral portions of the Major, Minor, and Modified Examinations, and it had been announced that the written and practical portions of the examinations would commence on July 3. As it happens, however, there has been an unprecedentedly large number of entries for the qualifying examination—more than six hundred and fifty names appearing upon the list—and it has therefore been found necessary to commence the practical portion of the examination on Wednesday, June 28, four days earlier than had been arranged. The large number of candidates on the present occasion is, of course, partly due to the fact that the session is approaching a close at the School of Pharmacy and kindred institutions. But as there are about two hundred more entries for the Minor than for tho corresponding examination last year, there are apparently other influences at work to swell the numbers of those presenting themselves. Whatever may be the cause, it is interesting to note that a business which is frequently said to be already overcrowded, and alleged to be incapable of providing proper remuneration for those entering it, should yet be able to attract such increasingly large numbers of persons, presumably well acquainted with the existing position of affairs.

THE NORTH BRITISH BRANCH of the Pharmaceutical Society continues to progress, and Mr. Laidlaw Ewing's record of the excellent work done during the past year north of the Tweed (see p. 580) will be read with interest by the members of the Society generally. So far as can be inferred from the number of voting papers issued for the election of the Scottish Executive Committee, the membership of the Society in Scotland has increased by one hundred and fifty-eight during the past twelve months, but the actual increase is probably less than that. The additions to the ranks, therefore, do not appear very large, the more especially when allowance is made for the fact that the number stated includes about seventy per cent. of those who were formerly connected with the Society as associates in business, and probably also a fair proportion of former associates who were not in business on their own account. At the same time, development in the right direction is indicated, and doubtless the number of members resident in Scotland will henceforth show a steady increase as each successive year elapses. The examination statistics quoted by Mr. Ewing show a falling off in the number of candidates who have presented themselves for examination at Edinburgh, but that indicates nothing beyond the fact that the swing of the balance is first in favour of one centre and then of the other, according as the impression prevails that it is easier, for the time being, to satisfy the examiners at one place rather than the other. Support is lent to this view of the case by the fact that the percentage of passes at Edinburgh has recently shown a slight increase, seeming to indicate that the ill-prepared candidates prefer London to Edinburgh for the time being.

MR. MABEN'S OPINION (see p. 581), that the importance of the Scottish Executive has been minimised by the Council, by the non-publication of a report of its work during the year, is absurd on the face of it, since everything discussed or done by the Executive has been fully reported in the Society's official Journal from time to time, in addition to which everything of importance in the year's work is now referred to in the report of Mr. Laidlaw Ewing's remarks. Moreover, it is surely within the discretion of the Council to decline to publish the reports of any of its committees. Apart from that, however, members of the Society who do not take notice of reports of proceedings when the matter is fresh are hardly likely to trouble to read hashed-up summaries of those reports some months later, and, so far as Mr. Maben's grievance in this particular case is concerned, we can only congratulate him upon having nothing more serious to worry about. Everything of interest to the members of the Society generally, which is done in connection with the North British Branch, is duly recorded in the *Pharmaceutical Journal* at the proper time. If it be desired, at the end of a year, to emphasise what has been done by the executive committee acting as a local association, that is surely best done by printing a report as other associations do and circulating it amongst tho members of the association. The annual report of the Pharmaceutical Society is printed and circulated to all the membors of the Society in May of each year, and it is difficult to see what reason exists for the similar publication of any sectional reports drawn up by local committees.

THE STRENGTH OF THE SOCIETY in Scotland, as regards members, appears now to be less proportionally than it was a year ago. Between May, 1898, and May, 1899, the total membership—as indicated by the number of voting papers issued for the election of the Council—increased from 3756 to 5468; whilst between June, 1898, and June, 1899, the approximate number of members resident in Scotland—as indicated by the numbor of papers issued for the election of the Scottish Executive—increased from 412 to 570 only. That is to say, whilst the members resident in Scotland constituted nearly one-ninth the total strength of the Society in 1898, they now constitute but little more than one-tenth. The actual increases in the membership—1712 altogether, 158 or less in Scotland—stand in the proportion of about 11 to 1. On the whole, therefore, Scotland can scarcely be regarded as the best recruiting ground of the Society. Having regard to the special advantages enjoyed by Scottish members and the greater proportionate amount spent on the North British Branch, this is a cause for regret, and it is to be hoped that the implied reproach conveyed by the figures contrasted above may be removed before another year has elapsed. There is no excuse for ultra-provincialism in Scottish pharmaceutical circles, since the facilities afforded in Edinburgh are for the most part virtually identical with those enjoyed in London by members of the Society, and yet it is to be feared there is grave reason for thinking that such a feeling does prevail to an undesirable extent. The Pharmaceutical Society is a national institution, not a London or a Scottish one, and the more clearly that position is comprehended, the more likely are the intentions of its founders to be properly fulfilled.

THE COMMENTS OF 'TRUTH' on the proposal in the Companies Acts Amendment Bill to prohibit the practice of dentistry by companies do not, of course, commend themselves to dentists, and the *British Journal of Dental Science* is not slow to remark that "*Truth* is, as usual in these matters, untrue." It was contended by *Truth* that dentists should be omitted from the Bill, on the ground that the effect of including them would be to the disadvantage of the poorer classes, that the public would be no better protected against incompetence and quackery if the Bill passed, and that associations of duly qualified dentists would not then be able to avail themselves of the limited liability laws, though an unregistered combination of unqualified persons would be able to practise dentistry so long as the use of dental titles was avoided. In reply to these assertions, it is insisted that the poorer classes will find plenty of private dental practitioners who will treat them in a better and less expensive

manner than many of the companies whose methods have come under notice. It is also denied that to pass the Bill as it stands would be to prevent associations of qualified dentists practising, and to enable unregistered combinations of unqualified persons to practise dentistry. Those assertions, however, are no answer to the statements in *Truth*, which were to the effect that associations of duly qualified dentists would be prevented registering under the Companies Acts if the Bill passed, and that companies not registered under the Companies Acts would not be hit by a clause aimed at registered companies only. The fact of the matter is that, as regards medicine and dentistry, as well as pharmacy, the provisions of the Companies Acts Amendment Bill are absurdly insufficient and unworkable as they stand.

Returning to the Charge, the Editor of *Truth* points out this week that, whilst there seems to be no doubt a real evil exists, which the Lord Chancellor's proposals—so far as they apply to medical and dental companies—will do something to check, the Bills introduced by Lord Halsbury are mere pieces of legislative patchwork. The Medical and Dental Acts do not prevent unqualified persons from practising, but simply protect titles, and not even that when they are employed by associations registered under the Companies Acts. The Lord Chancellor has sought to remedy this state of affairs, but, according to *Truth*, everything short of a law defining the qualifications which entitle a man to practise, and making it a penal offence to practise without those qualifications, is mere tinkering. As regards pharmacy, it is pointed out that the proposed legislation is still more open to attack, since the Lord Chancellor actually proposes to authorise companies to do in pharmacy what he would prevent them doing in medicine and dentistry. Since, however, the Pharmaceutical Societies of Great Britain and Ireland are both up in arms against that proposal, it is thought probable that the clause referring to pharmacy will either be dropped or substantially modified.

As a Satisfactory Amendment of the second clause of the Companies Bill now before the House of Lords, a correspondent has suggested the substitution of the following provisions:—"No company may carry on the business or use the title of chemist and druggist, or pharmaceutical chemist, unless the several members of the company possess the qualification respectively necessary for the lawful use of those titles by an individual, and anything which would be an offence under the Pharmacy Acts, 1852 and 1868, if committed by an individual, shall be an offence if committed by a company." It is also pointed out that the proposal to include pharmaceutical chemists and registered chemists and druggists with physicians, surgeons, etc., in the third clause of the Companies Bill would require to be modified, so that its adoption would not have the effect of making unlawful companies constituted of persons legally qualified to carry on the business of chemists and druggists.

The Term 'Medical Practitioner' is, under existing conditions, so vague as to render it a matter for surprise that the General Medical Council should have adopted the recommendation of the Committee on the Companies Acts Amendment Bill that the Lord Chancellor should be requested to insert that general term in Clause 1 of the Companies (Medical Profession) Bill after the words "physician, surgeon" as being a "very desirable" addition to the Bill, that "would amply guard against the evils sought to be remedied." Short of registration in accordance with the provisions of the Medical Acts there does not seem to be any criterion of authority to practise medicine, and consequently the suggestion of the General Medical Council is reduced to the appearance of being merely a roundabout method of securing, in regard to individuals, the same restriction of practice that is sought for in regard to companies by the Lord Chancellor's Bill.

The Dispensing Grocer is the latest abnormality, and an individual who describes himself as such has written to the *Grocer* to say that he believes the up-to-date member of his trade might add a drug department to his business "with considerable profit to himself." He states that a gentleman who formerly traded as a grocer in a comparatively small way "after tasting the sweets of the drug trade gave up entirely his original calling to become the head of what is now probably the largest drug stores in the kingdom." The editor of the *Grocer* points out that the tendency of retail trade at the present time certainly is to bring together under one roof as many departments as possible, but thinks it is a debatable point whether the majority of grocers would find it profitable to place a qualified chemist at the head of a drug department. "There are, no doubt, districts in which such an innovation would prove of great benefit to the grocer and the public alike, but in others it would probably be attended with very different results. The salary of a qualified chemist would mean an appreciable addition to working expenses, and in districts where grocers and chemists were competing for trade in drugs the already sufficiently narrow margin of profit would be forced even nearer to vanishing-point." While, therefore, it is considered that the grocer who has a drug dispensary connected with his business may enjoy some advantages over his more conservative rival, readers of the *Grocer* are recommended not to extend their business in the direction indicated without careful consideration. At the same time, the subject is felt to be one which might be discussed with good results, and the correspondence columns of our contemporary are therefore thrown open to readers who desire to express opinions on the "Dispensing Grocer" question.

An Effort to Stop Cutting in St. Louis is being vigorously opposed by the cutters, and anti-trust laws are being put in operation against those who have combined to check underselling. At the request of the St. Louis Retail Druggists' Association and the National Association of Retail Druggists, the wholesale drug trade of St. Louis unanimously agreed some time ago not to sell to department stores or cutting firms. The wholesale druggists of Chicago, Cincinnati, and Louisville also agreed not to sell to anyone within the St. Louis territory until there had been ample time to try the experiment properly. All the indications were pointing to the ultimate success of the movement when the Attorney-General, on behalf of the State of Missouri, began proceedings against seventy-six chartered companies and firms—members of the St. Louis Apothecaries' Association—for gross violation of the laws of the State by the formation of a combination or trust. The bill of complaint asks that the chartered companies involved shall have their corporate rights forfeited and annulled, and demands the dissolution of the St. Louis Apothecaries' Association, as an organisation formed and maintained for the purpose of regulating, maintaining, and fixing the retail selling prices of drugs and medicines, proprietary and otherwise, in the city of St. Louis. Judgment is also prayed against each of the defendants, in the sum of one hundred dollars a day for each day since the alleged combination was formed. In the event of the wholesale druggists winning in this case, they will, according to the *National Druggist*, be faced with yet another difficulty, for a new anti-trust law passed by the Missouri Legislature declares it to be illegal for any two or more persons or corporations who are engaged in buying or selling articles of commerce, etc., to enter into any agreement to control or limit the trade in any such

article. It is also forbidden to limit competition in such trade by combining to refuse to buy from or sell to any other person or corporation, or to boycott or threaten any person or corporation for buying from or selling to any other person or corporation.

DEPARTMENT STORES constitute one of the banes of existence to American pharmacists, and attempts to legislate against them have been made from time to time, though generally without success According to the *Bulletin of Pharmacy*, however, the Governor of Missouri has signed an Anti-Department Store Bill similar to those which have, within the last two or three years, failed of passage in several other States and in the Province of Quebec. This Bill divides merchandise into twenty-eight groups and eighty-eight classes, and enjoins a tax of $300 to $500 annually on each department in a store other than the one constituting its main business. The application of the measure is limited to cities of 50,000 inhabitants, and to stores which employ more than fifteen persons. The Bill was fought vigorously in the Legislature and before the Governor, and since there is considerable doubt of its constitutionality, it is anticipated that a test case will soon be brought. It is also stated that the department stores of Chicago are willing to close their drug departments upon some assurance that the action will be general, and that they would look with favour upon a Bill which declared the selling of drugs to be illegal in department stores. Accordingly, the department store proprietors are to be asked to express approval of a prospective amendment to the pharmacy law, which declares unlawful the sale of "drugs, medicines, or poisons in places where groceries, provisions, vegetables, dry goods, clothing, boots, and shoes are kept and sold."

MEDICINAL PLANT NAMES have had their origin and meaning explained in a painstaking manner by Mr. F. Ransom, in the series of articles on the subject which have been published in the *Pharmaceutical Journal* during the past few months, and the author has been extremely successful in showing what a mass of interesting information is connected with such names. Apparently, the idea of compiling the notes on the subject has been suggested to Mr. Ransom during his term of office as an Examiner to the Pharmaceutical Society. The classical knowledge of the average pharmaceutical candidate seems to prove unequal to the strain of the examination room, and Mr. Ransom has rendered a distinct service to students preparing for examination, no less than to post graduate students, in providing the means whereby names which are only too frequently devoid of meaning to the average person may be impressed upon the memory. The investigation undertaken by Mr. Ransom has been attended by no small difficulty, and in many instances the meaning applied to plant names must be more or less conjectural. That is particularly so in the case of those derived from classical names, as the same word may have been applied to plants of very different characters and, as the author points out in his introductory note, even with names of later date it is often difficult to trace the reasons which influenced the authors who are responsible for them. It is a matter for congratulation, therefore, that it should have been possible to produce so full and comprehensive a compilation, and those who are specially interested in the subject will be pleased to learn that the notes have been reprinted in pamphlet form by the author, so that they may be more easily referred to than in the somewhat disconnected form of a series of articles. Copies of the reprint can be obtained at sixpence each, post free, from Mr. Ransom, Bancroft, Hitchin.

THE UNITED STATES PHARMACOPŒIA is revised more frequently, produced more regularly, and the work of preparation gone about in a much more business-like manner than is the case with the British Pharmacopœia. Work in connection with the U.S.P. of 1900 has been proceeding ever since that of 1890 appeared, and the official notice has now been published, announcing that a General Convention for the Revision of the Pharmacopœia will begin at Washington, D.C., on the first Wednesday in May, 1900. It is requested that the several bodies represented in the conventions of 1880 and 1890, and also such other incorporated State medical and pharmaceutical associations and incorporated colleges of medicine and pharmacy as shall have been in continuous operation for at least five years immediately preceding this notice, shall each elect delegates, not exceeding three in number; and that the surgeon-general of the army, the surgeon-general of navy, and the surgeon-general of the marine hospital service shall each appoint not more than three medical officers to attend the aforesaid convention. The various medical and pharmaceutical bodies and the medical departments of the army, navy and marine hospital service are requested to send in the names and residences of their respective delegates, so that a list may be published in accordance with the resolutions passed at the 1890 convention for the revision of the Pharmacopœia. Last, but not least, the medical and pharmaceutical bodies concerned, as well as the medical departments of the army, navy, and marine hospital service, are requested to submit the present U.S. Pharmacopœia to a careful revision, and transmit the result of their labours to Dr. Frederick A. Castle, 51, West Fifty-eighth Street, New York City, secretary of the committee of revision and publication of the United States Pharmacopœia, at least three months before the date fixed for the meeting of the convention.

THE PROPOSED ADULTERATION ACT AMENDMENTS, referred to last week (see p. 557) in a note on the pending adoption of the British Pharmacopœia as a legal standard in Canada, are discussed by the *Canadian Pharmaceutical Journal*, which is of opinion that the draft clauses will greatly improve the Act. It is suggested, however, that in the clause constituting the 'Codex Medicamentarius' and the United States Pharmacopœia standards, it should be made clear that the reference is to articles not official in the British Pharmacopœia; "otherwise it leaves matters almost as they are now, since if an article is official in the B.P. and the U.S.P. under the same name, and the U.S.P. article is of different strength to that of the B.P., either one or the other can legally be sold according to the terms of the law." Again, objection is taken to the proviso that proceedings are not to be taken for the sale of defective 'Codex' and U.S.P. preparations unless "plainly labelled" with the name of the foreign pharmacopœia which it professes to be made in accordance with. That, it is urged, would open the door for abuse, as any rubbish might be sold under names recognised in the foreign pharmacopœias if not "plainly labelled" as being so made. It is interesting to note, by the way, that the Canadian critic appears to think a stricter Act would tend to benefit honest manufacturers and pharmacists, protecting them in their endeavours to do right. With that view we are quite in accord, as there is not the least doubt that the pharmacist has nothing to fear from the raising of standards. But, whilst the pharmacist frequently maintains his drugs and preparations above official standards, he incurs much undeserved odium through the misapplication of his name by unqualified persons, their conviction for selling inferior stuff being wrongly placed to his credit. The fixing of a high legal standard of strength, quality, or purity—as regards drugs and medicinal preparations—would almost certainly result in the extinction of such parasites, and the pharmacist would benefit as a matter of course.

REVIEWS AND NOTICES OF BOOKS.

A Treatise on Practical Chemistry and Qualitative Analysis. By Frank Clowes, D.Sc. Lond., etc., Chemical Adviser to the London County Council. Pp. xxii. + 516. Seventh edition. Price 8*s.* 6*d.* London: J. and A. Churchill. 1899.

The present edition of Dr. Clowes' well-known work on practical chemistry has undergone thorough revision, the paragraphs being re-arranged for more easy reference. Additions are made to the text, more particularly in that part dealing with organic bodies, so as to meet the requirements of the pharmaceutical and medical student. The work now furnishes a very excellent course of instruction in practical chemistry and qualitative analysis and, as is very aptly suggested, such a course should precede the higher training of the professional and pharmaceutical chemist and of the medical man, as well as the more special training of the technical chemist and of the chemical engineer. Sound elementary instruction in practical science is now, however, generally valued not only as a preparation for a professional career and for many branches of manufacturing industry and enterprise, but also as an important branch of general mental training. The book is essentially for a student commencing laboratory practice, and he is thus first taught the preparation and use of apparatus, such as glass bending and glass work, cork boring, the fitting up of wash bottles, then on to the preparation of gases, their properties and tests, the process of distillation and the preparation of distilled water, such practical work being necessarily preliminary to analytical operations. The student is then clearly instructed in the processes of solution, of evaporation and crystallisation, as to filtration and filter pumps, water-ovens, precipitation, neutralisation, thence to flame reactions and the use of the spectroscope, all exceedingly well described and illustrated. The general rules for analytical work and for drawing out a chemical equation are well worth the student's attention, and very sensibly Dr. Clowes clings to the use of hydrate, instead of hydroxide, to express sodium and potassium hydrate, although more for reasons of brevity than of theoretical expression. For the same reason it might have been as well if in the list of atomic weights the two places of decimals had been deleted and the student spared the superrefinement of 54·99 for manganese, 190·99 for osmium, and 1·008 for hydrogen, and so on throughout the list. The reactions of the metals and acids are chiefly noticeable for the clearness of the arrangement and the number of cross references by means of numbered paragraphs, and the same may be said of the reactions of organic acids. The section on the alkaloids deals only with quinine, cinchonine, morphine, strychnine, brucine, narcotine, and caffeine, and is not so carefully written. The formula for quinine sulphate, for example, is not $C_{20}H_{24}N_2O_2 \cdot H_2SO_4 7H_2O$, nor is $C_{19}H_{22}N_2O \cdot H_2SO_4$ correct for cinchonine sulphate. AmHo does not yield a white precipitate with morphine which is soluble in excess, nor is caffeine correctly described as "fairly soluble in alcohol and in ether." Indeed, the absurdity of attempting to deal with alkaloids, a study by itself, in a work of this description is evident. The fifth section, treating of the analysis of a simple substance, is intended for the use of pharmaceutical and medical students preparing for examinations in which the analysis of a simple salt only may be required, while Section VI. gives the details of analysis necessary in the examination of complex substances, soluble and insoluble, organic and inorganic. In about sixty pages the laboratory, its fittings, apparatus, and chemicals, are described so that a model laboratory may be arranged and duly equipped. The work is excellently printed and illustrated, and is almost free from the typographical errors to which a work of this description is so liable. In this latter category, it may be presumed, should be placed the statement respecting distilled water, that "even a town supply will show a purity corresponding to that of distilled water." Such a town would be an ideal place for the erection of model laboratories for chemists, analytical and manufacturing.

An Elementary Text-Book of Botany. By Sydney H. Vines, M.A., D.Sc., F.R.S., Sherardian Professor of Botany in the University of Oxford. Pp. xv. + 611. Illustrated. Price 9*s.* London: Swan, Sonnenschein and Co. 1899.

This work has been prepared to meet the wants of those who desire a text-book of botany somewhat smaller and less expensive than the 'Students' Text-Book of Botany,' completed by Professor Vines in 1895. In the main it consists of the larger work from which difficult and debatable topics have been excised, the reduction in size being only to the extent of 200 pages. Among the matters which have been deleted we specially note karyokinesis, the alternation of generations in the Thallophyta, and the final portion of the section of physiology dealing with heredity and variation. The arrangement of the parts is slightly modified by the transposition of the part treating of "Physiology," by which it is placed between "Anatomy and Histology," and "Classification." A methodical sequence of botanical teaching is thus indicated, closing fitly with classification. The author in the preface allows that "it is convenient to divide the subject matter of botany into the four parts, morphology, anatomy, physiology, systematic, but it must not be forgotten that these are all parts of one subject, different methods of studying one object, namely, the plant. Hence they must not be pursued separately, but together." His practice, in adopting the arrangement of his book, appears to be better than his theory as far as the average student is concerned. A sound knowledge of general morphology should precede the study of anatomy, and both these should he mastered before the study of physiology is undertaken. These three parts occupy only eighty pages less than they do in the larger book, and contain a complete digest of the science of botanical biology. The treatment of classification does not appear to be at all satisfactory. Professor Vines has reverted in the main to the classification of Bentham and Hooker as far as the phanerogams are concerned; but the omission of natural orders and cohorts is so great as to quite destroy the possibility of the student obtaining that comprehensive view of the vegetable kingdom which he is entitled to expect in a general text-book of botany. In the larger volume 152 natural orders in the dicotyledons are dealt with; but in the new book only seventy-one receive notice. The omissions are not those only of small orders, but include such as the Lauraceæ, Acanthaceæ, Asclepiadaceæ, Apocynaceæ, and Cactaceæ. We hope that in a future edition and in the larger work which he promises for advanced students, Professor Vines will break with the traditions of the old "Prantl and Vines," and rearrange the part dealing with classification in such a manner as to furnish the student with a complete view of the affinities of the plant world as seen through the medium of systematic botany. There are several typographical errors which we have noticed that are not mentioned in the errata—for instance—"hyposophylls" (p. 55), "chromoplastids" for chloroplastids (p. 76), "capitula" for capitulum (p. 579); "aposporv" and "apogamy" are missing from the index. The book is well fitted to meet the needs of pharmaceutical students, and only requires the slight suggested improvement in order to render it the best "Elementary Text-book of Botany" in the English language.

PHARMACEUTICAL SOCIETY.

NORTH BRITISH BRANCH.

At a meeting of the Executive of the North British Branch, held in the Society's House, 36, York Place, Edinburgh, on Friday, June 16, Mr. J. LAIDLAW EWING in the chair, the ASSISTANT SECRETARY read the report of the Scrutineers on the voting for the new Executive.

Subsequently, a meeting of members of the Society residing in Scotland was held, at which Mr. EWING again took the chair. Referring to the election of the new Executive,

The CHAIRMAN said a gratifying feature of this year's election was the large number nominated and willing to act on the Executive if elected. The number was a record one, due doubtless to some extent to the wider franchise under

THE PHARMACY ACT, 1898,

in which so much interest was taken by Scottish pharmacists. This year there was an increase of 158 in the number of voting papers issued and an increase of 55 in the number returned. It was also of interest to note that of the associates not in business in Scotland at the passing of the 1898 Act about 70 per cent. had already become members, and there was a promise that several others would do so. In that connection much praise was due to the local secretaries, who had exerted themselves to secure new members. While they had, therefore, no cause for despondency, it would not do to delude themselves by supposing that nothing remained to be done. They ought to have—and if they kept pegging away they would have—a much larger membership of the Society in Scotland. There were yet many unexhausted possibilities in the Pharmaceutical Society which might advantageously be called into play by a widely-extended and interested membership, such as would make the best possible use of the opportunities for the advancement of pharmaceutical interests which the Society was eminently fitted to supply. With regard to

THE EXAMINATIONS

during the past year the number of Major candidates—nine—was the same as last year, but there had been a decided improvement in the passes, 44·5 per cent. having passed this year as compared with 11 per cent. last year. There had again been a decrease in the number of Minor candidates examined—467 as compared with 548 last year. It was gratifying, however, to note that there was a slight and growing increase in the percentage of passes—34·9 per cent. as compared with 33 per cent. last year. Whether as the result of the report referred to in his remarks last year or not, there had been a marked improvement, especially in practical work, on the part of students. The subject of botany seemed to be a difficulty with a good many, chiefly owing to a want of practical acquaintance with plants and a too slavish adherence to mere book work. If recent indications were maintained they might hope to see that still greater increase of passes for which there was so much room. The Executive had given considerable attention to the ventilation of the chemical laboratory, and it was hoped that both examiners and students would now be enabled to work under more comfortable conditions. As to the

EVENING MEETINGS

of the Society, after very careful inquiry and consideration it was found that no other evening seemed so likely to be suitable as Wednesday. The Executive therefore arranged to have meetings on the third Wednesday of each month from November to April inclusive. They were successful in getting Professor Ralph Stockman, of Glasgow University, to open the session with a most interesting address on "Arrow Poisons." That meeting, as well as the others, was very largely attended, with the exception of the last, which happened to be on a very stormy and disagreeable night. The Executive was much indebted to all those gentlemen who kindly contributed to the success of the meetings. These monthly gatherings, apart altogether from the immediate business of the meeting, formed an excellent opportunity for that friendly intercourse among pharmacists which tended very materially to promote the general welfare of the craft. It was much to be desired, therefore, that those meetings should continue to be largely attended and well supported. In the

LIBRARY DEPARTMENT

a number of useful books had been added during the year. Special mention might be made of the 'Encyclopædia Britannica' purchased by the Council, and a second copy of Watts' 'Dictionary of Chemistry' (Morley and Muir), presented by Mr. James Smiles. The new library and reading room had been greatly appreciated by visitors. The circulation of books during the year showed an increase of 523 volumes, as compared with a decrease of 156 last year. The decrease last year was attributed to temporary causes connected with the shifting of the library, and this year's figures seem to indicate that it had considerably more than recovered itself. There was a further steady increase of 91 volumes circulated to readers outside Edinburgh and Leith, indicating a greatly extended usefulness of the library for provincial readers, among whom it could not be too widely known that the Society pays carriage on all books borrowed. The library was one of the most important and most useful departments under the care of the Executive, and the generous way in which the Council had always assented to everything calculated to promote its equipment and efficiency merited grateful recognition on the part of Scottish pharmacists. The Executive had also to express thanks to all those who had given donations of books during the year. The large collection of

DRUGS AND CHEMICALS

included in the Royal College of Physicians and Scoresby Jackson Museums was in process of being arranged, but some time would elapse before the work would be completed, and the proper storage of the specimens might have to occupy the attention of the new Executive. The portion of the cleaning and painting of the Society's House left over last year had now been completed at a cost of about £40, and the whole premises were now in thorough repair and good order. There was one matter of pharmaceutical interest which had engaged a large amount of attention throughout the United Kingdom during the last few months, and the Executive had occasion to consider it at their meeting in April. He referred to

THE LORD CHANCELLOR'S PHARMACY BILL,

in regard to which they unanimously approved of the action of the Council in taking steps to oppose that Bill. They particularly objected to the handing over of statutory titles—implying a personal professional qualification on the part of those using them—to companies made up partly or wholly of unqualified individuals. It was a somewhat curious fact that no Bill emanating from a Government Department ever did deal with pharmaceutical matters in a way which commended itself to practical pharmacists, who were best acquainted with the conditions and regulations most likely to promote public safety. Whatever the Lord Chancellor might have thought of the suggestions submitted to him by the Council, there could be no doubt they were made in good faith and, to say the least of it, it would have been more courteous and better calculated to facilitate useful legislation if he had submitted a draft of his Pharmacy Bill to the Council of the Society and invited an expression of opinion before it was introduced in Parliament. Since the Executive adopted the resolution he had referred to, a change had been made in the terms of the Lord Chancellor's proposal, and it had now taken the form of a new clause in

THE COMPANIES ACTS AMENDMENT BILL,

which had passed the second reading in the House of Lords. They were, he thought, justly entitled to take up the position that the situation thus created had been suddenly sprung upon them without consultation. The clause as it stood did not commend itself to their judgment, and they felt compelled to insist upon its abandonment in its present form. The whole circumstances were complicated and difficult to deal with, and they must have time to consider very carefully what particular form of legislation was most likely to commend itself to Parliament and at the same time sufficiently protect the practice of pharmacy, so as to adequately secure public safety in accordance with the object and policy of the Pharmacy Act of 1868. Chemists must therefore insist on the abandonment of the present clause, in order that the way might be cleared for something better, and they thought it reasonable and proper that in a matter of that kind the Government should consult the Society, whose statutory duty it had been to administer pharmacy law for so many years. With regard to the *personnel* of

THE BOARD OF EXAMINERS AND THE EXECUTIVE,

Professor Gibson and Mr. Maben had retired from the former. Dr. Gibson was the first teaching examiner in chemistry appointed

under the new regulations adopted about five years ago. Under his guidance the chemistry department of the examinations had been very carefully and thoroughly systematised. He took very great interest in the work and in the students who came before him, and would be held in the highest esteem by the colleagues who were privileged to be associated with him on the Board. He had been succeeded by Dr. Leonard Dobbin, whose standing and experience as a teacher and an examiner eminently fitted him to be a worthy successor to Dr. Gibson. Mr. Maben had retired, to the regret of his colleagues, after fourteen years' service on the Board, and his place had been taken by Mr. Boa, who had previously given proof of his fitness for such a post. From the Executive they would this year miss the presence of Messrs. Kermath, Hardie, Moir, and Coull. Mr. Kermath retired after a long period of service, during which he took great interest in the work, and his position on the poll indicated that he possessed the confidence and esteem of his fellow-craftsmen. Mr. Hardie had been a member of Executive ever since the new arrangement was introduced, and now retired because business engagements prevented his attendance at meetings. Mr. Moir was a diligent and painstaking representative of Western pharmacists, and in Mr. Coull they had an active and able representative from Leith. In regard to all those gentlemen, they owed them a debt of gratitude, to which they gave that cordial expression begotten of a hope that they might be favoured with the presence and assistance on the Executive at some future time. He would also take note of the retirement of Mr. Walter Hills, who, as President, had proved himself patient, conscientious, and untiring in his devotion to duty. His own relationships with him had been exceedingly pleasant and agreeable at all times. He was sure he might say that Mr. Hills left the presidential chair bearing with him the highest respect, and he would almost say the affection, of every member of the Society. The name of

WILLIAM MARTINDALE,

who succeeds him, is not only a household word in Scotland, but is well known all over the world. He would, they felt sure, worthily maintain the dignity of his high position and strenuously strive to promote the best interests of the Society over which he presides and the craft or profession of which he is, for the time being, the foremost representative. He might feel assured of the loyal support of Scottish pharmacists.

The ASSISTANT-SECRETARY then read

THE REPORT OF THE SCRUTINEERS,

which showed that 564 nomination papers had been issued, and that of 81 persons who had been nominated, the following 34 had signified their willingness to act if elected :—

ANDERSON, ALEXANDER BLACK, 38, Princes Street, Dundee.
AYRE, GEORGE MARTIN, 75, High Street, Perth.
BAKER, WILLIAM CHARLES, 13, Dundas Street, Edinburgh.
BOA, PETER, 119, George Street, Edinburgh.
BOWMAN, JOHN, 3, Duke Street, Leith.
BURLEY, WILLIAM, 35, George Street, Edinburgh.
COWIE, WILLIAM BEAVERLY, 26, Clyde Street, Edinburgh.
CUMMINGS, CHARLES, 49, Reform Street, Dundee.
CURRIE, WILLIAM LITTLE, 223, Byres Road, Dowanhill, Glasgow.
DEY, ALEXANDER JOHN, 21, Duke Street, Edinburgh.
EWING, JAMES LAIDLAW, 104, South Canongate, Edinburgh.
FISHER, JOHN HUTCHISON, 66, High Street, Dunfermline.
FOSTER, JOHN, 479, Sauchiehall Street, Glasgow.
GILMOUR, DAVID, 40, Bridge Street, Dunfermline.
GLASS, WILLIAM STEPHEN, 193, Morningside Road, Edinburgh.
HARLEY, THOMAS, 21, High Street, Perth.
HENRY, CLAUDE FRANCIS, 1, Brandon Terrace, Edinburgh.
HUNTER, ANDREW, 4, North Bridge, Edinburgh.
KERR, CHARLES, 56, Nethergate, Dundee.
LAWRENCE, SAMUEL, 101, George Street, Oban.
M'ADAM, ROBERT, 34, Virginia Street, Glasgow.
M'DIARMID, FRASER, Junction Bridge Works, Leith.
M'DOUGALL, REA IRELAND, 1, Gladstone Place, Leith.
M'LAREN, DAVID, 42, South Clerk Street, Edinburgh.
MACPHERSON, COLIN ALLEN, 97, Dalry Road, Edinburgh.
MITCHELL, DONALD, 30, Union Street, Inverness.
NAYSMITH, ANDREW, 211, High Street, Arbroath.
ROBERTSON, WILLIAM GEORGE, 9, Bonnygate, Cupar, Fife.
RUSSELL, JAMES ANDERSON, 212, New City Road, Glasgow.
STRACHAN, ALEXANDER, 138, Rosemount Place, Aberdeen.
SWAN, WILLIAM, 92, Morningside Road, Edinburgh.
THOMSON, JOHN HUTCHISON, 102, High Street, Lochee, Dundee.
TOCHER, JOHN, 84, High Street, Dumfries.
WATSON, DAVID, 558, Cathcart Road, Govanhill, Glasgow.

The voting papers issued numbered 570, and of those 252 were returned, 6 were informal, and 4 were received too late.

The result of the poll was as follows :—

Currie	223	Burley	136	Cummings	71
Ewing	218	Russell	136	Hunter	67
Henry	208	Gilmour	107	Watson	66
Kerr	199	Cowie	96	Robertson	64
Bowman	196	Tocher	92	Dey	59
Boa	194			Glass	53
Strachan	189			Thomson	43
M'Adam	177	Foster	90	McDougall	41
M'Laren	169	Naysmith	90	Anderson	40
Fisher	158	Harley	77	M'Diarmid	39
Mitchell	155	Macpherson	77	Baker	38
Ayre	144	Lawrence	74	Swan	33

Mr. MABEN (Hawick) said he had pleasure in moving the adoption of the report. The most striking feature of it was the demand for seats on the Executive, and the voting papers returned seemed to show that a good deal of interest had been taken in the election. He thought the importance of the Executive had been rather minimised by the Council declining to recognise, or at least to publish the report of, its work. There was a very legitimate desire on the part of members in Scotland to see what had been done by the Executive. However, that had so far been remedied by the statement made by the Chairman, which would no doubt appear in due course. No former member of the Executive who had consented to stand had been rejected. Some old friends had gone, and others took their places, and he might congratulate the four new members on the attainment of what, to judge by past experience and the voting this time, might be to them a life appointment.

The motion was seconded by Mr. LUNAN, and unanimously agreed to.

The Chairman then declared that the seventeen persons whose names appear in the following list, together with the President of the Society (Mr. William Martindale), the Vice-President (Mr. G. T. W. Newsholme), Mr. John Johnston, Aberdeen, and Mr. David Storrar, Kirkcaldy, would constitute the Executive for the year 1899-1900 :—

Ayre, George Martin.
Boa, Peter.
Bowman, John.
Burley, William.
Cowie, William Beaverly.
Currie, William Little.
Ewing, James Laidlaw.
Fisher, John Hutchison.
Gilmour, David.
Henry, Claude Francis.
Kerr, Charles.
M'Adam, Robert.
M'Laren, David.
Mitchell, Donald.
Russell, James Anderson.
Strachan, Alexander.
Tocher, John.

On the motion of the CHAIRMAN, a vote of thanks was awarded to the Scrutineers—Messrs. John Brown, R. L. Hendry, James Paton, and John Robertson—and a similar vote of thanks having been awarded to the Chairman, on the motion of Mr. KERR, the meeting closed.

SCHOOL OF PHARMACY PRIZE EXAMINATION PAPERS.

SESSION 1898-99.—ELEMENTARY COURSE.

PHARMACY—PRACTICAL DISPENSING (A).

PROFESSOR GREENISH.

Monday, June 19—From 2 to 5 p.m.

Dispense the following prescriptions, label, wrap, and address each to yourself :—

1. ℞ Creosoti .... ℥.
   Pulv. Capsici .... gr. ½.
   Pil. Rhei. Co. .. .. gr. ij.
   Ft. pil. j. Mitte xij.; varnish. Cap. j. bis die post cibos.

2. ℞ Aloes Socotrinæ ..... gr. ii.
   Mist Ferri Co.
   Inf. Calumb. aa part. æqual. .... ad. ℥j.
   Mitte ℥viij. Sign. ℥j. 3 tiis. vel. 4 tis horis.

3. ℞ Ol. Phosphor. ..... ℥j.
   Mucil. Tragac. ..... ℥j.
   Tinct. Tolu ..... ℥ij.
   Aq. .... ad. ℥iv.
   Ft. Emulsio. One tablespoonful for a dose.

4. ℞ Ol Eucalypti ..... ℥ij.
   Ol. Theobromatis .... gr. xv.
   Ft. suppos. Mitte vj. Use one as directed.

PHARMACY.—PRACTICAL DISPENSING (B).

PROFESSOR GREENISH.

Tuesday, June 20—From 2 to 5 p m.

Dispense the following prescriptions, label, wrap and address each to yourself :—

1. ℞ Spirit. Aether. Nit. ..... ℥iij.
   Potass. Iodid. .... ℥ss.
   Liq. Potass. ..... ℥ij.

Balsam Copaibæ ..... ℥ss.
Pulv. Trag. Ver. ..... *q.s.*
Aquæ ..... ad. ℥vj.
Ft. mist. A sixth part three times a day.

2. ℞ Bismuth. Subnit.
Sodæ Bicarb. ..... ana gr. xxx.
Divide in pil. xij. ; silver. One after each meal.

3. ℞ Hydrarg. Biniodid. ..... gr. j.
Potass. Iodid. ..... gr. xij.
Quin. Phosph. ..... gr. xij.
Acid. Sulph. dil. ..... *q.s.*
Aq. ..... ad. ℥viij.
Tinct. Benz. Co. ..... ℥ij.
Ft. mist. Cap. ℥ss. hora 11, 4 et 7.

4. ℞ Morphinæ Hydrochlor. ..... gr. vj.
Ext. Hamamelidis Liq. ..... ♏ 60.
Ol. Theobromatis ..... *q.s.*
Divide in supposit. vj. Use one as directed.

PHARMACY—PRACTICAL DISPENSING (C).

PROFESSOR GREENISH.

Wednesday, June 21—From 2 to 5 p.m.

Dispense the following prescriptions, label, wrap, and address each to yourself :—

1. ℞. Ext. Bellad. ..... gr. iv.
Camphoræ ..... ℈j.
Quin. Sulph. ..... gr. vj.
Zinci Sulph. ..... gr. vj.
Divide in pil. xij. Cap. j. vel. ij. nocte.

2. ℞ Sod. Salicyl. ..... ℥iss.
Glycerini ..... ℥ij.
Ext. Cinchon. Liquid. ..... ℥ij.
Acid. Phosph. dil. ..... ℥iss.
Aq. ad. ..... ℥iv.
℥ss ter die ex aq. paux.

3. Spread a blister for the left ear.

4. Potass. Bromid. ..... gr. v.
Ol. Theobromatis ..... gr. xv.
Ft. supp. Mitte vj. Sign. "The Suppositories."

PRACTICAL BOTANY.

PROFESSOR REYNOLDS GREEN.

Thursday, June 22—Hours from 10 to 1.

1. Make a microscopic preparation to show the structure of A. Mount it in glycerin. Leave with it a lettered sketch calling attention to its distinctive features.
2. Identify and briefly describe the microscopic preparations B, C, D.
3. Comment on the morphology of E, F, G.

BOTANY.

PROFESSOR REYNOLDS GREEN.

Thursday, June 22.—Time allowed, Three Hours—from 2 to 5.

[*Not more than four questions are to be answered.*]

1. Give some account of the process of transpiration, and point out the ways in which it is of use to a green plant.
2. Describe the methods of the formation of the cambium ring in the stem and root of a dicotyledonous tree. How are fibres formed from the cambium?
3. Give some account of the structure and functions of the epidermis.
4. Describe the changes which take place in the ovule during the development of the embryo from the oosphere.
5. What is obdiplostemony? Mention some flower in which it occurs and explain it in that particular case as far as you can.

CHEMICAL SOCIETY.

The last meeting of the present session was held at Burlington House, Piccadilly, W., on Thursday, June 15. The chair was taken by Dr. THORPE, the President.—A ballot was taken during the evening, and many new Fellows were elected. No less than nineteen papers were down on the agenda for reading. Of these only four were read.—The first was by W. H. SODEAU, B.Sc., and dealt with

The Decomposition of Chlorates, with Special Reference to the Evolution of Chlorine and Oxygen.

The author enunciated the many theories that have been advanced in explanation of the changes that occur in the decomposition of chlorates. He then brought forward experimental proof that, so far as the chlorates of potassium and barium are concerned, the reactions may be represented by two equations :—

(1) Chlorate = chloride + oxygen.
(2) Chlorate = oxide + chlorine + oxygen.

The residue after heating one of these chlorates is found to contain the chloride and oxide of the metal. The decomposition of most chlorates may be represented by equations which show that the reactions are both exothermic and endothermic. The proportion of chlorine given off depends on circumstances; of these the pressure, the duration of the reaction, and still more the temperature, are of importance. In the case of barium chlorate, the presence of chloride produces retardation in the decomposition.

The PRESIDENT, speaking in eulogistic terms of the work, said that the ease with which perchlorates are formed modifies the reactions, and therefore renders difficult the generalisation of the laws that govern the reactions. As none of the Fellows attempted to discuss the paper, the President called on A. HARDEN, M.Sc., Ph.D., to make a communication concerning

The Action of Hydrogen Peroxide on Formaldehyde.

On mixing together solutions of hydrogen peroxide and formaldehyde nothing occurs until the mixture is made alkaline, when a vigorous effervescence takes place. The evolved gas is pure hydrogen. The reaction is accompanied by the liberation of much heat. Using excess of formaldehyde, in the form of the ordinary formalin solution, it appears, from quantitative experiments, that as much hydrogen is evolved as is present in the hydrogen peroxide. The reaction may be represented by the equation :—

$$2HCOH + H_2O_2 = H_2 + 2H_2CO_2$$

When the hydrogen peroxide is present in excess the action is slow, and the hydrogen is mixed with a certain amount of oxygen. Its volume is dependent on time, and the reaction is never complete. It is interesting to note that many oxides, *e.g.*, bismuthic oxide, react with formaldehyde, without evolution of hydrogen. Barium peroxide supplies its own alkali, and acts like hydrogen peroxide. The author expressed the hope that further investigations would enable him to devise methods for the determination of hydrogen peroxide, as well as of copper in a mixture of metals.

In the discussion, Mr. CROSS claimed that the reaction between hydrogen peroxide and formaldehyde was a further proof of a theory lately put forward by himself, that when hydrogen peroxide acts as an oxidising agent, it splits up first into hydrogen and oxygen.

Dr. DÉBUS, who spoke with a marked foreign accent, appeared to regard the hydrogen as coming entirely from the formaldehyde.

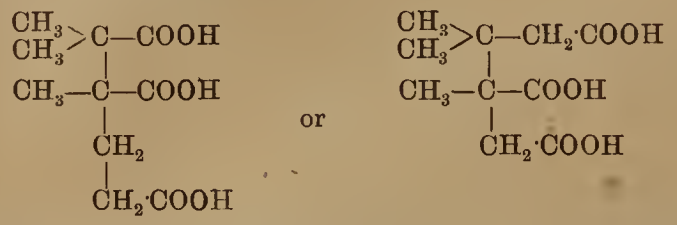
Dr. ARMSTRONG thought that the hydrogen was more likely to come from the formaldehyde than from the hydrogen peroxide.

In his reply the author took the last view.

The next paper was by A. LAPWORTH, D.Sc, and EDGAR M. CHAPMAN, Burroughs' Scholar in the Pharmaceutical Society's laboratories, on

Homocamphoronic and Camphononic Acids.

On heating α dibromo-camphor with dilute nitric acid in the presence of silver nitrate about 90 per cent. was converted into camphor, monobrom-camphor, and other volatile products. A small quantity of a nitrolactone was also obtained, having the formula $C_{10}H_{16}N_2O_6$, together with a small quantity of an acid which proved to have the formula $C_{10}H_{16}O_6$. It is a tri-carboxylic acid, and the authors give it the name homocamphoronic acid, owing to its being the next higher homologue of camphoronic acid. From the properties of this compound it must have one of the following constitutional formulæ :—



This acid had been obtained previously, but not investigated by Forster. On heating homocamphoronic acid slightly above its melting point water is eliminated, and an anhydrous acid is obtained of the formula $C_{10}H_{14}O_5$. On heating to a higher temperature it loses CO_2, and a ketonic acid, having the formula $C_9H_{14}O_3$, is formed. This they term camphononic acid, as it is isomeric with an acid named pinononic acid. On careful oxidation camphononic acid is entirely converted into camphoronic acid.

Dr. LAPWORTH ably demonstrated the importance of the production and behaviour of these intricate compounds in supporting the constitutional formulæ of Bredt and Perkin for camphoric acid.

Dr. ARMSTRONG, in praising this contribution to present knowledge of the camphors, demurred slightly at the nomenclature of the second body, camphononic acid.

Dr. Lapworth then read the last paper on "The Action of Silver Compounds on α-Dibromocamphor."

A large number of papers were taken as read, and the recital of the imposing series of papers by the President created some amusement, from the evident difficulty with which he manipulated some of the multi-syllabic names.—The meeting was then adjourned until November next.

NEW REMEDIES.

Formaldehyde-Tannin Albuminate.—By the action of formaldehyde on tannin-albumin a compound is formed which is insoluble in the acid gastric secretion, and which is only decomposed in the alkaline intestines, so that the effect of both the astringent and disinfecting constituents are exercised *in situ*. The compound, which is stated to be very efficacious in the treatment of disorders of the intestines, is the subject of a patent. —*Pharm. Centralh.*, 40, 72.

Camphor in Pulmonary Tuberculosis.—Camphor is, according to Bruno-Alexander, a valuable remedy in the treatment of pulmonary tuberculosis. Administered subcutaneously he finds it to be antihydrotic, antipyretic, and effectual in checking purulent discharges and the formation of sputum. It does not impair the digestion, and improves the appetite, while it reduces the hyperreflex, and so checks irritable cough. It is administered in the form of the camphorated oil of the Ph.G. (1:10) in doses of 0·1 to 0·2 C.c., which would contain about 1 to 2 Cgm. of camphor. The treatment is continued for four to six weeks, then a pause of one to four weeks may intervene. If there be no fever, from 0·3 to 0·5 C.c. of the oil may be thus given in eight to fourteen days. The treatment should be continued for some time after improvement has been established. Hæmoptysis is no barrier to the use of the drug.—*Med. Press*, 67, 273.

Naphthalin in Eczema.—Chronic and acute eczema has been successfully treated by Achvlédiani (*Sem. Med.*) with naphthalin ointment composed of naphthalin, 3 or 4, and lard, 30. The acute and moist form is first dusted with a mixture of salicylic acid, 15 Cgm.; zinc oxide, 30 Gms.; French chalk, 70 Gms. Then the affected area is gently rubbed with the weaker form of the ointment, after thorough washing with tepid water. After the application of the ointment the parts are covered with a thick pad of wool. Chronic eczema is treated with the stronger ointment, and five minutes before applying it, the parts are painted with olive oil. After a three weeks' treatment the ointment is applied only once every second day.—*Bull. Gen. de Therap*, 137, 351.

Sodium Benzo-Sulphite.—This is a white antiseptic, soluble in water, inferior in action to mercury salts in germicidal power, but superior to them in non-toxic and irritating effects. In the treatment of burns and inflammation of the eyes, sodium benzo-sulphite acts as an anodyne. It is applied as a dusting powder with French chalk in the proportion of 1 : 9, or in a ½ to 2 per cent. aqueous solution for compresses, dressings, or injections.—*Merck's Report*, 1898, 106.

Antiarthrin in Chronic Rheumatism and Gout.—Antiarthrin, which is stated to be a condensation product of tannin and saligenin, has been introduced as a remedy for chronic rheumatism and gout. It is only stable in the dry state, solutions quickly decompose; it should, therefore, only be dispensed in the form of powder or tablets. It is given in doses of 90 to 150 grains in twenty-four hours, and is stated to give rapid relief from pain; it acts as a powerful diuretic, causing the elimination of large quantities of uric acid. Swelling of the joints and stiffness are quickly reduced, and the general health is improved. It is free from any ill effect. F. Schaefer has treated about sixty cases of gout and rheumatism with the remedy with general good results.—*Therapist*, 9, 91.

Pellotine Hydrochloride as a Hypnotic.—This salt of the cactus alkaloid, $C_{13}H_{19}NO_3HCl$, occurs in colourless bitter crystals, readily soluble in water. It is a good hypnotic, which is successful in about 50 per cent. of the cases, inducing natural sleep. On epileptics, pellotine has no influence. The average subcutaneous dose of pellotine hydrochloride is 1 to 2 Cgm.; the maximum dose for insane patients, 6 Cgm.; for internal use, powders of 5 to 8 Cgm. are prescribed.—*Merck's Report*, 1898, 123.

EXTRACTS FROM CONSULAR REPORTS.

The Production of an Effervescing Wine, made in the first place by the Elban vine-growers as an experiment, has made praiseworthy progress both in quality and quantity, but it is too recent a venture to obtain the delicacy and fineness of taste which age gives to French champagne. Still, the Elba champagne has gained considerable favour outside the island, having been awarded a bronze medal at Asti, silver medals at Rome and Hamburg, a gold medal at London, and honourable mention at Nice. It is highly probable that it may in the near future prove to be a strong competitor with products of a similar nature, more especially where a more robust and ferruginous wine than the French is preferred.

Artificial and Chemical Manures were introduced into Elba in considerable quantities for the first time last year, and, in the opinion of the British Vice-Consul, these, together with sulphate of copper, might with advantage be imported direct from Great Britain.

The Yerba Maté, or "tea," is one of the most important productions of Paraguay. It is the leaf of a tree called *Ilex paraguayensis*, and grows in forests, in certain parts of the country only, without any cultivation. The owners of these properties have the young branches cut and prepared, and after four years they return and repeat the operation. A "yerbal" might be compared to a tea or coffee plantation, except that it requires no planting, no cultivation, only care being taken not to cut the young branches before four years have elapsed. The infusion made from this "tea" is said to be very agreeable, refreshing, and invigorating, and is the national beverage of the country. According to Acting-Consul Croskey, it is used all over Argentina and Uruguay, and to a certain extent in Chili. It is stated to possess superior qualities to coffee, and is much more economical, as one kilo of the "tea" will give 100 litres of infusion. It has only a small sale in Europe, but endeavours are being made to increase its acceptance by preparing it in a manner to suit European tastes. It has been favourably reported on by J. G. McKendrick and D. F. Harris (*P.J.* [4], 7, 52), and also in Germany, and it is considered that for armies and navies it would be invaluable.

The Imperfection of the Olive-Pressing Machines in use in Cyprus results in a great quantity of oil remaining in the oil-cake. The consumption of olive oil in Cyprus is superior to the production, and as the island abounds with wild olive trees, which without expense and within a few years could be rendered productive, in order to encourage their cultivation, measures were taken last year to grant rewards to persons grafting wild olive trees. It is not yet known whether the result will be the production of sufficient to make up the deficit in the oil now produced in the island, and probably a surplus for exportation, but in the meantime Mr. P. Gennadius suggests that some enterprising person should undertake the extraction of the oil from the cakes rich in oil, which are now used for fuel, as food for pigs, and as manure. The extraction would require neither capital nor special knowledge, and the oil thus obtained would be suitable for use by the soap manufactories which have been established in Cyprus for some time, and which, at present, get the oil they require from abroad. The oil-cake, even from more perfect pressing machines and containing less oil, when treated with carbon bisulphide yields an inferior oil, which is chiefly used for machinery and in making soap.

The New Customs Tariff of 1898, whereby cottonseed oil was excluded from importation into Tunis, appears to have had a beneficial effect upon the quality of the olive oil exported from that district, although the actual bulk of olive oil sent out of the country was less last year than formerly, being valued at 3,044,723 francs, as against 5,268,277 francs the previous year. Before the new customs tariff came into force, large quantities of cottonseed oil were imported, and subsequently, mixed with a little olive oil, was exported from Tunis as olive oil, whereas now little or no cottonseed oil is imported, consequently the olive oil exported is relatively pure.

LETTERS TO THE EDITOR.

The Question of Title.

Sir,—Your remarks in "Annotations" with regard to my query are all very well, viewed from your standpoint, but I would venture to suggest that it is useless for the Council to feel that it would be nonsuited at the outset of the case. "Nothing ventured, nothing had," was a motto given me when a boy, and in that spirit I have always acted, with such success as to make me feel confident that if the same spirit (instead of the *non possumus*) imbued our Council, we could get, in spite of all difficulties, a different judgment to-day than was delivered in the case of the London and Provincial Supply Association. Let the Council, backed up with increased membership and fees, have the courage to test the question as I suggest and let us abide by the decree. If we win, let us see to it that the Pharmaceutical Society is loyally supported, and the spirit as well as the letter of the Pharmacy Act is kept; no proprietor of a business delegating to his unqualified assistant the sales of pennyworths of oxalic acid, white precipitate, etc., etc., to say nothing of dispensing poisons. This action would also show the absurdity of a company being able to do what an individual cannot do.

Torquay, June 16, 1899. Wm. Jno. Rawling.

Surgery Dispensing.

Sir,—The letter of M. P. S. narrates a familiar story. Only this week a youth came to me from a surgery with a prescription in which sp. æther. sulph. occasioned him dire perplexity. I asked him how he came by it, seeing it was not written by his employer, and pointed out that chemists existed with the hope—which day by day grows fainter—of being entrusted with the dispensing of prescriptions. Is there *no* professional feeling in the medical profession which might be appealed to to cease this unjust and undignified poaching?

Dover, June 16, 1899. J. F. Brown.

Quacks and Quackery.

Sir,—In last week's article on this subject the more remote origin of the "text" adopted by "Pharmacist" is Ecclus, xxxviii., v. 1—8 (one of the Books of the Apocrypha).

Peterborough, June 17, 1899. W. Elborne.

The Company Trading Question.

Sir,—I am heart and hand with the Council in its endeavours to obtain the suppression of Clause 2 of the Companies Acts Amendment Bill and the insertion of the words "pharmaceutical chemist" and "chemist and druggist" in Clause 3, but have we not otherwise the remedy in our own hands? I would address myself more particularly to my qualified brethren who are at the present moment serving with companies and stores. To get all these gentlemen so engaged to give up their situations and serve with legally qualified chemists—situations with whom are always available—might be thought to be a thing impossible. I do not think so. If each man can be educated to see the sequel of such a proceeding, I feel that all will be right glad to act accordingly, and companies and stores would be a thing of the past. It is true that we have to work deplorably long hours with insufficient remuneration, but these can and would be rectified with the dissipation of companies and stores. Why, we have unlimited power if we only dare to use it rightly, loyally, and in unity one with another. I am only an assistant, but, although qualified, I would rather seek my fortunes in another direction than, by engaging myself with a company or store, help to bring about the downfall of what ought to be a dignified and noble profession.

London, June 19, 1899. A. Akhurst, M.P.S.

Sir,—With your permission I should like to continue the discussion of the "company pharmacy" question with special reference to the Companies Acts Amendment Bill. Into this Bill the Lord Chancellor's proposals have been introduced. The object of one of these proposals is to protect doctors, dentists, and midwives against the inroads of unqualified companies, while the object of the other is to recognise unqualified combinations as chemists—so long as they carry on the business of pharmacy by means of registered assistants. Now, no loyal chemist can approve of this attempt to lower the dignity of our craft and give our well-earned titles to unqualified companies, and the opposition to it will no doubt be strong and effective. Some of our more sanguine brethren profess to know the way out of our difficulty. They say that if chemists were included with the doctors and dentists company pharmacy would cease, and that such a demand on our part would be both just and reasonable. Possibly! Chemists have as good a claim to protection as medical men. Had there been no companies to deal with, our case would have been different. We have a history to contend against. Protection for medical men would be almost entirely prospective. Any really useful legislation for us must be retrospective. Unqualified companies have taken advantage of the fact that they are held to be outside the scope of the Pharmacy Acts. Evidently that was never intended—that a combination of persons should lawfully do what a person was prohibited from doing. But these companies have satisfied the highest court in the land that they are fulfilling the spirit of the law in providing for the safety of the public by the employment of registered chemists. That being so, there is no public grievance, nor is there any public demand for their suppression. Is it likely, then, that Parliament will listen to our cry for their annihilation?

Edinburgh, June 20, 1899. W. S. Glass.

The Election of the Scottish Executive.

Sir,—I beg to tender my best thanks to the gentlemen who recorded their votes in my behalf in the election of Executive of North British Branch. Although not elected, any service I can render for the advancement of the interests of chemists shall be gladly undertaken.

Edinburgh, June 20, 1899. W. S. Glass.

ANSWERS TO QUERIES.

Botanical (J. H. T. B.—30/13).—Thanks for sending leaf. It is from *Paulownia imperialis*, as we suspected.

Botanical (J. W. H.—30/21).—1 *Listera ovata*; 2. *Lithospermum officinale*; 3. *Helianthemum vulgare*; 4. *Thymus serpyllum*; 5. *Gentiana amarella.*

Perspiring Hands (R. M. D.—30/22).—Try the effect of using carbolic or other antiseptic soap and warm water for washing, and apply some extract of witch hazel immediately after drying the hands.

Seidlitz Powders (S. F. A.—30/20).—There is nothing to prevent you selling lemon-flavoured seidlitz powders, but we should advise you not to supply them unless it is clearly understood that ordinary seidlitz powders are not wanted.

Liquor Papav. et Anthem. Conc. (H. D. K.—30/4).—Crushed poppy capsules, 16 ounces; boiling water, *q. s.* Digest the capsules with 2 pints of the water for four hours; strain and press; repeat the digestion with the marc for two hours; again strain and press; evaporate the united liquors to 18 fluid ounces, and when cold add alcohol, 90 per cent., 2 fluid ounces. Meanwhile moisten powdered chamomile flowers, 16 ounces, with a little of a menstruum composed of alcohol, 90 per cent., 1 volume; water, 4 volumes. Let the moist powder stand to swell in a closed vessel for an hour, then pack in a percolator and percolate with the same menstruum until 20 fluid ounces have been obtained. Mix this with the concentrated poppy liquor and filter.

Nucleus of a Pharmaceutical Library (C. A. C.—30/9).—You should certainly have the following standard works for reference:—Squire's 'Companion to the B.P., 1898,' Martindale's 'Extra Pharmacopœia,' Attfield's 'Manual of Chemistry' (latest edition), Greenish's 'Introduction to the Study of Materia Medica,' Braithwaite's 'Pharmaceutical Formulary,' Wanklyn's 'Water Analysis,' and McEwan's 'Pharmaceutical Formulas.' If you can get it, the old Gray's 'Supplement to the (London) Pharmacopœia' is a most valuable work of reference, but it has long since been out of print. Squire's 'Pharmacopœias of the London Hospitals,' Hager's 'Manuale Pharmaceuticum,' Dorvault's 'L'Officine,' the 'Era Formulary,' Cooley's 'Cyclopædia of Practical Receipts,' Spons' 'Workshop Receipts,' and Remington's 'Practice of Pharmacy' are also useful. The list could obviously be much extended, but the above selection has been confined to such books as experience has shown to be most frequently used for reference in actual work. It is, of course, unnecessary to refer to the indispensable nature of the 'Year-Book of Pharmacy' and the volumes of the *P. J.*

FRENCH NEWS.

[*From our Paris Correspondent.*]

Must Have Morphine at any Price.—There appears to be no limit to the extent to which some morphino-maniacs and cocaine *habitués* will go to ensure a constant supply of these drugs. Sharp though the pharmacien may be, he does occasionally get fooled by these "needy ones," who are sometimes sharper than he. There is the class which hawks an old prescription around from pharmacy to pharmacy, and so obtains large quantities without exciting much suspicion. But this is not the class with which this note has to deal. There is another class of individuals who, to avert suspicion, "forge" a local doctor's signature. This is the species which some time ago "took in" a few of the English chemists of Paris. The *modus operandi* was to ring up the assistant at 2 or 3 a.m., and present a prescription calling for a number of items, such as "Solution de cocaine, 10 per cent., 60 grammes; ouate hydrophile, 125 grs.; 2 bandes de Gaze hydrophile and taffeta schiffon, ½ metre." The client (?) would ask to be supplied with the cocaine immediately, adding that the doctor was "waiting to use it," and upon departing would request that the remainder of the items upon the "ordonnance" be sent along with the bill at such and such an hour in the morning to his hotel (generally giving the name of one of the best hotels). At the hour specified the items were despatched with the bill, only to be returned later marked "Ce monsieur est inconnu" (unknown). This man kept up his supply on the cheap. Yet another individual has gulled no less than three provincial pharmaciens of the same town, employing similar means to those of the sharper above mentioned. With his fourth would-be victim, however, he was utterly unsuccessful, for the pharmacien, knowing too well the signature of the doctor whose signature the forger tried to imitate, smelt a rat, so to speak, and plied his unfortunate client with questions, to which he could only get evasive and unsatisfactory replies. Dissatisfied thereat, he flatly accused the man of forging the prescription, and explained to him the gravity of his offence, whereupon the man tried to escape, but ere he reached the street he was wriggling in the tight grip of the pharmacien, who handed him over to a "sergent-de-ville," who, for a wonder, happened to be in the right place when wanted. He was subsequently arraigned before the Tribunal, and in reply to the magistrate's question, "Why did you forge the signature?" he said that being a morphino-maniac and knowing full well that he stood a poor chance of getting a doctor's prescription under such circumstances, he was obliged to resort to the means he had employed, for he "must have it, at any price." However, the price he had hitherto paid was—*nil*. In short, the magistrate sentenced him to three months' imprisonment to "enable him to break the habit." Whether he break the habit or no, it is at least to be hoped that he may break any resolutions he may have formed to continue his nefarious practices upon pharmaciens.

Chemists and First Aid.—In England, woe betide the unfortunate chemist who is known to do a bit of minor amateur surgery; his humane act, especially in the case of a poor client, would be regarded as a presumptuous trespass upon the doctor's preserves. In accidents one's own natural instinct prompts one to help a fellow-creature in distress, but to be obliged to do so under all circumstances goes somewhat against the grain, especially in cases where the knowledge required to render that aid effective is not always possessed by every pharmacien who may be called upon to afford it. Such is the unenviable position of pharmaciens in France. The law demands that a pharmacien shall render aid in cases of accidents, etc., when called upon to do so. If someone should tumble out of the bedroom window and smash himself up, kind hands will bear him at once to Mr. Chemist, though one or two doctors may have to be passed to reach him. The chemist is the first man they think about, the doctor the last. The pharmacy is *pro tem.* converted into a hospital, and is fairly crowded with the individuals who bring the patient; if there be any available space remaining it is quickly taken up by as many of the police of the arrondissement as happen to be in the locality. Though you be up to your eyes in work, you must leave it at once and roll up your sleeves for a bit of hospital practice. To say "This wants a few stitches," or "That wants setting," does not always suffice for those gentlemen in blue; you must do something, and do it well, even though the case be subsequently taken to the hospital or a doctor be summoned to the pharmacy, otherwise you may hear something on the subject. What with the sympathetic crowd in the pharmacy and the gazing multitude outside, you may as well abandon all hope of doing any business for an hour or so; and should you have a few clients in the pharmacy when the case arrives, if they be ladies it is pretty certain that they soon clear out, often enough before having completed half their purchases. For your trouble you may perhaps receive something from the patient, but that "something" rarely more than covers the price of materials used. Professional aid is apparently worth nothing when rendered by a pharmacien. In the event of the patient being poor, your bill will perhaps be paid by the police, but you have to wait a dickens of a time for your money. The reckless cabby, however, furnishes the majority of unwelcome "cases," for should he run over and injure an individual, it is not he, but a kind of insurance company, towards which he contributes his quota, which pays his fine; hence the almost utter impossibility of effectually bringing these brawling Jehus to their senses. Until then the list of accidents for chemists to deal with is not likely to diminish. These cases are not only unprofitable in the sense that the remuneration is out of all proportion to the time and trouble they entail, but they put a stop to all business for some considerable time, and "time," in this fashionable quarter of Paris at least, "is money."

New Books.—That able author of medical works, Dr. Renier, chief of the Radiographic Laboratory of the Charity Hospital, has just compiled a little book of 100 pages entitled 'Clinical Radiography and Radioscopy.' The importance of the services rendered to medicine and surgery alike by radiography is incontestable. This little work, so clear and explicit from first to last, should prove a useful and instructive guide for every medical practitioner who desires to be *au courant* with the latest developments of science. The object of the author is to show that radiography, requiring neither complicated material nor any special knowledge, is within the range of every practitioner. He describes successively the mode of production of the X-rays, the necessary material, the *technique* of radiography and radioscopy. He then indicates the medical and surgical application of this new means of diagnosis, indicating relative to each region the *modus faciendi* and the causes of non-success. In the surgical application of the rays, he passes in review foreign bodies, fractures, luxations, inflammatory affections of the bone, etc.; whilst in its medical application he studies the affections of the heart, lungs, etc., and terminates by remarking upon the employment of the X-rays in ophthalmology and obstetrics. The numerous figures explanatory of the contents, tend to increase the value of this interesting little work. The very low price (1 f. 50 c.) should prove no obstacle to any medical or pharmaceutical student who wishes to know something about a science which is as interesting as it is unquestionably useful.

IRISH NEWS.

[*From our Dublin Correspondent.*]

The Governors of the Londonderry City and County Infirmary have appointed the Ulster Chemists, Limited, contractors for the supply of drugs and medicines during the ensuing year.

At an Inquest last week in Belfast on the body of a man named Lecs, whose death occurred through drinking a pennyworth of laudanum, which he procured from a local chemist, the Coroner's jury condemned strongly the sale of laudanum without a medical prescription, and especially to children, and requested the Coroner to convey their opinion to the proper quarter.

Mr. D. A. L. Walsh, B.A., M.P.S.I., Ballinasloe, out of a large number of candidates, has been appointed mathematical master at St. Peter's College, Maragon, Bombay.

The Local Government Board has called the attention of the Mitchelstown Poor Law Guardians to the gradual increase in the medicine contract during the last three years, and points out that the amount for the twelve months just ended exceeds that paid the corresponding period of 1895-96 by close on 60 per cent. An immediate explanation is demanded. The guardians state that some of the items included in the last account are proper to next

year's schedules, and that in a few instances the contractor's charges are exorbitant. At a meeting of the Dispensary Committee, the matter was further discussed, and it was mentioned that the following prices were paid for the articles named, viz. :— Ext. cascara sagr. liq., 2 pints. £2 ; ext. ergota liq., 2 pints, £2 ; syr. ferri iodid., 40 oz., £2 ; lina farina, 1 cwt., 37s. 4d. ; Higginson's enema syringe, 10s. each ; linseed meal, 37s. 4d. per cwt. Dissatisfaction was expressed at such high prices being charged, and the matter was put back for report as to the circumstances under which the contract was accepted.

MR. J. W. HARVEY, L.P.S.I., has opened a new pharmacy at 31, Great Georges Street, Cork.

THE DOCTORS' STRIKE AT CORK.—At the annual meeting, last week, in Cork, of the Central Hall Medical Aid Society, it was stated by the Secretary in connection with the former strike of doctors in that city, and the refusal of practically all the local pharmacists to supply medicine to members, that the medicine ring was broken, as he held in his hand a letter from a city chemist offering to supply drugs, etc., to the Society if required. The chairman said not alone was the medicine ring broken, but also the doctors' "Union," as two local physicians had applied for a vacancy in one of the branch societies, and sent a verbal message to the effect that they were ready to go behind the rules of the British Medical Association.

MR. A. W. STEVENSON, druggist, late of Messrs. Dobbin and Company, pharmacists, Belfast, lies in a critical condition through injuries sustained by the upsetting of his carriage. His skull is very severely fractured. The accident occurred through his horse taking fright at some passing cattle and bolting, coming into collision with a lamp-post, throwing Mr. Stevenson to the ground with great violence.

THE CHEMIST'S BOY.—William James Nagle, messenger in the employment of Messrs. Alexander Boyd and Co., Limited, pharmacists, Lisburn, has got himself into trouble by disregarding the Eighth Commandment, and appeared last week at the local Petty Sessions to answer the charge of theft. It was Nagle's first offence, and the firm consented to reinstate him, considering that the arrest and detention overnight in the police cell would have a good effect in future. The Bench gave him the benefit of the First Offenders Act, and the weeping William was led off by the ear by his father for parental chastisement.

THE GOVERNORS of the Cork District Lunatic Asylum have accepted the tender of the Cork Chemical and Drug Company, Limited, for the supply of medicine for the coming year.

THE OLD CONTRACTOR.—The Local Government Board has informed the Killarney Poor Law Guardians that, when examining tenders for medicine with a view to entering into a contract, it is the practice for the guardians to consult their medical officers, and the Board considers that practice a very desirable one and must be acted upon. The guardians, after consideration, agreed to leave the medicine contract to Mr. Crowley, their old contractor.

THE DEATH HAS OCCURRED at Waterford, of Mr. W. Carden, L.P.S.I., apothecary to the local asylum. The Governors have passed a resolution of condolence with the family of the deceased. Mr. Carden's death was not unexpected, as for some time past he suffered from cancer of the throat.

Marriage.

HURN—MICKLEBURGH.—On December 24, by special licence, Albert Joseph Hurn, M.P.S., of the Surrey Dispensary, London, to Frances Mary, widow of the late R. J. Mickleburgh, of Woodbridge, Suffolk, and Leigham Court Road West, Streatham, S.W.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Sophia Tutt, Mineral Water Manufacturer, 48, Station Road, Worthing.

Dr. Francis Henry Walmsley, 16, Radnor Park Gardens, Folkestone.

James J. Buist, M.B., 48, Charles Street, Cardiff.

ENGLISH NEWS.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—In connection with the above Association a lecture was given by Mr. West at the County Restaurant, on January 3, on "Plant Gossip." It proved to be a most interesting one, touching chiefly on the fertilisation of the lower forms of plant life. The lecture was illustrated by lantern slides.

ROYAL INSTITUTION.—The first half of a course of six lectures, adapted to a juvenile auditory, was given last week at the Royal Institution by Sir Robert Ball, D.Sc., LL.D., F.R.S., Lowndean Professor of Astronomy and Geometry in the University of Cambridge. The first dealt with "The Sun," its size, and the intensity of its heat. The lecturer spoke of the fuel of the sun, and approached the great problem as to the probable duration of our great benefactor, which has already lasted for millions of years. Photographs were shown of a sun-spot and of solar eclipses. The second lecture on "The Moon," like the first, attracted a crowded audience, both young and old. Photographs of the moon revealed its utter barrenness and lack of life. Its surface appeared to be covered with rugged mountains and immense craters of worked-out volcanoes, the largest as big as Wales. Though air and water are now absent there are signs of there having been seas on the moon in bygone ages. The fascinating story of the origin of the moon, the cause of tides and volcanoes was listened to with deep attention. The theory has been advanced that time was, ages before the existence of those prehistoric animals which have been discovered, when earth and moon together formed one molten mass, By a bulging in the side, due to the excessively rapid rotation of this body, a smaller portion became gradually rounded off, and formed the moon. It cooled more quickly than the earth (which is sixty-four times larger), and that explains why its volcanoes are now extinct. The earth, however, is still molten in its interior, and thus volcanic eruptions occasionally take place, for when an earthquake occurs in the bed of the sea water is suddenly poured upon the hot interior, and being converted into immense volumes of steam breaks out in another place in the form of a volcano. "The Inner Planets" formed the subject of the third lecture. Again the lecture theatre was crowded to its utmost extent, and there was ample justification of a *Times* correspondent's letter, urging better exit accommodation, when in the course of the lecture Sir Robert Ball accidentally set fire to some spirit, which spread rapidly along the paper with which the lecture table was covered. The alarm of the crowds of children was already evident, when one of the audience, with conspicuous presence of mind, commenced a round of applause. Thus what might soon have been a panic was happily averted, while the assistants quickly helped Sir Robert to extinguish the flames. Venus and Mars were naturally an attractive pair of planets. The phases of the beautiful evening star—much like those of the moon—its orbit, atmosphere, and transits were lucidly described and well illustrated, as is usual at the Royal Institution, by photographs, some of them moving, on the screen. Views of Mars were shown, explanations were given as to its reddish colour, as well as of the celebrated canals which form a network on its surface.

JUNIOR PHARMACY BALL.—Mr. W. J. Henson, Beulah Hill, Norwood, S.E., the Hon. Secretary to the Junior Pharmacy Ball Committee, asks us to state that he will be pleased to hear from gentlemen who are willing to be Stewards at the Junior Pharmacy Ball, to be held in Portman Rooms, Baker Street, on Wednesday, February 8 next, for which there are several vacancies. He also points out that as the whole of the 400 tickets were sold last year nearly a week before the Ball, it is desirable that those wishing to go should apply early for tickets. It will interest many to know that the Committee was able to present fifteen guineas to the Benevolent Fund as the result of last year's Ball, although it is undoubtedly one of the best and cheapest Balls in London, as the 7s. 6d. ticket covers the cost of supper and refreshments during the evening.

A DISPENSER'S FATAL MISTAKE is reported by the *Daily Mail* and other papers, in which it is stated that a Stockport doctor gave evidence at a coroner's inquiry on the body of a woman named Patience Broderick, that the death had occurred through his

dispenser having made a mistake in making up a prescription. Death was immediately due to an overdose of morphine, the dispenser, according to the doctor, having put in fifty grains instead of one and a-half. It was alleged that, of late, the dispenser had been very depressed, and must have been suffering from temporary mental aberration when he made up the prescription. The inquest was adjourned for a post-mortem examination. Meanwhile, it would be interesting to know whether the dispenser is a duly qualified person.

In the Chemistry Honours List B.Sc. Examination, London University, 2nd division, published this week, the names of two pharmaceutical chemists appear—Mr. C. E. Ashby, demonstrator in the Pharmacetical Society's School, and Mr. W. Colebrook Reynolds, of Harrogate. Mr. Reynolds' name also appears in the Experimental Physics Honours List, 2nd division.

Hydrochloric Acid for Rum.—An inquest was held at Guy's Hospital on Wednesday, December 28, on Charles Henry Burgess, cook on the steamship "Jaffa," who died in hospital on Christmas Eve. Helen Margaretha, a nurse, stated that the deceased was conscious on admission, and made the following statement:—"I bought some hydrochloric acid for the cleaning of the ship's brass, and while ashore with some of our boys I bought some rum. Later on, while skylarking, I went to drink the rum, but during the joking I did not notice I had the wrong bottle until I had drunk some." Dr. Cleveland stated that death was due to the effects of the acid, and the jury returned a verdict of "Death by misadventure."

An Overdose of Medicine.—The Stockport Coroner held an inquest at the Stockport Infirmary, on Friday, December 23, touching the death of Catherine Sutton. The evidence was to the effect that on the previous Wednesday night Mrs. Sutton had complained of feeling very ill, and was afterwards found dead in bed with a cork in her hand, and an empty medicine bottle was found on the floor.—Theodore Henderson Molesworth, house surgeon at the Stockport Infirmary, said the woman had been an out-patient at the Infirmary for some time. On December 23 she was served with a 10-oz. bottle of medicine. Amongst other properties the medicine contained morphine, hydrocyanic acid, strychnine, bismuth, and chloroform, though these were in small quantity. The medicine as prescribed would have done no harm, but if the contents were taken in one dose in her condition it might have been the cause of death.—The jury returned a verdict of "Death from an overdose of medicine taken to relieve pain."

Alleged Theft from Wholesale Druggists.—Alfred Charles Hammersley (31), of 77, Church Road, Islington, clerk, and William Walter Cole (24), of The Firs, Llanover Road Wembley, clerk, were charged at Southwark Police Court, on Wednesday, January 4, with stealing and receiving a bottle of compound syrup of hydrophosphites, value 2s. 3d., the property of Hammersley's employers, Messrs. Wright, Layman, and Umney, wholesale druggists and manufacturing chemists, of Southwark Street. Mr. Robert Humphreys prosecuted, and stated that £20 worth of property belonging to the prosecutors had been found by the police at Hammersley's residence. He appeared to have been stocking perfumes to a considerable extent, and also dispensing medicines, as amongst the things found at his place were a quantity of salicylic acid and a pair of apothecaries' scales. Cole, so far as was known at present, was a respectable man, and the only evidence against him was that he bought the stolen bottle of medicine of Hammersley, and presented it, as a tonic, to a barmaid at the Pied Horse, Chiswell Street, Finsbury.—The prisoners were remanded, and Cole was allowed bail in £40.

Chemists' Almanacs.—Mr. J. H. Watson, M.P.S., Shipley, sends a copy of his illustrated family almanac for 1899, this being the nineteenth year of publication. A photograph of the shop appears on the front page, also a table of hours of business, and a request to "Kindly remember our Tuesday half-holiday." The literary matter is of an extremely interesting character, while, in addition to the usual postal and other information, "Local Memoranda" are published, which tend to make the almana calmost indispensable for reference in every well-regulated house in the district.—Mr. M. Smith, Ph.C., M.P.S., Kidderminster, is also the publisher of an annual almanac, and that for 1899 contains much valuable local, postal, legal, and other information, as well as interesting literature, a diary and space for a cash account for the year, cyclists' lighting-up times, and a photograph of the interior of Mr. Smith's Oxford Street pharmacy.

Poisoning by Carbolic Acid.—In the course of an inquest held at Guy's Hospital on Wednesday, December 28, on Violet Mary Kate Taylor, aged nine and a-half months, the daughter of a Dockhead grocer, evidence was given that on Christmas Eve the mother was ill in bed with the deceased by her side, and on the table were the baby's medicine and some carbolic acid which the doctor had ordered for external use. The baby cried, and the mother wished to give it some medicine, but the nurse gave her the wrong bottle, and to the child some carbolic acid was administered. The bottles were of the same size, and the contents alike in colour and quantity.—Dr. Cleveland stated that death resulted the next day from the effects of the acid.—A verdict was returned of "death from misadventure," with a rider that no blame was due to anyone *(sic)*.

A Milk of Sulphur Case, heard at Petersfield Petty Sessions a fortnight ago, was remarkable for the misconceptions that prevailed in the minds of witnesses. The defendant had apparently sold a preparation containing calcium sulphate, but the witnesses for the prosecution referred to that compound impartially as sulphate of lime or plaster of Paris. The solicitor for the defence apparently did not know enough chemistry to put the witnesses right and he, in turn, alleged that "the British Pharmaceutical Society had issued a new Pharmacopœia." Medical men were called to say they preferred calcium sulphate in their milk of sulphur, and ultimately the sadly mixed magistrates, after retiring for five whole minutes to consider their decision, announced that they had considered the case very carefully and thought, after taking into consideration that the terms milk of sulphur and precipitated sulphur were only made synonymous "in recent years," that they must dismiss the case, but at the same time they thought the public analyst was perfectly justified in bringing it forward.

Food and Drugs Act Prosecutions.—At the Clerkenwell Police Court on Wednesday, Jan. 4, Robert S. Page, of 186, Essex Road, Islington, was summoned by the Islington Vestry, for having sold, on Dec. 1, two quantities of eucalyptus oil that did not conform to the requirements of the British Pharmacopœia. Mr. Bramall prosecuted, and Dr. Teed, who gave evidence against defendant, proved examining the samples submitted to him. The first sample rotated the plane of the ray of polarised light 29 deg. 6 in. to the left in a tube 100 millimetres long. It had a specific gravity of 0·8092, showed the presence of phellandrene, and did not conform to the test for cineol. The second sample rotated the plane of polarised light 69 deg. 7 in. to the left. It had a specific gravity of 0·8758, showed the presence of phellandrene, and did not conform to the requirements for cineol.—The defendant: Is the oil I sold an adulteration?—Dr. Teed: No.—The Defendant: Is it eucalyptus oil?—Dr. Teed: Yes.—Mr. Horace Smith: I understand you do not contend that the oil contained any foreign matter, but that it was made from an inferior plant.—Dr. Teed: Yes.—The Defendant: Does the sample comply with the British Pharmacopœia of 1885?—Dr. Teed: Yes.—The defendant contended that chemists should have been given a longer time to sell out their stock of oil which complied with the Pharmacopœia of 1885, and which was purchased prior to the issue of the Pharmacopœia of 1898. Mr. Horace Smith ordered the defendant to pay a fine of 5s. and £1 3s. in each case—£2 16s. in all.—Robert Vincent, trading as Bishop's Drug Stores, 460, Holloway Road, was summoned for the same offence, and fined 5s. and 23s. costs. Replying to questions, Dr. Teed admitted that these were the first tests he had made of eucalyptus oil purchased under the Sale of Food and Drugs Act.

Publications Received.

A Preliminary Study of the Prickly Pears Naturalised in New South Wales. By J. H. Maiden. Pp. 30, and six plates. Sydney: Department of Agriculture, New South Wales. 1898. From the Author.

The Chemists' and Druggists' Diary, 1899. Pp. vii. + 628. London: 'Chemist and Druggist' Office, 42, Cannon Street, E.C. From the Publishers.

WELSH NEWS.

A JURY AND THE SALE OF CARBOLIC ACID.—At an inquest held at Mold, on Wednesday, December 28, touching the death of Joseph Burgess, a collier, aged nearly 21 years, of Buckley, who had committed suicide by taking carbolic acid, a question arose as to whether the inquest should be adjourned to secure the attendance of Mr. D. Hughes, chemist, to give evidence regarding the sale of the carbolic acid to the deceased. The absence of Mr. Hughes was attributed to an urgent case of illness of a relative.—The Coroner said the chemist would not be able to give them any further information regarding the cause of death. There was no doubt he had acted within his rights in selling the carbolic acid, as there were no restrictions on the sale of the article. He noticed a similar death had recently taken place in Liverpool, and in the county of Flint alone within the past few years there had been four or five suicides by taking carbolic acid. Any person could procure enough carbolic acid to kill half-a-dozen persons. It was certainly time some restrictions should be placed upon the sale of carbolic acid, and that that article should be relegated to the schedule of poisons as issued under the Pharmacy Act.—A verdict was returned, to the effect that deceased committed suicide by taking carbolic acid during a fit of temporary insanity, and the jury passed a resolution condemning the facilities with which carbolic acid could be obtained.—The Coroner promised to forward the resolution to the Home Secretary.

SCOTTISH NEWS.

RESULT OF A PRACTICAL JOKE.—On January 3, Francis Murray (31), an Irishman, was remitted from Glasgow Central Police Court to the Sheriff on a charge of having administered a quantity of liquid ammonia to a young woman with intent to do her serious bodily injury. He met her in Argyle Street on New Year's Day, and offered her a drink from a bottle which he had in his hand. She refused, and Murray then asked her to smell the contents. While she was doing so, Murray, it is alleged, thrust the bottle into her mouth and poured out part of the ammonia, with the result that the young woman's mouth and throat were severely burned. She was removed to the Royal Infirmary.

EXPLOSION AT A CHEMISTRY CLASS.—A claim against Leith School Board, at the instance of Mr. James Marshall, 54 Charlotte Street, Leith, for his daughter, Lizabel Marshall, has been settled out of court. The ground of the claim was for injuries sustained by the girl at Leith Academy on Friday, October 28 last, by the explosion of a jar containing sulphuric acid. It seems that while the senior chemistry class were receiving their customary lesson, and certain experiments were being tried, the jar burst, and the sulphuric acid spread itself amongst the pupils, with the result that Lizabel Marshall was severely burned about the forehead, face, and arms. Fortunately, she closed her eyes with the report, but, notwithstanding, she was blind for five days. Her dress was destroyed by the acid. The Board has now settled the claim by payment of 100 guineas in full of all claims for loss, injury, and damage.

Trade Notes.

MESSRS. C. J. HEWLETT AND SON, Charlotte Street, London, E.C., are issuing as a circular a reprint with additions from "Notes on the New British Pharmacopœia, 1898," published by the firm, giving the important alterations of the B.P., 1898, together with the new titles of preparations and synonyms.

MESSRS. WRIGHT, LAYMAN, AND UMNEY, 48 and 50, Southwark Street, London, S.E., send a copy of their new Prices Current for January, 1899, which is the first of a new series. The first part of it is devoted to an ordinary monthly "prices current," and this will be republished on the first of each month during the year. Parts 2, 3, and 4 will be published on the first of each quarter, and consist respectively of lists of pills and tablets, packed specialties for chemists' sale, and notes on current matters of pharmaceutical interest. This new departure of Messrs. Wright, Layman, and Umney is carried out with the characteristic thoroughness of the firm. It is printed in colours, and is a distinct advance on anything of the kind previously published.

PRACTICAL PHOTOGRAPHIC NOTES.

FERRIC OXALATE IS A SALT for which at the present moment there is a little demand and it may be useful to indicate how a solution of it may be readily prepared. Finely powder 52 Gm. of ammonia iron alum, and place in a tall 1000 C.c. measure, on to this pour 20 C.c. liq. ammoniæ fort. and 10 C.c. water, stir well for five minutes and then fill up with water and allow the precipitate to settle down. Decant the supernatant liquid and again fill up with water and repeat the operation till the washing waters no longer give a precipitate with barium chloride. Then set the beaker aside for twelve hours till the precipitate has subsided sufficiently to allow enough of the clear water to be drawn off, so that no more than 75 C.c. of total bulk of precipitate and water be left; to this add 21·5 Gm. of pure oxalic acid, and stir well and in a few minutes a perfect solution will be obtained which should be filtered through a small filter paper, and enough distilled water washed through the filter to make the solution measure 100 C.c. in all. The result is a 20 per cent. solution of ferric oxalate, which must be kept in the dark.

MM. LUMIERE AND SEYEWITZ, whose researches in the domain of developers are well known, have been trying the various amines, and have found that mono-methylamine NH_2CH_3, mono-ethylamine, $NH_2C_2H_5$, dimethylamine $NH(CH_3)_2$, and trimethylamine $N(CH_3)_3$ may be used instead of the alkalies, and of these the last is the most satisfactory. The formulæ they give are:—

1.	Hydroquinone	8 Gm.
	Sodium Sulphite Anhydrous	35 Gm.
	Sol. Trimethylamine (33 per cent.)	100 C.c.
	Water	1000 C.c.
2.	Pyrogallol	10 Gm.
	Sodium Sulphite	30 Gm.
	Sol. Trimethylamine (33 per cent.)	60 C.c.
	Water	1000 C.c.
3.	Paramidophenol (base)	10 Gm.
	Sol. Trimethylamine (33 per cent.)	150 C.c.
	Sat. Sol. Sodium Sulphite	1000 C.c.

This last enables one to obtain a much more concentrated and energetic developer than by any other means, as paramidophenol is not a readily soluble substance. They also found that propylamine, butylamine, amylamine, and benzylamine also act, but in a less degree. The aromatic amines cannot be used. The objection to the use of these substances is of course their disagreeable smell, but they are extremely energetic and may be useful in certain cases.

THE USE OF GLASS FOR SQUEEGEEING PRINTS DOWN TO for obtaining a highly-polished surface, is fairly common, and, whilst old negative glass is sometimes used, plate glass is preferable. Frequently ground glass is used to obtain a matt surface on ordinary P.O.P., a far better material, however, is the imitation ivory celluloid, which gives a very much finer surface; this is also useful as a temporary support for carbon tissue, and if Eastman's Transferrotype or Schölzig's Novitas Stripping P.O.P. be used, some charming little ornaments for the house may be made.

THERE IS ONE SOLUTION which ought to be a fairly good selling line at any time of the year, and that is a waxing solution for applying to glass to enable the amateur to strip his gelatino-chloride prints easily from the saucer. A strong linimentum saponis has been used with success, but better even than that is a solution of beeswax and yellow resin in turpentine. With this, delicately scented with oil of lavender or something else, good business should be done; it is better than using any benzole mixture, for the latter solvent evaporates so quickly that it is not so easy to well distribute over the glass. The particular formula is:—

Yellow Wax	15 Gm.
Yellow Resin	40 Gm.
Oil of Turpentine	1000 C.c.

Directions for use: Let a few drops fall on to the centre of the sheet of glass upon which the prints are to be squeegeed, distribute with a pad of flannel, and then polish with soft linen.

MARKET REPORT.

The quotations here are given in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

JANUARY 5.

There has really been more actual business doing during the past few days than even the more sanguinely minded were prepared for, and while the actual changes in price of any special importance have not been numerous, the idea seems to be more and more gaining ground that we are on the eve of a period of considerable commercial activity. Many very shrewd people have been in the habit of basing their views as to the future as regards business, on the position and prospects of metals, *i.e.*, of iron and copper, and of heavy chemicals, and upon these lines there would really appear ground for the hopes of commercial activity and prosperity in the near future. The principal change of the week has been a further advance in importers' price of Quicksilver, which this time will no doubt be followed by an advance in makers' prices for Mercurials. Quinine is quiet and somewhat undecided. Cocaine firm. Borax and Acid Boracic steady. Acid Citric, Acid Tartaric, and Cream of Tartar quiet. Sulphate of Ammonia firm and rather dearer. Iodides and Bromides steady at unchanged prices. Potash Permanganate rather steadier. Glycerin and Cod-Liver Oil dull. Cascara Sagrada dearer. The following are particulars of values actually ruling for some articles of interest :—

ACETANILIDE.—A really good and reliable article cannot be bought at a cheaper price than the rates fixed by the combined makers, viz., 11d. per lb. for 5-cwt. lots, smaller quantities being charged higher in proportion.

ACID BORACIC—Is firm at unchanged prices, viz , 26s. and 28s. per cwt. for crystals and powder.

ACID CARBOLIC.—The market for this article has been fairly active. The best make is quoted 6¾d. to 6⅞d. per lb., according to quantity, for the 35-36° C. *ice crystal* in 2½-cwt. drums and over-casks ; 7¼d. to 7⅜d. per lb. for 39-40° C. *ice crystal*, and 8¼d. to 8⅜d. per lb. for the 39-40° C. *detached crystals* in bulk packing. *Crude* : 60° F., 2s. per gallon ; 75° F., 2s. 4d. per gallon. *Liquid*, 95 per cent. of pale straw colour, 1s. to 1s. 2d. per gallon, according to quantity, packed in 40-gallon casks.

ACID CITRIC.—Makers' price is 1s. 1d. per lb. on the spot for *English*.

ACID OXALIC—Is unchanged at 3d. to 3⅛d. per lb. nett, free delivered London.

ALOES.—*Curacoa* appear to be scarce, and high prices would be obtainable for really good quality.

AMMONIA COMPOUNDS.—*Bromide* is steady at 2s. per lb. *Carbonate* : 3d. to 4d. per lb., according to quantity, packing, etc. *Iodide* : 14s. 3d. per lb. *Muriate* : White, free from metals, is quoted 25s. to 27s. 6d. per cwt., and 30s. to 32s. 6d. per cwt. *Oxalate* unchanged at 5½d. per lb. *Sal Ammoniac* quiet at 33s. to 35s. per cwt. for the sublimed firsts and seconds, the crushed for batteries costing 2s. per cwt. more. *Sulphate* is firm at rather dearer rates, viz., grey prompt, 24 per cent, London, £10 3s. 9d. per ton ; January to June, £10 5s. ; Hull, prompt, £10 2s. 6d. ; January to June, £10 5s. ; Leith, prompt, £10 3s. 9d. ; January to June, £10 5s. ; Beckton, prompt, £10 5s. ; January to June, £10 2s. 6d. Beckton terms £10 2s. 6d. per ton. *Sulphocyanide* is quoted 1s. 1d. to 1s. 2d. per lb., according to quantity.

ANTIMONY—Is rather lower at £36 10s. to £37 per ton for *Regulus*, and £22 to £22 10s. per ton for *crude Japan* (black oxide).

ANTIPYRINE KNORR.—Is unchanged in price. The Star Brand of *Phenazone* (which is manufactured by the patentees of Dr. Knorr's antipyrene) has been reduced slightly in price, in order to meet the competition of other brands of phenazone.

ARECA NUTS—Are scarce, and 33s. per cwt. is the quotation for fair quality.

ASAFETIDA.—A fair business has been done for export, in the medium qualities at, say, 45s. to 50s. per cwt.

BLEACHING POWDER (CHLORIDE OF LIME)—Quiet at £6 per ton for English make.

BORAX.—Firm but unchanged at 16s. 6d. and 17s. per cwt. for crystals and powder respectively.

BROMIDES AND BROMINE—Market is very steady at 1s. 10½d. per lb. for *Potassii Bromid.*, 2s. 1½d. per lb. for *Sodii Bromid.*, and 2s. 2d. per lb. for *Ammon. Bromid.* *Bromine* is still quoted 2s. 1d. per lb. in cases of 60 lbs.

CAMPHOR.—Market for *Crude* is quiet and no sales are reported ; for arrival quotations are nominally 96s. per cwt., *c.i.f.*, for *China*, and 106s. per cwt., *c.i.f.*, for *Japan*. *Refined* : The prices of the English manufacturers remain unchanged at 1s. 4½d. per lb. for *Bells*, in 1-ton lots, tablets being dearer in proportion. *German* refiners, on the other hand, reduced their prices ½d. per lb. to 1s. 4d. per lb. for *Bells* in 1-ton lot.

CASCARA SAGRADA.—Really good old *Bark* is now unobtianable below 30s. per cwt., there being offers of unsightly dull and inferior thick bark at 26s. to 27s. per cwt., without, however, finding buyers. Good new bark can be bought in limited quantity at 26s. to 26s. 6d. per cwt. There being a demand for re-export to the United States, where the article is quoted above the prices named, it would appear probable that we shall see a further advance in value.

CLOVES.—The total receipts in *Zanzibar* to the end of December are officially returned as 72,000 bales. The market here is depressed, and lower prices rule. For delivery the sales include Jan.-March at 3 7/32d., and March-May at 3¼d. to 3 7/32d.

COD-LIVER OIL.—The market is very quiet at nominally 75s. to 80s. per barrel, according to brand, for best 1898 non-congealing *Norwegian* oil in tin-lined barrels.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*, commercial, 1s. ; pure, 1s. 3d. to 1s. 6d. per gallon *Benzole* is quoted 9d. per gallon for both the 50 per cent. and the 90 per cent quality. *Crude Naphtha*, 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*, 95 per cent. at 160° C., 1s. 7d. per gallon ; 90 per cent. at 160° C., 1s. 3d. ; 90 per cent. at 190° C., 1s. 3d. per gallon. *Pitch*, 25s. per ton, *f.o b.* *Tar* : Refined, 12s. 6d. per barrel, 2d. per gallon ; crude, 12s. per barrel, 2d. per gallon.

COCAINE.—All advices appear to concur in reporting continued scarcity of and high prices of raw material, both *leaves* and *crude*, while for the *refined* article makers profess to be exceedingly firm in their views, their price for the brands most in favour being nominally still 10s. 6d. to 10s. 9d. per oz. for the *Hydrochlorate* in 25-oz. tins and for 100-oz. lots. One maker stating that he has nothing to offer, another maker even quoting 11s. From second hand moderate quantities are, however, still obtainable at 10s. to 10s. 3d. per oz., according to quantity and brand.

CODEIA.—Price is maintained at 12s. 6d. per oz. for the *pure*, and 11s. 6d. per oz. for the *Hydrochlorate*, *Phosphate* and *Sulphate* salts.

CREAM OF TARTAR.—First white crystals are still quoted 73s. 6d. per cwt. on the spot, powder 75s. 6d. to 77s. per cwt.

CUBEBS—Are in speculative demand, and a few hundred bags have changed hands. Nothing can now be had below 25s. per cwt., in fact, it is doubtful whether holders would go on selling at all, except at a higher price than that mentioned.

GLYCERINE.—Market is fairly steady at £24 to £26 per ton for *crude* from soap lees ; £28 to £30 for *crude* saponified from candle making ; and £25 10s. to £26 per ton for the *crude* distilled from candle-making. *Refined* is somewhat quiet at 50s. to 52s. 6d. per cwt. for *English*, and 52s. 6d. to 60s. per cwt. for *German*, according to quantity and brand, for the best white chemically pure double distilled 1260° quality, in tins and cases (4 × 56 lb. tins in a case).

IODIDES AND IODINE—Are somewhat quiet at 10s. 6d. per lb. for *Potass. Iodid.*, 11s. 11d. per lb. for *Sodii Iodide*, 14s. 3d. per lb. for *Ammon. Iodid.*, 13s. 10d. per lb. for *Iodoform Cryst. Pulv.* and *Precip.*, and 12s. per lb. for *Iodine* resublimed. Price of *Crude Iodine* remains unaltered at 7½d. per oz.

Monthly Statement of Drugs, etc., Warehoused in London.—January 2, 1899.

Articles.		Dec., 1898.		Stocks, Dec. 31.	
		Arrivals.	Deliveries.	1898.	1897.
Aloes (all kinds)	packages	114	175	4,480	5,069
Balsams ,,	,,	6	64	375	428
Cinchona Bark	,,	1,968	2,193	19,991	16,695
Quinine Sulphate	ounces	83,296	13,216	1,795,984	1,539,264
Beeswax	packages	564	902	1,699	2,303
Camphor	,,	658	2,332	5,894	11,438
Cardamoms	,,	285	208	1,262	470
Cochineal	,,	165	312	2,590	2,529
Calumba Root	,,	63	89	536	23
Cubebs	,,	—	15	1,843	389
Dragon's Blood	,,	24	6	47	60
Galls (all kinds)	,,	39	947	2,981	3,771
Gum, Ammoniacum	,,	—	3	64	29
Arabic, all kinds	,,	3,291	1,813	11,373	12,430
Asafœtida	,,	—	61	290	490
Benjamin	,,	100	298	2,144	2,373
Gamboge	,,	14	23	393	295
Guaiacum	,,	—	20	65	66
Kino	,,	5	3	66	21
Gum, Mastic	packages	10	1	30	—
Myrrh	,,	18	58	409	556
Olibanum	,,	97	332	2,507	931
Ipecacuanha	,,	68	31	201	263
Jalap	,,	40	33	303	342
Nux Vomica	,,	57	608	136	129
Oils, Castor	,,	372	319	708	493
Olive	,,	32	178	549	645
Aniseed	,,	40	16	277	141
Cassia	,,	—	2	24	130
Rhubarb	,,	72	171	1,627	970
Saltpetre	tons	737	782	1,340	2,468
Sarsaparilla	packages	50	68	366	184
Senna	,,	119	370	1,212	1,357
Shellac	,,	4,101	3,225	49,068	51,948
Terra Japonica, Gambier	tons	518	334	1,000	1,705
Cutch	,,	23	80	1,069	1,416
Turmeric	,,	6	21	253	318

The stocks of camphor, oils of aniseed and cassia are incomplete, some warehouses not making returns.

IPECACUANHA—Continues weak. *Rio* could be obtained at 9s. 7d. per lb. for fair quality, at which figure a few bales have changed hands. For *Carthagena* the quotation is quite nominal, no business having been done in this variety.

MENTHOL—Market is firmer at 7s. 9d. to 8s. per lb. for good dry white crystals on the spot, while to arrive the article is quoted 8s. to 8s. 3d. per lb.

MERCURIALS—Will no doubt be advanced, in consequence of the rise in price of quicksilver, makers' present actual prices being: *Mercury Chloride B.P. (Calomel)*, 2s. 8d. per lb.; *Mercury Bichloride (Corrosive Sublimate)*, 2s. 4d. per lb.; *Mercury Red Oxide, B.P. (Red Precipitate)*, 3s. per lb.; *Mercury Ammoniated B.P.* (*White Precipitate*) and *Mercury Yellow Oxide, B.P.*, 3s. 1d. per lb. It is, however, doubtful whether they would to-day still book orders at these prices.

MORPHIA.—The market is rather weaker, and it would be possible to buy from the makers at 4s. 10d. per oz. for the *Hydrochlorate salt* in *powder*, price of the *crystals* being 2d. per oz. more money.

OILS (ESSENTIAL).—*Clove*: Makers have reduced their price 2d. per lb., in consequence of lower value of the raw material; quotations are now 2s. 11d. per lb. for best English, and 2s. 6d. per lb. for the No. 2 quality. *Sweet Oil of Almonds*: English is again higher at 1s. 6d. per lb., while for the bleached quality 1s. 7d. is now asked. *Sandal wood*: English is very firm at 13s. per lb., the wood being very scarce. *Cubeb* is rather firmer at 4s. 3d. per lb. *Star Aniseed*: Very slow of sale at 6s. 1d. per lb. *Cassia* is firm at 5s. per lb. for 75 to 80 per cent., and 5s. 3d. per lb. for 80 to 85 per cent. *Lemongrass* is lower at 3d. per oz., in consequence of fair arrivals from the other side. *Peppermint*: Japan dementholised, 3s. 6d. per lb., 40 per cent. 5s. per lb. American H.G.H. is lower at 5s. 3d. to 5s. 4½d. per lb.; Mayne County, 3s. to 3s. 9d. per lb., according to quality. *Citronella*: Business is slow on the spot, but, for arrival, a fair quantity has changed hands at late rates. Quotation on the spot is 1s. 1d. per lb. in tins.

OILS (FIXED) AND SPIRITS.—*Linseed* is firm at £16 10s. to £16 12s. 6d. for pipes, and £17 for barrels spot London. February to April, May to August, and September to December being quoted £17; Hull spot naked £15 12s. 6d.; February to April, and May to August £15 15s. *Rape*: Ordinary brown spot and February to April £20 15s.; refined spot £22 5s.; Ravison naked spot and February to April £16 17s. 6d. *Cotton* firmer at £12 15s. for London crude spot, February to April £12 15s. to £12 17s. 6d.; refined spot £14 5s. to £15, according to make; Hull naked refined spot, and February to April £12 10s., May to August £13 2s. 6d., crude spot, and February to April £12 10s., May to August £12 2s. 6d. *Olive*: Spanish, £29; Levant and Mogador, £29 to £32. *Coconut*: Ceylon spot, £26; near at hand, £24 *c.i.f.*; February to March, £23 7s. 6d. *c.i.f.*; Cochin spot, £30 10s.; January to March, £25 15s. *c.i.f.* *Palm* firm; Lagos spot, £22 10s. *Lubricating Oils*: Pale American spot, 5s. 6d. to 7s.; black, 4s. 9d. to 5s. 6d; Russian, black, 4s. 6d. to 5s.; pale, 7s. to 8s. *Turpentine*: Market continues very firm at 32s. 6d. for American spot; February to April, 32s. 10½d.; May to June, 31s.; July to December, 24s. 10½d. to 25s. *Petroleum* firm; Russian spot, 5⅛d. to 5¾d. per gallon; American spot, 6⅜d. per gallon; water white, 7½d. per gallon. *Petroleum Spirit*: American, 8d. per gallon; deodorised, 8½d. per gallon.

OPIUM.—Market is quiet, at nominally unchanged prices, there being practically, so far, nothing doing in the article.

PHENACETIN—Is quiet, but fairly steady. The hoped-for improvement in value of this article not having, however, so far taken place. Best makes are quoted 3s. 9d. to 4s. 3d. per lb., according to quantity and packing, for both *crystals* and *powder*. *Bayer's* make is still held for 5s. 6d. per lb., and *Riedel's* for 5s. 5d. per lb. in 1-lb. bottles.

POTASH COMPOUNDS.—*Bicarbonate*: 30s. to 35s. per cwt. for crystals or powder, according to quantity and brand. *Bichromate* is still quoted at 3½d. per lb. *Bromide* steady at 1s. 10½d. per lb. *Chlorate*: Crystals are quoted 3¾d. per lb., and powder 4d. per lb., spot, London. *Oxalate*: Neutral is unchanged at 5½d. per lb. *Permanganate*: Rather firmer at 52s. 6d. per cwt. for small crystals and 5s. per cwt. more for large crystals in 1-cwt. kegs. *Prussiate*: Yellow English remains at 7d. per lb., the red being quoted 1s. 1d. to 1s. 3d., per lb., according to quantity.

POTASH PERMANGANATE.—Market is somewhat steadier, the pressure on part of manufacturers to book orders for later delivery during the year not appearing to be quite so acute. 50s. per cwt. is now the price for the small crystals and 55s. per cwt. for the large crystals in 1 cwt. kegs, and for lots of half to one ton.

QUICKSILVER.—After doing a large business at £7 15s. per bottle, the importers refused to go on selling at this figure. To-day's price is nominally £7 17s 6d. from first hand, but all orders have to be first submitted, it being expected that price will very shortly be further advanced to £8 per bottle. There are, at the moment, no sellers from second hand below the importers' price.

QUININE—Market remains very quiet; people having apparently adopted the tactics of Mr. Micawber, and are, as it would seem, "waiting for something to turn up"; it having even been irreverently stated that the makers themselves have been obliged to take up the same position. There is no change in the nominal position of the article. German makers quote, for the best brands, 10½d. per oz., for 1000-oz. lots in 100 oz. tins, without, however, being free sellers at this, or, as it appears, at any price at all. The secondhand seems to have assumed the same waiting policy, the general opinion remaining, however, that we shall see a higher price for the article in the not too distant future.

ROSIN—Quiet and unchanged at 4s. 4½d. per cwt., ex wharf, on the spot; and 4s. 1d. per cwt., *c.i.f.*, to arrive, for January to March and March to May shipment, per sailing vessel.

SENNA.—For *Tinivelly* there is a moderate inquiry; business, however, is checked by the firmness of holders, who ask a good profit on the rates paid in last public sale. Arrivals are coming in slowly; it is, however, believed that supplies are being held

back on the other side, and that the apparent scarceness will prove to be only of temporary. *Alexandrian* the bulk of the stock here is of undesirable quality, which has checked business, practically no sales having taken place. There has been somewhat more inquiry for siftings, but at prices only which holders would not accept.

Soda Compounds.—*Crystals*: barrels are quoted 55s. per ton; bags, 52s. 6d., ex ship Thames. *Ash*: £5 to £5 15s. per ton, according to strength, etc. *Bicarbonate*: 97 per cent., £7 10s. to £8 per ton, and for the fully bicarbonated 18s. 6d. per cwt. *Bichromate* is still quoted 2¾d. per lb. *Bromide* is steady at 2s. 1½d. per lb. *Caustic*: White, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. *Hyposulphite*: 6s. 6d. to 8s. per cwt. *Iodide*: 11s. 10d. per lb. *Nitrate*: commercial, £7 15s.; refined, £8 per ton.

Sulphate of Copper—Is dearer in sympathy with the firmness in price of the metal at £18 5s. to £19 10s. per ton, according to quantity and brand.

Sulphonal.—Makers' price is unchanged at 17s. per lb. for *crystals* or *powder*, while what is offering at a cheaper rate from second hand is being quietly bought up by those requiring the article; such cheaper supplies from second hand are consequently being absorbed, after which nothing will be obtainable below makers' prices.

Vanilloes.—A special sale of this article was held to-day, at which the large quantity of 1000 tins was offered, the bulk being of the *Seychelles* variety. Prices were fully maintained, and in fact rather dearer, the demand being especially brisk for the finer qualities, 8 to 8½ inch selling at 28s.; 7½ to 8 inch at 25s. 6d.; 7 to 7½ inch at 24s. to 24s. 6d.; 5 to 6 inch at 21s. 6d. to 22s.; and 3 to 4½ inch at 20s. 6d. per lb.

Liverpool Market Report.

January 4, 1899.

In spite of the disturbance to business caused by the New Year holiday, a fair amount has been done, and prices so far obtained are good and steady. The phenomenal rise in Spirits of Turpentine still continues, the figure now asked being higher than last week's. Sales of a miscellaneous character include Chilian Beeswax in some amount at satisfactory rates, and Syrian Fœnugrec. The chief features of the chemical market are the scarcity and high rates in Borax, a rise in Copper Sulphate, and a firmer feeling in Ammonia Sulphate.

Alum.—Lump, £4 12s. 6d. to £4 15s. a ton; powder, £5 7s. 6d. to £5 10s. per ton.

Ammonia Salts.—Sal Ammoniac, 33s. to 35s. per cwt.; Carbonate very firm, 3d. per lb.; Sulphate, £10 5s. per ton.

Beeswax.—Sales of Chilian have been effected at prices ranging from £6 15s. to £7 10s. per cwt.

Canaryseed.—Turkish meets with but little inquiry, and there are no sales to report; therefore the quotation 28s. to 29s. per 464 lbs. must be regarded as nominal.

Copperas—39s. and 37s. per ton.

Copper Sulphate—£18 17s. 6d. to £19 per ton.

Fœnugrec.—75 bags of Syrian found purchasers at 8s. 3d. per cwt. ex-quay, and 8s. 6d. per cwt. ex-store.

Linseed—Is scarce, and holders are very firm in the high rates asked. River Plate seed (new season's) offers at 35s. 6d. per 416 lbs.

Oils (Fixed) and Spirits.—*Castor* of all kinds continues very firm, both on the spot and forward; Calcutta at 2⅞d. per lb.; French 1st pressure at 2 13/16d. per lb.; Madras and Bombay at 2⅝d. per lb. *Olive* commands a fair amount of attention, inquiry is good, and prices have advanced 20s. to 30s. per ton in Spain. Spot rates here are: Malaga, £30 to £31 per ton; Seville, £29 10s. to £30. *Linseed* continues in fair demand at the steady rate of 17s. 6d. to 18s. 6d. per cwt. *Cottonseed* is quiet at 15s. 3d. to 15s. 9d. per cwt. for Liverpool refined. *Spirits of Turpentine* has risen to 33s. 3d. per cwt., and seem inclined for a further advance.

Potash Salts.—*Bichromate*, 3½d. per lb.; *Chlorate*, 3½d. to 3¾d. per lb.; *Cream of Tartar* is quiet at 72s. to 75s. per cwt.; *Pearlash*, 34s. 6d. to 35s. per cwt.; *Potashes*, 25s. per cwt.; *Prussiate*, 6¾d. to 7d. per lb.

Soda Salts.—*Bicarbonate*, £6 15s. per ton; *Borax*, £16 to £17 per ton; *Caustic Soda*, 76 per cent. to 77 per cent., £7 12s. 6d. per ton., 60 per cent., £5 18s. 9d.; *Crystals*, £3 per ton; *Nitrate* is somewhat steadier at 7s. 6d. to 7s. 9d. per cwt.

Manchester Chemical Report.

January 4, 1899.

In this district, notwithstanding a sensational paragraph which appeared in the evening papers a few days ago of a dark outlook in the chemical trade, Lancashire works are pretty fully employed and prices well maintained. Indeed, in some miscellaneous articles, which to a great extent affect pharmacists quite as much as dry-salters, there have been some advances. Bleaching Powder is fairly firm at £4 10s. per ton, softwood casks, prompt delivery, and for next year £4 2s. 6d. to £4 5s. White Caustic Soda is unchanged, and Ammonia Alkali, 58 per cent., is firm at £4 2s. 6d. for prompt delivery, on rails, bags. Glauber Salts have advanced to 35s. per ton, bags, on rails, and Epsoms 55s. Aniline Oil is firmer at 5d., and oil 4½d. Brown Acetate is steady at £5 7s. 6d. per ton, Welsh and American, Manchester. White Arsenic is dull and lower at £16 per ton, ex ship, Garston. Sulphate of Copper is the turn higher, and may be quoted £18 15s. to £19 per ton, best brands, delivered Manchester, and £19 10s. January-March delivery. All Ammonia Salts are firm, and Carbolic Acid is steady. Yellow Prussiate unchanged at 6¾d. to 7⅛d.

Partnerships Dissolved.

(From the London Gazette.)

Owen Roberts and Owen William Roberts, Physicians and Surgeons, 60, Cambridge Gardens, Ladbroke Grove, North Kensington.

George E. Cornett and Richard P. Cornett, Aërated Water Manufacturers, 12 and 14, Norton Street, Liverpool, so far as regards Richard P. Cornett.

John A. Lyceit and R. W. Cameron, Physicians, Surgeons, etc., Wolverhampton.

J. Hopkins Walters and John A. P. Price, Surgeons, Apothecaries, and Accoucheurs, Reading.

ITEMS OF INTEREST.

A New Method of Embalming.—H. Morau, Preparator to the Faculté de Médecine in Paris, gives the following formula for injecting fluid for the preservation of cadavera. Sufficient of a mixture of glycerin, 1 litre; potassium nitrate, 40 grammes; and potassium carbolate, 40 grammes, is injected into the aorta until the surface of the body becomes slightly tense. The body is then exposed in the open air.—*Pharm. Zeit.*, xliii., 601.

Soft Soap as an Insecticide.—A writer to the *Garden* advocates the use of a spray of soft-soap solution—1 ounce to 1 gallon of soft (rain) water—as an excellent insecticide for roses and other plants. Two applications are generally sufficient to rid the plants of aphis or mildew. The spraying should be done in the afternoon, when the sun rays are less intense, or during cloudy weather; it will not then injure the tenderest foliage.

A Poisonous Crucifer.—According to L. Planchon, the cruciferous plant *Diplotaxis erucoides*, which grows plentifully in vineyards in the South of France, is responsible for the death of considerable numbers of sheep annually. These animals will not eat the plant readily if other food is available, but failing this, they graze upon it and are poisoned. Autopsy shows all the indications of an irritant poison. Treating the animals with copious draughts of water has proved to be the most reliable remedy. When the herb is eaten mixed with other plants it does not produce any ill effects. Cows do not appear to suffer from eating the plant, rabbits and guinea-pigs do not willingly eat it, but are not susceptible to its toxic action.—*Journ. Pharm. Chim.* [6], vii.

Sulphuric Acid and Boiling Sulphates.—P. Carles calls attention to the fact that sulphuric acid may be added to water containing a considerable quantity of alkaline sulphate, when the solution is boiling, without occasioning any spurting or rise of temperature; even when tumultuous ebullition is going on, the addition of strong sulphuric acid has no effect, except to temporarily lessen the boiling. Possibly this is due to the fact that the acid sulphate thus formed, in redissolving, produces a marked lowering of the temperature.—*Bulletin de la Soc. de Pharm. de Bord.*, xxxviii., 443.

BELLADONNA PLASTERS.

Prosecution under the Sale of Foods and Drugs Act at the Lambeth Police Court, December 22nd, for selling Belladonna Plasters deficient in strength.

In many of the published reports of the above case the name of the manufacturers was not given. The closing remarks of the magistrate are also likely to be misleading as applying to all plasters of American manufacture.

THE PLASTERS COMPLAINED OF WERE NOT "SEABURY & JOHNSON'S."

The Name of SEABURY & JOHNSON on any Plaster stands for a guarantee of full pharmacopœial strength, and the highest standard of excellence of manufacture and uniformity. Independent analyses and published reports in England and America fully bear out these claims AND PROVE THE CONTRARY OF OTHERS.

SEABURY & JOHNSON, 31 & 32, Snow Hill, LONDON, E.C.

Calendar for the Week.

Sunday, January 8. 1st after Epiphany. Sun rises 8.7 ; sets 4.8.

Monday, January 9. Sun rises 8.6 ; sets 4.9.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Town Hall, Dewsbury, at 8.30 p.m.—The Chemists' Defence Fund, Camwal, the Federation of Local Associations, and several other pharmaceutical items will be discussed.

PHARMACEUTICAL SOCIETY OF IRELAND, 67, Lower Mount Street, Dublin.—Evening Meeting, when Dr. J. A. Walsh will read a paper on "Some Dispensing Difficulties."

Tuesday, January 10. Sun rises 8.6 ; sets 4.11.

Wednesday, January 11. ● 10.50 A. Sun rises 8.5 ; sets 4.12.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 p.m.—Open meeting, when Mr. J. Rutherford Hill will deal with "Notes and Queries."

MANCHESTER PHARMACEUTICAL ASSOCIATION.—Chemical Club, Victoria Hotel.—"Advanced Practical Work for Pharmacists" is the title of a paper to be read by Dr. Francis J. H. Coutts.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION. Election of Secretary in place of Mr. G. F. Merson, resigned.—Mr. F. Gilderdale will make a communication regarding "The Relative Values of first and second Biennial Henbane Leaves."

PHARMACEUTICAL SOCIETY, 17, Bloomsbury Square, London, W.C.—Meeting of Council, followed at 3 p.m., by a special general meeting to consider the question of poisons regulations.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY, 37, Surrey Street, at 8.30 p.m.—Essays will be read by the students on "The Best Methods of Education for Pharmaceutical Students," for which two prizes will be awarded.

Thursday, January 12. Sun rises 8.4 ; sets 4.13.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, London, W., at 9 p.m.—First meeting after the Christmas holidays.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION, 94, West Regent Street, at 9 p.m.—Messrs. W. L. Currie and D. Watson will bring forward the "Federation Proposals."

Friday, January 13. Sun rises 8.3 ; sets 4.14.

ABERDEEN JUNIOR CHEMISTS' ASSOCIATION, North Silver Street Hall, at 9.30 p.m.—Dr. A. T. G. Beveridge will lecture on "Alcohol."

Saturday, January 14. Sun rises 8.3 ; sets 4.16.

Advertisements.

(Received too late for Classification).

NORTH WALES.—Wanted, an assistant JUNIOR or SENIOR. Need not be qualified. Steady and of good business habits. Able to speak Welsh fluently. For a seaside town in North Wales. WALES, "Pharm. Journal" Office, 5, Serle St., London, W.C.

WANTED, Qualified ASSISTANT, capable of taking charge with good experience, for a brisk mixed business. Out door. No Sunday duty. Applicants will oblige by stating full particulars and enclosing photo to ANSELM, care of Evans, Sons & Co., Liverpool. JUNIOR also required.

TO LET, in the High Road, Leytonstone, a recently erected SHOP, well placed between a fancy draper's and milliner. Chemist and druggist wanted. No one in this business for a quarter mile either way. Apply J. A. & W. THARP, 9, Norton Folgate, Bishopsgate St, E.

ENGAGEMENT Wanted. Locum or Temporary. Qualified. 28. Highest references. S, 40, Cleveland Rd., Brighton.

ENGAGEMENT Wanted. Qualified. Tall. Good experience. South of England or Switzerland, or in first-class hospital preferred. ORTHOFORM, "Pharm. Journal" Office, 5, Serle St., W.C.

ENGAGEMENT Wanted. Part-time. Major student. 23. Good experience. E. D., 128, Kennington Park Rd., S.E.

EXCHANGE.

Prepaid Notices not exceeding thirty words are inserted at a fee of Sixpence, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, count as one word. The fee for use of Serle Street address is Sixpence. All communications should reach "PHARMACEUTICAL JOURNAL" Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 10 a.m. on Thursdays.

OFFERED.

Magic Lanterns, second-hand ; triples and biunials : oxyhydroge n microscope ; marvellous pamphengos oil ; lantern gives 14-ft. picture ; 60,000 slides and effects ; 4-in. 4-wick lanterns, 18s. 6d. each, bargains ; illustrated list post free, 2d. Animated photographs : A splendid machine for £9 9s. —Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Robert H. Clark's Specialties.—Lantern, with 4-in. condensers and 3 wick lamps, 17s. 6d. ; with 4 wick lamps, 18s. 6d. Slides, sale or hire, Conquest of Soudan, Spanish American War. Catalogue free.—Robt. H. Clark, Royston, Herts.

No. 2 Willcox's Gun-metal Pump, good as new, only used short time for water, 25s.—Moss, Chemist, 34, Avondale Road, Chorley.

Jeyes' Dips.—Having a surplus stock, clean, I will dispose at 15 per cent. below invoice prices and pay carriage. Write for particulars—Paterson, 133, Govan Road, Glasgow.

For Disposal.—Best cash offers, 100-oz. original tin Howards' quinine.—Endle, Chemist, Boscombe.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell 9, Derwent Grove, East Dulwich, London, S.E.

Chemist and Druggist Diary, 1899. Lowest price to—W. J. M., 75, Elsley Road, Lavender Hill, S.W.

Lucas's 'Pharmacy,' Newth's 'Inorganic Chemistry' (advanced), Muter's 'Practical Chemistry,' Green's 'Botany,' vol. i., Professor F. Darwen's 'Botany.' —Crook, Mirfield, Yorks.

Latest Editions of Green, vol. ii., Southall's 'Materia Medica,' Everett's 'Physics,' Perkin and Kipping's 'Organic Chemistry,' vol. ii.—State prices to "H," 10, Hillfield Road, West Hanpstead.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Alcock, Allison, Barnett, Bellamy, Browne, Cocking, Cruickshank, Ferrall, Frame, Francis, Grace, Howlett, Hill, Hobson, Hughes, Johnson, Lee, Mackie, Manning, Matthews, Moore, Singleton, Smith, Summers, Taylor, Tew, Thomas, Wheeler, Whitcley, Willmott, Young.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

STUDENTS OF PAST SESSIONS are requested to remember this column in their spare moments. It is always open to receive literary contributions, however small they may be. As topics of interest the following are worthy of note: Short reminiscences of former sessions, whether by way of anecdote to amuse, or experience to instruct; personal items of general interest, such as successes, change of address or occupation; practical notes on galenical or other preparations too short to constitute a paper.

THE OBJECT OF DEVOTING A COLUMN, more or less, to such matter is not, perhaps needless to say, to fill so much valuable space in the *Pharmaceutical Journal*. There are many ways in which mutual benefit may be derived by interchange of ideas, notes and experience between men of many sessions. As a case in point, a few weeks ago a student of ten years past made a special journey to town in order to find out what text-books are now in vogue, dealing with the pharmaceutical subjects which are most useful to him in business. On the other hand, a student actually studying in the School may often come to an arrangement with a qualified man in the country, whereby he receives a constant supply of fresh botanical specimens in return for some up-to-date information concerning the sciences allied to pharmacy. It is not intended to illustrate all the advantages which may follow a wise use of the present opportunity, so one other instance will suffice. Just before Christmas a young and enterprising French pharmacist was put in communication with a contributor to this column with a view to establish a constant correspondence on matters relating to pharmacy, each to write in the language of the other. The exchange of ideas has already commenced, and valuable training has been received on both sides by writing in a foreign language. It is hoped that others may follow a similar plan. From time to time brief accounts of French pharmacy and of Monsieur le Pharmacien may be expected to appear in this column, as information has already been promised by the French gentleman in question.

THOSE WHO TAKE A MELANCHOLY VIEW of the future of pharmacy, if they believe in the old maxim "*similia similibus curantur*," cannot do better than practise their art for a few years on the other side of the Channel. If there be any virtue in that system of Hahnemann they may be assured that in France the circumstances are particularly favourable. In other words, the grumbler has more to grumble about in France than in England. There are few assistants in this country whose sole opportunity of taking fresh air is Sunday afternoon. Yet that is not an uncommon experience among assistant pharmacists in France. The fact is few recognise that the bed a man occupies is, as a rule, of his own making. But more of this anon.

MEDICAL JOTTINGS.

MR. T. T. BUCKNILL, M.P. for the Epsom division of Surrey, who has just been appointed a judge in succession to Sir Henry Hawkins, is the second son of the late Sir J. C. Bucknill, M.D., F.R.S., who was one of the greatest authorities of his day on mental diseases and the care of the insane.

ERYTHROL TETRANITRATE.—An M.D. writes to the *British Medical Journal* that some manufacturing chemists reeently sent him by post a specimen labelled "Erythrol tetranitrate," a white powder in a small glass bottle, and as there were no directions or dose printed on the bottle, he determined not to keep the specimen, and accordingly he ("perhaps carelessly," he adds) put it in the waste-paper basket. The result was that next morning an explosion occurred, and the cook was partially stunned, besides receiving about two dozen small wounds on the hands, arms, and face, three or four of them containing glass. The housemaid had emptied the waste-paper basket into the dustpan containing hot ashes. The moral the doctor draws is that such an explosive compound as erythrol tetranitrate should not be sent out without special precautions. Imagine, he says, the result of a fire or other accident at a post office wherc a batch of these specimens had been posted.

NORFOLK AND NORWICH HOSPITAL.—Mr. William Cadge, the well-known Norwich surgeon, has just given £10,000 to the endowment fund of the Norfolk and Norwich Hospital. This with previous donations totals £20,000 given by this gentleman to the same institution during recent years. Mr. Cadge has probably operated in cases of stone more often than any other living surgeon.

SIR WILLIAM GULL AND QUACKERY.—The following amusing anecdote has, according to the London correspondent of the *Manchester Guardian*, just been told of a well-known physician, formerly attached to Guy's Hospital, and concerning the late Sir William Gull. The scene was a dinner party, at which several distinguished medical men were present. The conversation happened to turn upon the subject of quackery, and Sir William expressed his conviction that some of it was essential to success in practice, adding that "It is an example of the old saying—*Populus vult decipi*." "Quite so," said the host. "Now can anyone present give an English equivalent to that?" "Nothing easier," drily remarked the physician first referred to, "The public like to be gulled."

THE PROFESSOR AND HIS STUDENTS.—Dr. Yeaman, of Edinburgh, gave his students some seasonable counsel before the Christmas vacation. His province is to demonstrate on osteology, but in taking leave of his class he solemnly advised his hearers to "lay aside their *bones* during the vacation, and concentrate all their care and attention on the cardiac region and alimentary tract."

FRENCH NEWS.

[*From our Paris Correspondent.*]

MONSIEUR BERTHELOT, THE EMINENT CHEMIST and ex-Minister of Foreign Affiairs, made a pleasant and hopeful new year's prayer, but he made it in print, and thereby again upset the public mind at last made up (at least for the moment), on the question "is 1899 or 1900 the last year of this century?" Monsieur Berthelot said "Here are the prayers of an old man for the last year of the nineteenth century." Immediately the hydra-headed debate lifts its head again, the proposition on which everybody has quarrelled since the prehistoric period. Monsieur Berthelot is a scientist, the scientific mind is usually supposed to be precise and mathematical. What are we going to do? For unfortunately the question had been the other way—that 1900 completed the century.

BUT THE WORST TROUBLE OF ALL, according to the authorities of the Exposition of 1900, is that they are once more uncertain as to whether the great event they are preparing will close the old century or begin the new one. Perhaps, however, the Exposition may be said to do both; or the distinction is equally great in either case. As for the wrangle between Monsieur Berthelot and the Paris press, dating from his unfortunate sentence, let us, for the peace of our minds, ignore it.

THE EXPECTED QUARREL HAS ARISEN over the head of Vacher, the shepherdess-killer, or French Jack the Ripper, recently guillotined. After the execution the head was sent to the hospital for scientific examination, and now a number of high medical authorities claim it as the natural "perquisite" of their positions. The contest has raged so high that finally the justice of Solomon proved the only way of satisfying everybody. The head was literally split up and divided among the claimants, one of whom, by the way, was the famous Italian criminologist, Lombroso. Each of them got a little piece anyway, and one or two fortunates got a big piece. Microscopical study is the object they have in view.

TYPHOID FEVER EPIDEMIC.—For nearly two months a severe epidemic of typhoid fever has been raging at Cherbourg, mainly among the marine troops stationed there. At the present moment there are no less than 300 cases of the disease in the Marine Hospital, and a large number of deaths have occurred. The origin of the disease has, nevertheless, been ascertained, for the pest seems to ravage particularly those garrisons in which the water of the Divette is used, while the garrisons which have used other water have practically enjoyed immunity from it. The water from the Divette is no longer used, naturally, since it has been found to be fearfully impure, in spite of the filtering process

it has undergone by order of the city. This impurity is supposed to be due to the fact that the recent abundant rains have drawn into the river the drainings of the materials used to fertilise the land along the banks. By order of Monsieur Lockroy, Minister of Marine, every possible precaution has been taken to prevent the disease spreading; but its hold on the unfortunate garrisons is still fierce. Only sterilised water is being used in them at present, and even the food undergoes a thorough examination before reaching the table.

TYPHOID FEVER HAS NOW BROKEN OUT at Brest also, in the École de Médecine ten of the fifty students have been attacked by the disease, and two of them have died. The fever is spreading rapidly, although the medical authorities have taken every means in their power to suppress it. The patients have been removed to the Marine Hospital, and the origin of the trouble in this case also is supposed to be due to imperfect sewerage.

STABBING AFFRAY.—On Sunday night, two medical students, Monsieur François Daudy, 24 years old, and M. Addallah Chensedtin, an Ottoman subject, quarrelled in the Rue des Écoles about a woman, to whose affections each protested he had the prior right. Being somewhat worsted in this wordy war, Monsieur Daudy, in a paroxysm of fury, drew his knife from his pocket and, quickly opening it, plunged it several times in the chest and face of his fellow-student, who soon fell, wallowing in a pool of blood. His injuries being of such a grave nature, he was at once removed on an ambulance to the Cochin Hospital, where it is not expected that he will recover. The irascible Daudy attempted escape, but was soon arrested and brought before M. Berthelot, Commissaire of the Police of the Sorbonne. He awaits a trial.

PASTEUR INSTITUTE FOR BORDEAUX.—Consequent upon the incessant demands of Dr. Dupeux, aided by the journal *La France*, for a Pasteur Institute at Bordeaux, the Municipal Council are beginning to awaken to a conviction of the necessity for such, and show signs of at last entertaining the idea of erecting an institute similar to that at Paris, embodying a complete service of vaccination and sérumthérapio of diptheria and divers serums at present under study, that of hydrophobia included. Such an institute, the doctor points out, should receive subventions from the State, the Department, and the City, and, so far as its utility in cases of hydrophobia alone is concerned, the City would annually be saved thousands of francs which it now expends for transport and treatment of cases which are sent from there to Paris. "Moreover," adds the doctor, "since the success of the treatment depends in a great measure upon the promptitude with which that treatment is commenced, this important fact should have full weight in influencing the adoption of the scheme, the necessity for which has again and again been pointed out." Such towns as Lille, Montpellier, and Nancy, of far less importance than Bordeaux, already possess an institute; but the City fathers of Bordeaux seem to have hitherto considered the healthy state of the town coffers of greater importance than the health of those who contribute thereto. A mad dog in the midst of these wiscacres might possibly arouse them to action.

IRISH NEWS.

PHARMACEUTICAL SOCIETY OF IRELAND.—The following have passed the Preliminary Examination:—T. Kearney, J. McAdam, J. McMichael, E. Tanner, W. J. Balmer, J. J. Conway, R. A. Brown, A. Mayne, R. O. Smythe, P. Armstrong. Two candidates have been rejected.

DUBLIN CHEMISTS' FEDERATION.—The Committee meetings of this Association are being held regularly at 67, Lower Mount Street. New members are joining, and the Association is advancing in numbers and influence. The quarterly general meeting will be held in the Pharmaceutical Society's House on Wednesday next. the 18th inst., when a discussion on "Book-Keeping for Chemists" will take place and a number of important trade matters ventilated.

IRISH PHARMACISTS' ASSISTANTS' ASSOCIATION.—At Dublin on the 6th inst. the usual fortnightly meeting of this Association was held at 67, Lower Mount Street, the President, Mr. Henry Hunt, M.P.S.I., in the chair. There was a large attendance, amongst those present being Miss Ada Wyatt, M.P.S.I., Messrs. O'Sullivan, Turner, Preston, Yoxall, Williams, Smith, L.D.S., Thompson, L.D.S., Ardill, Taylor, Savage, Jessop, Jones, etc. The minutes of the last meeting having been read and some routine business disposed of, the President called on Dr. George F. Foy, M.D., F.R.C.S.I., to deliver a lecture on "Anæsthetics." The lecture occupied over an hour in its delivery, and was profusely illustrated by original manuscripts, cartoons, and old-time engravings, which were exhibited at various stages of the subject. Mr. Thompson, L.D.S., L.R.C.S.I., in proposing a vote of thanks to Dr. Foy, spoke at some length on the value of the lecture to dentists as well as pharmacists. Dr. Foy's lecture had swept away many hitherto believed-in matters from his mind, and opened up a new field of thought in the direction of modern anæsthesia. He referred to the celebrities introduced by the lecturer, and dealing with nitrous oxide, said it was a remarkable fact that of the fatalities attending the use of chloroform the greater number occurred in the dentists' chair. He hoped in the happy future that all dentists would become doctors. Mr. O'Sullivan seconded the resolution and spoke of Dr. Foy's high standing in the world of medical science, and of the vast service to humanity that gentleman's famous oxygen cylinders had proved. He referred to a case in which to his own knowledge a valuable life had been saved by inhalation of oxygen. He hoped the lecture would be fully reported in the trade Press. Other members having supported the resolution and bore testimony to Dr. Foy's many qualities of head and heart, the motion was carried by acclamation.

BREACH OF WARRANTY.—In connection with an action by Messrs. Paul and Vincent, Dublin, against a customer named Vaughan to recover the price of thistle pure linseed cake sold and delivered, and who in turn counter claimed £100 damages for breach of warranty as regarded the purity and oil of the article sold, the defendant has consented to judgment in plaintiffs' favour, has paid the debt and costs in full, and withdrawn and abandoned the counter claim.

THE DEATH HAS OCCURRED at Port Elizabeth, South Africa, where he went for the benefit of his health, of Mr. Robert William Priestley, late of the Medical Hall, Nassau Street, Dublin, aged 35 years.

A RISE IN SALARY was granted at a meeting last week of the Castlereagh Dispensary on an application being received from Mr. G. L. Kirkpatrick, L.P.S.I., apothecary to the Union, requesting an increase. It was decided to advance his remuneration from £80 to £100 per annum.

A SOCIAL SEND-OFF.—At Newry, on Monday evening, Mr. W. Meeke, of Messrs. S. Connor and Son's pharmacy, was entertained to dinner in Sheridan's Hotel by a number of his pharmaceutical and other friends on the occasion of his departure from the town to take up his medical studies in Belfast. After dinner a programme of music was gone through, in which the following took part: The Chairman, Mr. J. Edgar Connor, M.P.S.I., W. J. Savage, L.P.S.I., O. Kettle, P. J. O'Brien, J. Latimer, F. Ferris, J. Morrison, F. Alderdice, J. Murphy, C. Garland, W. Scott, J. Todd, etc. Mr. Meeke having replied to the toast of his health, a most enjoyable evening was brought to a close by the singing of "Auld Lang Syne."

MR. W. J. BAXTER, M.C.P.S.I., Coleraine, has been nominated as a County Councillor for the county of Londonderry. Mr. Baxter is deservedly popular in Coleraine, and his friends confidently anticipate his return at the head of the poll.

SIR HENRY COCHRANE, D.L., J.P., of the drug and chemical firm of Thacker and Hoffe, wholesale chemists and druggists, Dublin, has registered his concern at Nassau Place as a limited liability company, with a share capital of £200,000, divided into equal portions of ordinary and preference shares of £1 each. It is not, however, the present intention of the vendor to make any public issue of the shares, the flotation being for family purposes.

Dr. Meredith R. Whitla, M.P.S.I., Monaghan, has been selected by the Independent Nationalists of the town as a member of the new Urban Council.

The Question of Starting a Galen Lodge of Freemasons in Dublin is being mooted in local pharmaceutical circles. There are in the city more than enough P.M.'s to carry out the project, and it is not improbable that the necessary charter will shortly be applied for to the Grand Lodge of Ireland.

ENGLISH NEWS.

Chemists' Ball.—The thirty-third annual Chemists' Ball will be held on Wednesday next, January 18, at the Portman Rooms, Baker Street, W., at 9 p.m. Mr. Dan Godfrey's quadrille band will provide music for the company, and as this is the last ball in the eighteen hundreds, it is expected there will be a large attendance. Application for tickets (lady's, 12s. 6d. ; gentleman's, 17s. 6d.) should be made without delay to Mr. W. Warren, 24, Russell Street, Covent Garden, W.C., the cost of ticket including refreshments, supper, and wine.

Chemists' Assistants' Association.—With reference to the announcement in last week's Journal that the first meeting of the C.A.A. after the Christmas holidays would be on Thursday, January 12, the President, Mr. F. W. Gamble, writes to say that this is not correct. The next half-session will commence on Thursday, January 26. The programme of papers, he states, is an exceptionally good one, and will probably be published next week.

Sheffield Pharmaceutical and Chemical Society.—The ordinary meeting of this Society, held at the Society's rooms in Surrey Street, on Wednesday, took the form of a "students' night," and was very pleasantly spent. There was a good attendance, principally of students, and the younger men engaged in the profession earnestly took up a suggestion that they should read papers on "The Best Method of Education for Pharmaceutical Students." They were stimulated in this by the offer of two prizes for the best essays—a first prize, consisting of a copy of Attfield's "Chemistry" given by Mr. C. O. Morrison, and the second of a copy of Green's "Botany," given by Mr. J. F. Eardley. Five papers were read by Messrs. J. Cocking, W. Coulshed, J. Cox, R. Tildesley, and A. Yates, all of whom, in tohughtful essays, advocated systematic study of the subjects recommended by the Pharmaceutical Society, and the thorough mastering of one subject at a time. The papers were followed by a brief discussion, in which Mr. G. Squires, the President (who occupied the chair) and Mr. J. B. Paten, the Hon. Sec., took part. The prizes will be awarded in due course ——Chemists' Ball.—The annual chemists' ball conducted under the auspices of the Sheffield Society, will be held in the Masonic Hall, Sheffield, on Thursday, February 9, 1899. As it will be necessary to limit the number of tickets sold, it is suggested that early application should be made for the same. Tickets (single, 7s. 6d. ; double, 12s. 6d., including cost of supper) may be obtained from the Hon. Secretary, Mr. J. B. Pater, Broomhill, Sheffield.

Mr. Alderman Benjamin Robinson, J.P., Pendleton, has been appointed a member of the Justices' Visiting Committee to Her Majesty's prison, Strangeways, Manchester.

Royal Institution.—In the latter half of the Christmas course of lectures by Sir Robert Stawell Ball, D.Sc., LL.D., F.R.S., the great planets, shooting stars, and new methods, were successively dealt with. These fascinating topics were made exceptionally pleasing by the dry humour and eloquent language of this distinguished astronomer; indeed, what was recently said in *Nature* about some of Professor Darwin's work may well be said of these lectures, that when an eminent mathematician treats a subject so simply that the unmathematical mind can grasp his meaning the result is certain to be interesting. Jupiter and Saturn were the great planets under consideration; photographs were shown illustrating the great clouds on the former and the remarkable ring surrounding the latter. The skill of the mathematician was shown in the fact that the nature of this wonderful ring—which fits Saturn just as a ring of a water bath may be fitted round an orange—was a mystery until the late Clark Maxwell worked out the problem on paper, and proved the ring to be in reality a vast system of other bodies, a myriad host of little moons. Perhaps the lecture on shooting stars gave the greatest pleasure to the juvenile portion of the audience. Meteors great and small were depicted on the screen, splendid fire-balls and long-tailed comets. An explanation was given of the harmlessness of the tempest of meteors to mankind, in that the speed at which they travel is so great that they are burnt up *en route* by the heat engendered during their terrific flight. This connection between heat and motion was only one of the many scientific facts of far-reaching importance brought out during the course of lectures. Sir Robert went on to describe the magnificent display of leonids in November, 1866, and warned his hearers to watch for its repetition about November 15 in the present year. The orbit of these leonids is much greater than that of the earth, so that the dwellers on this globe have an opportunity of witnessing this spectacle only once in every thirty-three years. In the last lecture some photographs were shown of the Milky Way, the Rainbow, the great nebula in Orion, and the stars in the Pleiades. The distances of some of the stars are beyond comprehension, *e.g.*, a message sent to some of the most distant stars, if dispatched in the year one of the present era at such a rate that it would compass this globe seven times in a single second, would not yet have reached its destination. Bearing this in mind, it is not to be wondered at that these bodies are far larger than our sun; one of them, recently discovered, is considered to be forty times as heavy as the sun.

The Business of the late Mr. J. Bennett, 35, Clarence Road, Bristol, has been transferred to Mr. T. Blanchard.

A Dispenser's Mistake.—The Lancashire County Coroner, Mr. J. F. Pricc, conducted the adjourned inquiry on Monday, January 9, at the Hope Inn, Heaton Norris, into the death of Patience Broderick, a married woman, who died under singular conditions on December 31, at Heaton Norris. As mentioned in last week's Journal (p. 12*b*), the first inquest was adjourned for a post-mortem examination to be held, owing to the statement that a dispenser named Cheadle had made an error in making up a prescription, consisting of morphine and other ingredients. The first witness called was Frederic Hibbert Westmacott, F.R.C.S., practising at 8, St. John Street, Manchester, who said he made a post-mortem examination of the body of the deceased on Thursday, the 5th inst., and the appearances were quite consistent with the opinion that death was due to morphine poisoning. There was no other assignable cause to be found.—Walter Cheadle, the dispenser, was then called. The Coroner cautioned him that all he might say would be written down, and might be used, if necessary, as evidence against him hereafter. Cheadle replied that he wished to make a statement. He said he was a medical student, residing at 12, Heaton Road, Heaton Norris. He had been dispensing medicines on and off for twelve years, and for three years and three months had been in the service of Dr. Greenhalgh, of Heaton Norris. On Saturday, December 31, between 10.30 and 11 o'clock in the morning, Dr. Greenhalgh handed him the slip of paper produced after having seen several of the patients. At the same time Dr. Greenhalgh gave him verbal instruction to make up for Mrs. Broderick a 4-oz. linctus of morphia. At the moment the doctor changed the instructions, telling him to make it into 8 ozs. instead of 4. The signs for a drachm and a half and 8 drops were in when Dr. Greenhalgh gave the prescription. Witness was rather confused in his mind whether it was to be 4 ozs. or 8 ozs. He was not quite sure from the prescription, after the verbal alteration, of the dose which was to be taken. There was a faint mark on the prescription, meaning two tablespoonfuls. He understood the "drachm and a half" in the prescription to mean morphia. He did not recollect that the doctor had told him the drachm was to be liquor morphiæ. From the preseription he did not know perfectly what amount of morphia was to be put into the medicine, neither did the word "linctus" or "drachm and a half" give him any assistance. He worked out the prescription as well as his depressed mind and the condition he was then in allowed. He weighed out 50 grains of morphia in dispensing the medicine, and half an ounce of gum acacia. He then added 8 drops of prussic acid syrup, and mixed them up in the mortar. With added water it made 8 ozs. The medicine was put into a bottle and the deceased's name was written on outside the wrapper. He calculated

the 50 grains of morphia by having always dispensed teaspoon doses before. There would have been three-quarters of a grain in each dose of a teaspoonful. It did not occur to him to calculate what amount of morphia there would be in two tablespoonfuls until the doctor spoke to him about the medicine about six o'clock in the evening. When the doctor spoke to him he (Cheadle) found out that he had make a mistake about the two-tablespoon dose. Reverting again to the "drachm and a half" in the prescription, Cheadle said he did not know what it meant. He disregarded the sign for a drachm and a half in the prescription altogether, and made the medicine upon his own calculation. In making up morphia he had never before put 50 grains in any medicine or preparation, nor had he seen a prescription specifying that quantity.—Asked what he had to say further, Cheadle said he was very sorry for what had occurred. He was almost broken-hearted. When he made out the prescription he was suffering severely from neuralgia, and was not fit for work. He could have made out the prescription had he been in an ordinary state of health. In reply to a question, he said that every prescription that he had ever made up which contained morphia had been in a bottle not larger than one or two ounces, and the doses had always been a teaspoonful. He took it that the powder morphia was to be used, because the word liquor was not on the prescription. A drachm and a half of linctus morphia would mean 90 grains. There would be sixty-four teaspoon doses in an 8-oz. bottle, and therefore 50 grains which he put in would yield about three-quarters of a grain per dose. This was not an excessive dose. He had no recollection of ever using liquor morphiæ. He had been very ill during the last week, and had had domestic troubles at home. On the day in question, and on the day before, he was not in a fit state to be at work. He had always before put a two-tablespoon label on an 8-oz. bottle.—The Coroner commented on the slipshod way in which the prescription had been made out. Still, that did not excuse Cheadle, who admittedly had made a mistake. If he did not understand the prescription, he should have consulted the doctor instead of attempting to make the preparation up upon his own calculation. On the face of it he was guilty of negligence.—At the end of three-quarters of an hour the jury returned with their verdict, which was "Death from misadventure."—The Coroner, addressing Mr. Cheadle, said the jury had taken a most merciful view of the case under the circumstances. At the same time Mr. Cheadle was very censurable for his carelessness in making up the prescription. If he did not understand it he should not have interfered with it. In addition to that the jury had also requested him (the Coroner) to say that the doctor's prescription was not written out as it should be. Under those circumstances the weight was somewhat taken off Mr. Cheadle's shoulders; otherwise he might have been committed for manslaughter. He was very censurable for the mistake, and the doctor also for giving the prescription in such an incomplete way.

AN UNWELCOME VISITOR.—On Wednesday last a bull on its way to the auction mart took a fancy to pay a visit to the newly-refitted pharmacy of Mr. G. R. Hankinson, High Street, Uttoxeter. Presumably he was aware that the preparation of veterinary medicines is an important department in that gentleman's establishment, and thought a drink would do him good. He got well inside, but, changing his mind, started to investigate the fixtures. The attention he paid to a lighted gas stove was so close that it was unable to withstand him, and promptly subsided into a large glass case. Sweeping several bottles of perfume and sundry other articles off of the counters, the animal made his way outside. Amongst other places visited by him the same morning were two public-houses and a bank, where he obtained a check.

C.A.A. CINDERELLAS.—A Cinderella, the third of the season, was held in the Dorset Hall, Portman Rooms, on Wednesday, 4th inst., and was of a very enjoyable character. The attendance was very good, there being about 120 present, with a slight preponderance of ladies. Indisposition on the part of Mr. A. H. Solomon kept that gentleman away, the accustomed duties of M.C. thus falling upon Mr. C. W. Martin alone.

THE ANNUAL BRIGHTON PHARMACY BALL.—This event will take place at the Royal Pavilion, on Friday, January 20, under the auspices of Mr. W. H. Gibson, F.C.S., President of the Senior Association. The tickets (gentlemen, 7s.; ladies, 6s.; double, 12s. 6d.) will include supper and light refreshments, and may be obtained from members of the committee, or from the Hon. Secs., W. H. Andrews, 90, Western Road, and G. B. Savage, 109, St. James' Street.

SHOCKING DEATH OF A CHEMIST.—On Saturday last (Jan. 7) a shocking fatality occurred at Padiham, Lancashire. It appears that early in the morning a fire broke out in the living portion of the shop occupied by Mr. John Cunliffe, chemist, 10, Mill Street, Padiham, and burned with great fierceness in his bedroom. Apparently the escape of Cunliffe, on awakening to his danger, was cut off both by the door and window, and he perished, his charred and unrecognisable remains being subsequently found. Mr. Cunliffe was a clever young man of 27, and had been in business four and a-half years, previously having a position under Messrs. Clay and Abraham, Liverpool. Two other occupants of the shop were rescued, and the deceased man leaves a widow Mr. Cunliffe was buried on Wednesday, and at an inquest on his body a verdict of "Accidental death" was returned.

FOOD AND DRUGS ACT PROSECUTIONS.—At the Derby Police Court, on Tuesday, January 10, W. W. Harvey, chemist, Ford Street, was summoned for selling 1 oz. of Gregory's powder which was not of the substance and nature demanded.—The Town Clerk, who prosecuted, said the drug was not composed of the usual constituents, as stated in the British Pharmacopœia. It consisted of magnesium carbonate, 67 parts; rhubarb, 22 parts; and ginger, 11 parts. The magnesium carbonate should have been magnesium oxide.—Mr. Moore appeared for the defendant, and stated that the powder had been made two years. When the inspector's assistant asked for it he was told that it was not up to the standard for testing, but that if wanted for medicinal purposes it would answer as well.—The magistrates said they were satisfied that defendant told the purchaser that the article was not up to the standard. That being the case, the purchaser took it on his own responsibility, and the case would be dismissed.—Mr. Edward Machon, chemist, Park Street, was summoned for a similar offence with respect to Gregory's powder.—For the defence it was stated that the powder was commonly made in this way, and that there were customers who would not have it made with the oxide.—Fined 2s. 6d. and 31s. 6d. costs.

SCOTTISH NEWS.

"THE OPEN-AIR CURE FOR CONSUMPTION" is the subject of an article in the January number of the *Nineteenth Century*, contributed by Mr. James Arthur Gibson, chemist and druggist, of Edinburgh. It is an account of a personal experience in the war now being waged against the disease. In his own words Mr. Gibson has been "a consumptive, affected with acute phthisis," and yet has been "perfectly cured" by the rational treatment as carried out by Dr. Otto Walther, at Nordrach, in the Baden Black Forest, Germany. He describes his own case, and then proceeds "to show how it is possible to save practically every consumptive person in this country if only public interest could be aroused and the necessary means employed to bring about a result so desirable from every point of view." Mr. Gibson broke down in health in the summer of 1895, being then twenty-eight years of age. He was examined by Drs. A. B. Mitchell and Whitla, of Belfast, who both told him that his case was very desperate and that he was suffering from acute phthisis. His weight was then 9 st. 7 lbs. He stopped work and went into the country to live and have a complete rest, and he remarks, "No one, myself least of all, ever expected to see me well again." After three months in Ireland, a friend advised him to go to Nordrach, in the Black Forest, which he did in October, 1895, his weight being then 9 st. 12 lbs. He "left Nordrach towards the end of January, 1896—in three and a half months—quite cured," having gained almost 3 st. in weight, and an increase in chest measurement of 6 inches. Since that time he has kept in "perfect health" and maintained a weight of from 12 st. 4 lbs. to 12 st. 7 lbs.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

George A. Woodfield, Photographer, 105, Week Street, Manchester.

Frank F. Blankley, Chemist and Druggist, Chatteris, Cambs.

T. E. Malins, Chemist, 107, Woodville Road, Cardiff.

MARKET REPORT.

London Report.

JANUARY 12.

After opening fairly briskly at commencement of the New Year, business appears to have somewhat quieted down, at which some disappointment has been expressed, the tone, however, remains good, and there appears a prospect that after the stock-taking is completed we may see a different state of affairs, and especially if the weather, which is at present most discouraging both to business as also to the enjoyment of life generally, becomes more propitious. The changes in price which have taken place during the past few days are practically *nil*. Quicksilver and Mercurials are firm with an upward tendency. Quinine remains somewhat uncertain both as to its position and prospects, although the general opinion still appears to be that we shall see the article dearer before very long. Cocaine and Sulphonal are steady. Glycerin quiet. Cod-liver Oil weak. Acid Citric is firm and slightly dearer, while, on the other hand, Acid Tartaric and Cream of Tartar remain very quiet. Iodides and Bromides are firm, as also is Cascara Sagrada. Sulphate of Ammonia again dearer. Codeia firm. Morphia the shade harder, while the same may also be said of Opium. Permanganate of Potash is recovering but slowly. Acid Carbolic is steady, and in good demand for export. The following are actual prices ruling for articles of chief interest:—

ACETANILIDE.—The combined makers still quote 11d. per lb. for 5-cwt. lots, price for smaller quantity being higher in proportion up te 1s. 2d. per lb.

ACID BORACIC—Is steady at 26s. and 28s. per cwt. for crystals and powder respectively.

ACID CARBOLIC—Continues in good inquiry, especially for export, and price is fully maintained. Makers' quotations are: 35-36° C., *ice crystal*, in 2½ cwt. drums and overcasks, 6⅝d. to 6⅞d. per lb.; 39-40° C., ditto, 7⅛d. to 7⅜d. per lb.; and 8⅛d. to 8½d. per lb. for the 39-40° C., B.P. quality in detached crystals, according to make, quantity, and packing. *Crude*: 60° F., 1s. 11d. per gallon; 75° F., 2s. 3d. per gallon. *Liquid*: 95-98 per cent. of pale straw colour, 1s. 2d. to 1s. 3d. per gollon, in 40-gallon casks.

ACID CITRIC.—Price remains nominally 1s. 1d. to 1s. 1¼d. per lb. for English, makers are, however, by no means ready sellers, especially for forward delivery.

ACID GALLIC—Is expected to be dearer in sympathy with the higher price of galls, combined with fact that the excessive competition between the makers has reduced price to a figure which can hardly leave a fair margin of profit. It is still possible to buy a really good article at 2s. to 2s. 3d. per lb., according to quantity, etc.

ACID OXALIC—Is quoted at unchanged prices—viz., 3d. to 3¼d. per lb., according to quantity, packing, etc., nett, delivered free in London.

ACID PYROGALLIC—May possibly go dearer for same reasons as stated with regard to *Acid Gallic*, makers' prices remain, however, unchanged for the present.

ACID TANNIC.—As stated with respect to Acid Gallic, the price of this article has been unduly depressed, in consequence of the keen competition between the various makers, this apart from the fact that the high price of Galls cannot fail to enhance the cost of Acid Tannic; it is, however, still possible to buy the *levissimum* B.P. quality, in 1 cwt. cases, at 1s. 9½d. per lb., still an extremely low price compared with that which formerly ruled for this article.

ACID TARTARIC—Is weak at 1s. 0¼d. to 1s. 0½d. per lb. for English on spot, and 12d. per lb. *c.i.f.* for foreign.

AMMONIA COMPOUNDS.—*Bromide* firm at 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to packing, quantity, etc. *Iodide*: 14s. 3d. per lb. *Muriate*: White, free from metals, 25s. to 27s. 6d. per cwt., and 30s. to 32s. 6d. for the chemically pure in small crystals. *Oxalate*: 5½d. per lb. *Sal ammoniac*: 33s. and 35s. per cwt. respectively for sublimed firsts and seconds, and 2s. per cwt. more for crushed for batteries, viz., 35s. per cwt. for seconds, and 37s. per cwt. for firsts. *Sulphate* very firm and again dearer; grey prompt, 24 per cent., London, £10 7s. 6d. per ton, Jan.-June, £10 5s.; Hull, prompt, and Jan.-June, £10 6s. 3d.; Leith, prompt, and Jan.-June, £10 7s. 6d. per ton; Beckton not offering; Beckton terms, £10 6s. 3d. per ton. *Sulphocyanide*: 1s. 1d. to 1s. 3d. per lb., according to quantity.

ANTIMONY.—*Regulus* is quoted £36 10s. to £37 per ton on spot, while *Crude Japan* (Black Oxide) is quoted £22 to £22 10s. per ton on spot, and about parity *c.i.f.* to arrive.

ATROPINE is very firm, good raw material remaining scarce and dear, makers quote 15s. 6d. per oz. for the *Sulphate B.P.*, and 17s. 10d. per oz. for the *Alkaloid*. There is none left in second hands, so that buyers are now obliged to pay full makers prices.

BLEACHING POWDER (CHLORIDE OF LIME)—Is steady, English make being quoted £6 per ton.

BISMUTH.—The salts are unchanged at 5s. 1d. per lb. for the *Subnitrate*, and 5s. 8d. per lb. for the *Carbonate*. The price of the metal is also unchanged at 5s. per lb. for the commercial and 7s. per lb. for the refined quality.

BORAX—Steady at 16s. 6d. per cwt. for crystals, and 17s. per cwt. for powders.

BROMIDES—Are firm at unchanged prices, makers' quotations being: *Potass. Bromid.*, 1s. 10½d. per lb.; *Soda Bromid.*, 2s. 1½d. per lb., and *Ammon. Bromide*, 2s. 2d. per lb.; *Bromine* is quoted 2s. 2d. per lb., in cases of 60 lbs., 5 case lots costing 1d. per lb. less.

CAMPHOR.—*Crude* is unchanged at nominally 95s. to 97s. 6d. per cwt. *c.i.f.* for *China*, and 105s. to 107s. 6d. per cwt. *c.i.f.* for *Japan*. For Refined *English* makers' prices are also unchanged at 1s. 5½d. per lb. for bells and flowers, and 1s. 6½d. for 4-oz., 8-oz., and 16-oz. tablets, smaller tablets being dearer in proportion. *German* makers still quote bells ½d. per lb. less than the above figure.

CASCARA SAGRADA.—Market is firm, there being, however, at the moment but little doing in the article. Good thin old bark is quoted 32s. 6d. to 35s., while good new bark is obtainable at 5s. per cwt. less money.

CASTOR OIL.—*Belgium* first pressing spot £25 to £26 per ton. February-March £24 10s., second pressing spot £24 10s. per ton ex-wharf Hull; manufactored 24s. to 25s. per cwt. in barrels, 2¾d. to 2⅞d. per lb. in cases *f.o.r.* or *f.o.b.* steamer, Hull, *London* pressed 24s. 6d. per cwt. in barrels. *French* 25s. per cwt. *Italian*, extra quality, 30s per cwt. *c.i.f.*

CLOVES.—Privately *Zanzibar* firm but quiet; small business done includes March-May delivery at 3⅝d., closing rather buyers thereat. At auction of 175 bales *Zansibar*, 75 bales sold without reserve at 3¼d. to 3⅜d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*, Commercial is quoted 1s. to 1s. 1d. per gallon; pure, 1s. 4d. to 1s. 6d. per lb. *Benzole* is dull at 9d. per gallon for both the 50 and 90 per cent. qualities. *Crude Naphtha* 30 per cent. at 120° C., 3d. per gallon. *Solvent Naphtha* 65 per cent. 160° C., 1s. 7d. per gallon; 90 per cent. at 160° C., 1s. 2d.; 90 per cent. at 190° C., 1s. 3d. per gallon. *Pitch* 24s. 6d. per ton *f.o.b.* *Tar*, refined, 12s. per barrel, 2d. per gallon; crude, 12s. per barrel, 2d. per gallon.

COCAINE.—Makers' prices remain firm and unchanged at 10s. 6d. to 10s. 9d. per oz. for the *Hydrochlorate* in 25 oz. tins, and 100 oz. lots, while from second hand it is possible to buy the best brands at the lower price named, and perhaps even at 10s. 3d. per oz. for a limited quantity; what is offering at cheaper rates than the above is said to be of doubtful quality or to consist of discredited brands which might prove dear at any price.

COCOA BUTTER.—After a decline in value which lasted some months, a sharp rise took place at the monthly auction on Tuesday, at which about 60 tons of Cadbury's were offered. Commencing at 1s. 1d. per lb., competition speedily forced the price up to 1s. 3d., the average price obtained being 1s. 2½d. per lb., against 1s. 1d. per lb. in December last, 1s. 1⅝d. per lb. in November, and 1s. 1¼d. per lb. in October; 5 cases of 3 oz. tablets sold comparatively cheaply at 1s. 3d. per lb.

CODEIA—Is in good demand at firm prices, makers still quoting 12s. 6d. per oz.

COD-LIVER OIL.—The market is weak, owing partly to the slack demand and partly to the pressure to sell on part of holders both here and on the other side, and it would be possible to buy best non-congealing 1898 oil, in tin-lined barrels, at 70s. to 75s. per barrel, according to brand.

CREAM OF TARTAR.—First white crystals are quoted 73s. per cwt. on the spot; powder, 75s. to 77s. per cwt.

DRAGON'S BLOOD.—The market is bare of *reeds*, for which there is a demand, last price paid having been £12 per cwt. No fine *lump* has so far come to hand in time for next public sale on 19th inst., while fair to good medium is represented by one or two cases only.

GINGER.—*Cochin* in moderate supply met no demand; 306 bags washed rough bought in at 34s. to 27s.; of 83 cases only 5 cases small native cut slightly wormy sold at 32s. Of *Jaimaica* 125 bags were offered and bought in at 76s. to 82s.

GLYCERIN.—The market for *crude* is quiet but fairly steady at £27 10s. to £29 10s. per ton for the saponified quality from candle makers, *distilled* ditto being quoted nominally £26 per ton, while the *crude* from soap lees is worth about £25 10s. per ton. *Refined* is quiet at about £52 10s. for *English* and £52 10s. to £62 10s. for *German*, according to brand, etc., for best white double distilled, chemically pure, 1260° quality in tins and cases, while for carboys the price is rather lower than for the same quality packed in cases.

HYPOPHOSPHITES.—Makers' prices are 3s. 6d. per lb. for the *Lime*, *Soda*, and *Potash* salts.

IODIDES—Continue in fair demand at 10s. 6d. per lb. for *Potass. Iodid*, 11s. 10d. per lb. for *Sodii Iodid.*, 14s. 3d. per lb. for *Ammon. Iodid.*, 13s. 10d. per lb. for *Iodoform cryst.*, *pulv.* and *precip.*, and 12s. per lb. for *Iodine re-sublimed*. *Crude Iodine* is unchanged at 7½d. per oz.

JUNIPER BERRIES—Are now being offered at 7s. to 7s. 6d. per cwt., *c.i.f.*, London.

LITHIA—Is firm at unchanged prices, makers quoting 10s. 8d. to 11s. per lb. for the *carbonate*, according to quantity, and 6s. 6d. to 7s. 3d. per lb. for the *citrate crystal* and *powder*.

MENTHOL.—The market remains firm at 7s. 9d. to 8s. per lb. on the spot, according to quantity and brand, the *c.i.f.* price to arrive being quoted above the parity of the spot priee.

MERCURIALS.—Makers' quote *Calomel* 2s. 9d. per lb.; *Hydrarg. Ammon*, 3s. 2d. per lb.; *Hydrarg. Oxid. Rubr.*, 3s. 1d. per lb.; and *Hydrarg. Perchlor.*, 2s. 5d. per lb.

MORPHIA—Is perhaps a shade firmer. Makers would, however, still book contracts for larger quantity at somewhat below 5s. per oz. for the *Hydrochlorate salt* in *powder*, the *crystal* salts costing 2d. per oz. more.

NITRATE OF SODA—Is quiet at £7 15s. per ton for commercial, and £8 to £8 5s. per ton for refined.

OILS (ESSENTIAL).—There is a better inquiry for several of these. *Star Aniseed*: Whilst steady at 6s. 2d. per lb. on the spot, is reported rather firmer on the other side. *Cassia* is firm at 4s. 6d. to 5s. 6d. per lb., according to quality on the spot, while for arrival quotations come rather higher. *Peppermint*: American kinds remain very dull, which has not failed to prove a drag on business in this oil generally. Japan, whilst very firm, is consequently somewhat slow of sale, quotations being 3s. 6d. per lb. for dementholised and 5s. per lb. for 40 per cent. on the spot; for arrival higher prices being asked. American H.G.H. dull at nominally 5s. 6d. per lb. Wayne County 3s. to 3s. 9d. per lb., according to quality. *Lemongrass*: Very slow of sale at nominally unchanged prices. *Citronella* is quoted 1s. 1d. per lb. on spot in tins.

OILS (FIXED) AND SPIRITS.—*Linseed* continues firm, spot pipes London, £17; barrels, £17 7s. 6d.; Feb.-April, £17 7s. 6d.; May-Aug., £17 5s.; Sept.-Dec., £17 5s. per ton. Hull spot naked, £16; Feb.-April, £16; May-Aug., £16 per ton. *Rape* quiet. Ordinary brown spot and Feb.-April, £20 15s. Refined spot, £22 5s. per ton. Ravison naked spot and Feb.-April, £16 17s. 6d. *Cotton* very firm at an advance of about 15s. to 20s. per ton on prices quoted last week. London crude spot £13 10s., Feb.-April £13 15s., May-Aug. £14 per ton. Refined spot £15 to £15 15s. per ton, according to make. Hull naked refined spot £13, Feb.-April £13 2s. 6d., May-Aug. £13 15s. Crude spot February-April £12, May-August £12 10s. per ton. *Olive*: Spanish £29, Levant and Mogador £29 to £32 per ton. *Coconut* steady; Ceylon, £25 10s., spot; February-March, £23 15s. per ton, *c.i.f.* *Cochin*: Nominally, £30 10s. per ton spot; to arrive December shipment, £27 5s.; January, £26 2s. 6d. to £26 5s. per ton, *c.i.f.* *Palm*: Lagos, spot, £22 10s. per ton. *Lubricating Oil*: Pale American spot, 5s. 6d. to 7s. per gallon; black, 4s. 9d. to 5s. 6d.; Russian black, 4s. 9d. to 5s.; pale, 7s. to 8s. per gallon. *Turpentine*, after being rather easier, closes somewhat steadier: American spot, 32s. 1½d. per cwt. February-April, 32s. 4½d.; May-June, 30s. 3d.; July-December, 24s. 9d. per cwt. *Petroleum*: Russian spot, 5⅜d. to 5¾d. per gallon; American spot, 6¼d. to 6⅜d.; water white, 7⅝d. per gallon. *Petroleum Spirit*: American, 8d. per gallon; deodorised, 8½d. per gallon.

OPIUM.—The market, which had gone rather weaker, partly in consequence of the favourable prospects for the late autumn sowings, and partly in consequence of pressure to realise on part of weak holders, has again slightly hardened. Present quotations are as follow, without, however, very much business actually passing:—*Fine Druggists'*, 11s. to 11s. 9d. per lb.; good seconds and manufacturing kinds, 10s. 3d. to 10s. 9d. per lb. Good to fine *soft shipping* kinds, 12s. 6d. to 13s. 6d. per lb.; seconds, 10s. 6d. to 11s. 9d. per lb. *Persian* is quiet at 10s. 9d. to 11s. 9d. per lb., according to quality.

ORRIS ROOT.—Present quotations from Italy are: *Florentine*, white selected, 32s. 6d. to 35s. per cwt., *c.i.f.*; sorts, 29s. 6d. to 31s. *Verona* selected, 21s. to 22s. 6d.; sorts, 18s. 6d. to 19s. per cwt., *c.i.f.*

PARAFFIN WAX.—*Crude*: 1¾d. to 1⅞d. per lb.; *refined*, 2d. to 3¼d. per lb.

PHENACETIN—Is quiet and somewhat weak in consequence of pressure to sell almost *à tout prix* on part of holders of inferior and discredited makes. A good and reliable article, either *cryst.* or *powder*, can now be bought at 3s. 6d. to 4s. per lb., according to quantity and packing. *Bayer's* make is still quoted 5s. 6d. per lb., and *Riedel's* 1d. per lb. less, put up in 1 lb. original bottles.

POTASH COMPOUNDS.—*Bicarbonate* is quoted 30s. to 35s. per cwt., according to quantity and make, for both crystals and powder. *Bichromate*: 3½d. per lb. *Bromide*: Firm at 1s. 10½d. per lb. *Chlorate*: 3¾d. per lb. for crystals and ¼d. per lb. more for powder, for spot delivery. *Iodide* steady at 10s. 6d. per lb. *Oxalate*: Neutral, 5½d. to 5¾d. per lb. *Permangonate* steadier at 50s. per cwt. for small crystals and 55s. per cwt. for large crystals in 1-cwt. kegs and for ton lots. *Prussiate*: Yellow English is still quoted 7d. per lb. and the red 1s. 1d. to 1s. 2d. per lb., according to quantity and packing.

POTASH PERMANGANATE—Is somewhat steadier at 72s. 6d. per cwt. for small crystals, and 77s. 6d. per cwt. for large crystals in 1 cwt. kegs.

QUICKSILVER.—Importer's price is now £8 per bottle, while the second-hand offers at 6d. per bottle less. It is rumoured that a further advance in price is not improbable.

QUININE.—Market has been very quiet during the past week with practically nothing doing in the article. German makers still quote 10½d. per oz. for the best brands of *Sulphate*, for 1000 oz. lots in 100 oz. tins, while from second hand it has been possible to buy a few lots of 1000 oz. at ¼d. per oz. below makers' price. Appearances still point to the prospect of an advance in value of this article.

ROSIN—Is quiet and without change at 4s. 4½d. per cwt. ex-wharf, for spot delivery.

SENNA.—The demand fpr *Tinnevelly* kinds continues, and as good business has been done, chiefly in the qualities selling at 2¼d. to 3d. per lb., arrivals continue small, from which it would appear that values are likely to be maintained for the present at least. *Alexandrian* kinds are slow of sale, owing apparently to the fact that little of good quality is offering. Small sales of siftings have been effected at 2¾d. per lb.

SODA CRYSTALS—Are quoted 55s. per cwt. in barrels, and 52s. 6d. in bags, ex-ship, London.

SODA COMPOUNDS.—*Crystals*: barrels, 55s., bags, 52s. 6d. per cwt., ex-ship, London. *Ash*: £5 to £5 10s. per ton, according to strength, quantity, and packing. *Bicarbonate*: 97 per cent., £7 10s. to £8 per ton; ditto, fully bicarbonated, 18s. 6d. to 19s. per cwt. *Bichromate*, 2¼d. per lb. *Bromide*: 2s. 1½d. per lb. *Caustic*: white, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. *Hyposulphite*: 6s. 6d. to 8s. per cwt., according to quantity, etc. *Iodide*: 11s. 10d. per lb. *Nitrate*: commercial, £7 15s.; refined, £8 per ton.

SPICES (VARIOUS).—*Black Peper*: 35 bags Singapore sold, mixed gray at 4½d. to 4⅝d.; 100 bags sifted, kiln dried, bought in at 5d.; 67 bags Penang sold at 4¾d. *White Pepper*: 302 bags Singapore sold, good at 8⅞d. to 9d. *Chillies*: 25 bales Zanzibar bought in at 38s. *Capsicums*: 90 bags West Coast African bought in at 28s. to 32s. *Cassia Lignea*: 170 cases sold, new selected at 46s. 6d., with a few cases at 50s.; 250 bales broken sold at 36s.; 91 bales chips bought in at 40s. *Cassia Vera*: 60 bales bought in at 40s. *Cinnamon Chips*: Of 384 bags Ceylon, only

65 bags sold at 4d., 37 bags quillings sold at 6½d. to 7¼d., and broken quill at 5½d. *Mace*: 54 cases West India mostly sold, low to good middling red at 1s. 1d. to 1s. 7d., fair to good pale at 1s. 8d. to 1s. 11d. *Pimento* in slow demand and easier; of 956 bags only 104 bags sold, chiefly fair to good at 4½d.

STRYCHNINE.—Makers' prices are 2s. per oz. for the *pure cryst.*, 1s. 11d. per oz. for *pure powder*, 1s. 11d. per oz. for the *Hydrochlorate*, 1s. 10d. per oz. for the *Neutral Sulphate*, 1s. 9½d. per oz. for the *Nitrate*, and 1s. 9d. per oz. for the *Bisulphate*. For large contracts price would, however, be a little below above figures.

SULPHATE OF COPPER—Is again dearer, in consequence of the advance in value of the metal, and is now quoted £18 10s. to £20 per ton, on the spot.

SULPHONAL.—Stocks which were held by the second hand at the time when makers suddenly advanced their price are gradually becoming absorbed, and the time cannot be far distant when makers' full price of 17s. per lb. for both crystal and powder will have to be paid.

Newcastle Chemical Report.

JANUARY 11, 1899.

More activity is shown in the making of annual contracts for heavy goods. Fair business so far has been done in bleaching Powder at slightly better prices. Soda Crystals as well. Prices quoted are as follows:—Bleaching Powder, £5 to £5 10s. Soda Crystals, basis price, 45s. to 47s. 6d. Alkali, £4 5s. to £4 10s. Sulphur, £4 15s. to £5. Caustic Soda, 70 per cent., £7 5s. to £7 10s. per ton.

Manchester Chemical Report.

JANUARY 11, 1899.

The Board of Trade Returns just published are more satisfactory than has been the case for several months past. This is especially the case in regard to heavy chemicals, the "slump" in which has been very heavy, so far as exports to the United States are concerned, and it is to be hoped that a reaction in this department has now set in. Although the increase in Alkali generally is only 1·4 per cent., and in Bleaching materials, 1·2 per cent., so far as quantity is concerned, the value shows a decrease of 2·5 and 16·0 per cent. respectively. This, of course, is accounted for by the decline in value, and the point will be appreciated when it is stated that the quantity of Alkali exported to the United States in 1898 was 3464 tons, as against 5463 tons in 1897. The exports of chemicals and medicinal preparations for the month of December showed a slight decrease of 2·9 per cent. So far as the trade of the northern district is concerned a good report contiuues to be made. Caustic Soda is a shade higher, and Bleaching Powder remains firm. Soda Crystals are rather dull, but Bicarbonate of Soda is unchanged. In miscellaneous chemicals, there are no further advances to report, and they continue firm at late rates. Tar products continue to show an upward tendency. The Manchester Gaythorn Works tar contract for March, 1899, has been let in competition at 7s. 9d. per ton on a sliding scale, and the figures include cost of working and the carriage of the tar to the distillers' works. Pitch is improving, and is firm at 21s., *f.o.s.*, Manchester Ship Canal. The direct oil imports to this port continue large.

Liverpool Market Report.

JANUARY 11, 1899.

AMMONIA SALTS.—*Carbonate*, 3d. per lb; *Sal Ammoniac*, 33s. to 35s. per cwt.; *Sulphate*, £10 7s. 6d. per ton.

BEESWAX.—10 bags of good *Chilian* sold at prices ranging from £7 to £7 15s. per cwt.

CANARYSEED—Is neglected for the amount, and there have been no sales upon which to base quotations.

CHILLIES.—30 bags of good *Sierra Leone* fruit made 47s. 6d. per cwt. ex store.

COPPERAS—37s. to 39s. per ton.

COPPER SULPHATE—Is dearer, £19 5s. to £19s. 10s. per ton.

GUM.—10 serons of Arabic sorts sold at 66s. per cwt. Sales of Niger at steady rates are also reported.

HONEY.—100 barrels of *Chilian* sold on private terms.

KOLA NUTS.—6 packages of dried made 2d. per lb., a rather better price than usual.

OILS (FIXED) AND SPIRITS.—*Castor* has been selling well at full rates and enjoy good inquiry, of Calcutta "good seconds" 50 cases sold ex quay at 2⅛d. per lb. early in the week, and latterly 100 cases at 2¼d., at present 2⅜d. is asked. French 1st pressure is also at 2⅜d. per lb. All Bombay offering has been sold, including 200 drums at 2⅜d. per lb. *Olive* is very firm. The whole of the Seville oil offering under £29 10s. per tun on the spot has been cleared, and £29 10s. to £30 is now wanted; Malaga £30 per tun. Spanish oils are offering in Spain at £29 15s., cost and freight for Seville, and £31 cost and freight for Malaga. *Linseed* of Liverpool pressure has risen to 18s. 3d. and 18s. 6d. per cwt. in export casks. *Cottonseed*: Liverpool refined is also a shade dearer, the price in export barrels now being 15s. 6d. to 16s. *Spirits of Turpentine*: From 33s. 3d. per cwt. it has dropped to 33s., at which price it is steady, with a fair amount of business and inquiry.

POTASH SALTS.—*Bichromate*: 3½d. per lb. *Carbonate*: £7 per ton. *Chlorate*: 3½d. to 3¾d. per lb. *Cream of Tartar* easier in price; 71s. to 75s. per cwt. *Prussiate*: 6¾d. to 7d. per lb. *Pearlash* is quiet at 34s. 6d. to 35s. per cwt. *Potashes* slow of sale at 25s. per cwt. *Saltpetre*: Pure, 22s. 6d. per cwt., very scarce; 412 bags of Karachi, 3·55 per cent., sold at 16s. 9d. per cwt. ex store, clearing the market here.

SODA SALTS.—*Bicarbonate*: £6 15s. per ton. *Borax*: £16 to £17 per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton; 70 per cent., £7; 60 per cent., £6 per ton. *Crystals*: £3 per ton. *Nitrate* is steady at 7s. 6d. to 7s. 9d. per cwt., but trade is quiet.

Trade Notes.

LIEBIG'S EXTRACT OF MEAT COMPANY, LIMITED.—At a Board meeting of this Company, held on Friday, January 6, it was resolved to declare a half-yearly interim dividend of 5 per cent., the same as last year, being twenty shillings per share, free of Income Tax, payable on and after February 15 next to the proprietors registered on the Company's books on February 8, and to holders of share warrants to bearer.

MR. W. S. BAXTER, chemist and druggist and optician, of Bramley, near Leeds, sends an advertising booklet, entitled "Facts about Eyesight, Eyestrain, and Spectacles." It warns the reader "to look to your eyes," and goes on to speak of the eye as an optical instrument, dealing with defective eyes, hypermetropia, astigmatism, presbyopia, and children's eyes. It gives useful "points for spectacle wearers," and hints how to preserve sight, together with a simple method of testing one's own sight. Copies of this booklet can be supplied to retailers of spectacles.

CLINICAL THERMOMETERS are now sold very largely by chemists, and although the demand is continuous throughout the year, it is perhaps more active in winter than in summer. It will not therefore be out of place to remark upon a matter so important as the accuracy of clinical thermometers. The cheap class made in Germany are remarkable for the absence of this characteristic, and it is a refreshing contrast to see clinicals so entirely free from error as in the instance just brought to our notice, in which a batch of forty-eight instruments have just been returned from the Kew Observatory to the makers, Messrs. Perken, Son and Rayment, of 99, Hatton Garden, E.C., each instrument accompanied by an official certificate. Forty-five of these showed that the instruments they referred to were free from error (standards), whilst the errors pertaining to the other three were the very slightest recognised by the Kew testing authorities—by one-tenth of a degree at one point only, the rest of the scales being free from error.

MESSRS. ALLEN AND HANBURYS, LTD., submit a specimen copy of their wholesale prices current of drugs, chemicals, and improved pharmaceutical specialties and dietetic products, which was issued by the firm in January, 1898. The following note accompanies the list:—"In your Trade Notes, last week, you refer to a new price list and state that it is 'a distinct advance on anything of the kind previously published. May we ask you kindly to compare the said list with the one we have issued since January, 1898? We think you will find most of the special features, to say the least, remarkably similar." Messrs. Allen and Hanburys' list is a capital one, and we are glad to be able to say that there was no intention of comparing the one mentioned last week with the productions of other firms.

Advertisement.

(Received too late for Classification).

QUALIFIED ASSISTANT wanted for dispensing business. P. DAVIDSON, Pharmaceutical Chemist, 342, High Rd., Brondesbury, N.W.

Calendar for the Week.

Sunday, January 15. 2 after Epip. Sun rises 8.2; sets 4.18.

Monday, January 16. Sun rises 8.1; sets 4.20.

Tuesday, January 17. Sun rises 8.0; sets 4.21.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION, County Restaurant.—Lantern lecture on "Wensleydale," by F. Brundrett.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Professor E. Ray Lankester on "The Morphology of the Mollusca."

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—"On Some New Half-tone Screens of English Manufacture," by J. E. Johnson.

Wednesday, January 18. Sun rises, 7.59; sets, 4.23.

THE CHEMISTS' THIRTY-THIRD ANNUAL BALL, to be held at the Portman Rooms, Baker Street, W., at 9 p.m.

PHARMACEUTICAL SOCIETY, 36, York Place, Edinburgh, at 8·30 p.m.—Evening meeting, when several papers will be read.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover Square, W., at 8 p.m.—The President's Annual Address.

Thursday, January 19. ☽ 4.36 A. Sun rises 7.58; sets 4.24.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—The programme for this meeting includes nine papers dealing with various subjects.

LINNEAN SOCIETY OF LONDON, Burlington House, Piccadilly, W., at 8 p.m.—Papers by Mr. G. R. Murray and Miss F. G. Whitting, Mr. A. J. Maslen, and Dr. W. G. Ridewood.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m. Mr. A. H. S. Landor will deliver the first of a series of lectures on "Tibet and the Tibetans."

Friday, January 20. Sun rises 7.57: sets 4.26.

BRIGHTON PHARMACY BALL, Royal Pavilion.

IRISH PHARMACISTS' ASSISTANTS' ASSOCIATION, Gresham Hotel, Dublin, at 8 p.m.—Smoking concert.

ROYAL INSTITUTION, Albemarle Street, W., at 9 p.m.—Professor Dewar will lecture on "Liquid Hydrogen."

Saturday, January 21. Sun rises 7.56; sets 4.27.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Sir Alexander C. Mackenzie on "Liszt" (with musical illustrations).

Publications Received.

NINETEENTH ANNUAL REPORT OF THE BRITISH COLUMBIA BOARD OF TRADE, 1898. Pp. 102. Victoria, B.C.: Board of Trade Building. October, 1898. From the Publishers.

A TEXT-BOOK OF BOTANY, by J. M. LOWSON, M.A., B.Sc., F.L.S., Pp. viii. + 394. Price 6s. 6d. London: W. B. Clive, University Correspondence College Press. 1898. From the Publisher.

SAINT THOMAS'S HOSPITAL REPORTS, new series, edited by Dr. H. MACKENZIE and Mr. G. H. MAKINS. Vol. xxvi. Pp. xviii. + 490 + 40 + 120. London: J. and A. Churchill. 1898. From the Publishers.

SUR L'ESSENCE DE ROSE, par MAURICE DUYK. Pp. 10. Bruxelles: Hayez, Imprimeur de L'Academie Royale de Belgique, rue de Louvain, 112. 1898. From the Author.

BEITRAG ZUR KENNTNISS DER FLECHTEN UND IHRER CHARACTERISTISCHEN BESTANDTHEILE, by O. HESSE. Leipzig: Johann Ambrosius Barth. 1898. From the Author.

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OFFERED.

Magic Lanterns, second-hand; triples and biunials: oxyhydroged microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s. —Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Robert H. Clark's Specialties.—Lantern, with 4-in. condensers and 3 wick lamps, 17s 6d.; with 4 wick lamps, 18s 6d. Slides, sale or hire, Conquest of Soudan, Spanish American War. Catalogue free.—Robt. H. Clark, Royston, Herts.

No. 2 Willcox's Gun-metal Pump, good as new, only used short time for water, 25s.—Moss, Chemist, 34, Avondale Road, Chorley.

Jeyes' Dips.—Having a surplus stock, clean, I will dispose at 15 per cent. below invoice prices and pay carriage. Write for particulars—Paterson, 133, Govan Road, Glasgow.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

For Disposal.—'Pharmaceutical Journal' and 'Chemist and Druggist' for 1898. What offers?—Lees, Chemist, Oldham.

For Sale.—Handsome Globe-Lamp, ruby-flashed glass, richly gilded, good as new. £2, worth double. Dr. Pugh, 26, Acacia Road St. John's Wood, N.W.

Chest Protectors.—Single Scarlet Felt; best quality; three sizes; 25 per cent. off list prices, or suitable exchange.—J. Botham, Higher Broughton, Manchester.

Offer Wanted for 6 Fletcher's Thermo-hydrometers, new, ·85 to 1·150, in case; or exchange for check till.—Andrews, Chemist, Plymouth.

Fine Second-hand ½-plate Tourist Camera, the Field, all movements and complete, cost £4 12s. 6d., price £2 8s.; also ¼-plate Instanto, 23s.; approval.—Powell, Undercliffe, Yorkshire.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

'Pharmaceutical Journal,' from July, 1886, to June, 1889; state lowest price, carriage paid (or other years offered in exchange); also Glass Labelled Mahogany Drawers wanted, state price.—Griffin, Chemist, Kidderminster.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Allen, Andrews, Bambrough, Barker, Bartlett, Baxter, Blanchard, Blayney, Clark Clarke, Daniel, Dutton, Fearnley, Ferrall, Gamble, Hebb, Homer, King, Kirkby, Lance, Long, Morley, Orton, Parry, Pater, Poole, Rinton, Robinson, Scott, Shepherd, Spence, Taylor, Thompson, Thorburn, Walton, Wamsley, Wardleworth, Whiteley, Wiernik.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

The Return Football Match with the South London School of Pharmacy was played on Saturday, January 14, at Shepherd's Bush. The weather was all that could be wished for, and if any members of the School had been present they would have witnessed one of the most evenly contested matches of the season, although the result was contrary to the expectations of both sides, since, after the recent examinations, both clubs had necessarily to try many new men. The ball was kicked off about three o'clock, and within ten minutes of the start Muter's scored a goal, a feat which they repeated in the next ten minutes from a very lucky shot, which was too high for the Square goal-keeper. This seemed to put the Bloomsbury team on its mettle, and a determined rush was made, which resulted in a goal, after a very close scrimmage on the line, just before half-time. On crossing over, the Square seemed to have the better of the play, and equalised by a good shot from Warren. From this point to the finish the play was very even, neither side getting within shooting distance, and the game ended in a draw. The feeling is abroad that if there had been a few Square spectators, if only to neutralise those of Muter's, the game might have ended far differently.

Mr. E. Geo. Elliman, of Chesham, an old student during 1889-91, communicates a note on an insect which he has recently discovered, and which proves to be an addition to the known list of British Staphylinidæ. According to the 'Entomologists' Monthly Magazine,' the insect was found among rotten leaves in a ditch near Tring, at the base of one of the southern slopes of the Chiltern Hills. Mr. G. C. Champion, F.Z.S., identifies it with *Homalota* (*Rhopolocera*), *Clavigera*, Scriba, a species widely distributed on the Continent. The researches of Mr. Elliman tend to prove that the list of British Homalotæ, long as it is already, is not yet completed, this being the second species he has added from his own neighbourhood. He will gladly correspond with any brother chemist whose hobby is a similar one, viz., the study of Coleoptera.

FRENCH NEWS.

Student Life in Paris. — In response to an oft-repeated desire expressed by Anglo-American students in Paris for a place wherein they can assemble and meet and eat together, in fact a restaurant where Anglo-Saxon tastes will be catered for at a nominal fee, Monsieur Creuzet comes forward with the announcement that he has taken charge of the "American Art Association" Restaurant, and invites members and their friends to meet him on a certain evening, when he would be pleased to sample with them his wines, beer, champagne, and cigars. He adds that a billiard and fencing room will be opened, and in the restaurant the following prices will go into effect :—

	Present Price.	Former Price.
Ragout	30 c. (3d.)	50 c. (5d.)
Poulet	60 c. (6d.)	75 c. (7½d.)
Rôti-de-veau	40 c. (4d.)	50 c. (5d.)
Roast beef	40 c. (4d.)	50 c. (5d.)
Filet-de-bœuf	60 c. (6d.)	75 c. (7½d.)
Beef-steak	40 c. (4d.)	60 c. (6d.)
Entrecote	50 c. (5d.)	60 c. (6d.)
Châteaubriand	60 c. (6d.)	75 c. (7½d.)
Légumes	15 et 20 c. (1½ & 2d.)	20 c. (2d.)
Vin Ordinaire—le demistier	20 c.	Not served before.
Vin Ordinaire—le ½ litre	40 c.	,, ,,
Vin Vieux du Pays, valant le Bordeaux	1 f. la bouteille.	
,, ,, ,,	50 c. la ½ bouteille.	

and winds up with an appeal for the hearty support of the Anglo-Saxon element in this new venture.

Fire in a Laboratory.—At 10 o'clock Tuesday morning a fire broke out in a laboratory connected with the temporary hospital at Aubervilliers. It was only after the promptest action on the part of the officials and entire *personnel* of the hospital that the patients were rescued and placed beyond danger. A wooden pavilion, 30 metres in length, was licked up by the flames, and two fire engines were called into service before the fire was brought under control. About half-past twelve all danger was over. The moment the breaking out of the fire was known in Paris, M. de Selves, Prefect of the Seine, accompanied by his aids, went to the scene, and remained until the flames were finally extinguished.

The 'Journal de Médecine de Paris' publishes what it calls the "Traitement Pharmaceutique" of whooping cough, dividing it into two classes—"External" and "Internal." The former has for its aim the prevention of bronchitic infection, and consists of the following treatment :—

1. Chlorate and boric acid gargles.
2. Nasal antisepsia, by inserting three times daily a little of the following ointment in the nostrils :

Vaseline	30 gm.
Acid Boric	5 gm.
Menthol	0 gm. ·05.

3. Painting the pharynx with 5 per cent. solution of cocaine in glycerin, producing anæsthesia of the inter-arytenoidien region.
4. Inhalations of chloroform, oxygene, or Wilde's mixture, as follows :

℞ En. Térébinthine	1 gm.
Chloroforme	3 gm.
Ether Sulfurique	6 gm.

5. Vaporisation in a capsule of—

Thymol	1 gm. 50.
Alcoolat de Laraude	10 gm.
Alcool pur	10 gm.
Eau distillée	80 gm.

6. Fumigations of sulphur during the absence of the patient from the room (2 grammes per cubic métre of space).
7. Sprays of 4 per cent. solution of carbolised water in the room, on the carpets, curtains, bed, etc.
8. Warm baths, which invariably calm the nervous troubles of excitable children.
9. The means which appears to be most efficacious consists in inhaling ozone, produced by electric currents. The *séances* should have a duration of five to twenty minutes, according to the age of the patient and the extent to which it is tolerated.

By far the greatest number of successes have been ascribed to this last and simple treatment solely.

The "Internal" Treatment is destined to combat nervous excitability (convulsive cough, respiratory spasms), which is of the highest importance, since the intensity of the fits of coughing might produce—by the veinous stagnation it determines—epitaxis, ecchymosis of the conjunctiva, cerebral hæmorrhage, or meningitis. The three medicaments likely to be of benefit are bromoform, belladonna, and antipyrin.

1. Margau's bromoform mixture contains :—

℞ Bromoform	gtt. 128 or 3 gm. 50 centigm.
Huile d'Amaudes douces Gomme Arabique	aa 30 gm.
Eau de Laurier-Cerises	10 gm.
Sirop de Fleurs d'Oranger	40 gm.
Eau distillée, q.s. pour faire	300 gm.

2. Jules Simon's belladonna mixture contains :—

Teinture de Belladone Alcoolatiose de Racines d'Aconit Elixir Paregorique	aa 3 gm.	10 to 30 drops daily.

3. Antipyrin.—This diminishes the frequency and violence of the fits of coughing, but has the drawback of diminishing at same time urinary secretion, the principal source of toxine eliminations.

From 6 to 12 months,	10 to 50 centigrammes may be given.		
,, 1 to 2 years,	20 centigrammes	to 1	gramme.
,, 2 to 5 ,,	50 ,,	to 2	,,
,, 6 to 10 ,,	1 to 3 grammes in the course of the day.		

Other medicaments, such as chloral, chloroform and bromides, are also of much service.

Lauréat de l'Institut de France.—We are pleased to announce that it is one of the members of our profession, Monsieur Dr. P. Carles, chemist, University Professor of Pharmacie and Chemistry at Bordeaux, who has taken off the Montyon Prize (valued at 2000f., or £80) of the Academy of Sciences of Paris, 1898. Referring to the matter, the Commission reporter says :—"Monsieur P. Carles addressed a pamphlet to the Academy treating of the tartaric derivatives of wine. This publication explains fully how

the tartaric derivatives are separated from the wine, how those of the mother vintage are recovered, the processes employed for their purification, their analysis, and how, in short, they are transformed into bitartrate of potash, the ultimate aim of the industry. Vine growers and wine merchants will find in this little work much useful information, and tartar refiners and manufacturers of tartaric acid will draw therefrom many hints and ideas of unquestionable service in their industry. The chapters dealing with tartar adulteration, as also the analytical portion, are exceedingly well written. This pamphlet will therefore be of inestimable value to all who in such wine-growing countries as France, Spain and Italy seek to benefit by utilising the by-product of grape and wine." In our own country, also, where the tartar is refined and tartaric acid made, and where the quantity of bitartrate of potash consumed is greater than elsewhere, this little book will be read with interest, and consulted upon all occasions with fruit. The price is 2f. 75c. post free (2s. 3½d.), and may be obtained from Libraires Associés, Rue de Buee, Paris, or Feret et Fils, editors, Cour Intendance, Bordeaux, France.

IRISH NEWS.

AT CORK LAST WEEK, Sir Charles Cameron, C.B., public chemist, Dublin, delivered an interesting lecture under the auspices of the Literary and Scientific Society, on "Flames," in the course of which he explained what was meant by flame from a scientific point of view, and its practical applications. The lecturer illustrated the subject by numerous experiments, and hoped that carbide of calcium would soon be manufactured in Ireland, where there was plenty of lime and water, the basis of that product. He spoke at some length on acetylene gas and on illuminants in general.

PHARMACEUTICAL SOCIETY OF IRELAND.—Pharmaceutical Assistants' Examination.—The following passed: J. Hartley, J. Wilson, M. Dempsey, L. W. Longmore, A. C. Loton. Registered Druggist Examination.—The following passed: H. J. D'Arcy. One candidate was rejected. Pharmaceutical Licence Examination.—The following passed: D. C. McDougall, W. G. Stratton, E. Barnes, F. Harpur, C. P. Fairweather, T. L. Foster. Nine candidates were rejected.

Newcastle Chemical Report.

JANUARY 18, 1899.

In keeping with the improved condition of general trade and higher values of crude produce and coals necessary in the manufacture of chemicals, this market is more buoyant, especially for bleaching powder. Soda Crystals inquiries are on a larger scale. Altogether the feeling is better. Prices quoted are: Bleaching Powder, £5 to £5 10s., according to market. Soda Crystals, basis price, 45s. to 47s. 6d. Caustic Soda, 70 per cent., basis price, £7. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Sulphur, £4 15s. to £5 per ton.

Manchester Chemical Report.

JANUARY 17, 1899.

The promise with which the year opened of an improvement in heavy chemicals is being borne out, and prices are very firm. Orders are being more freely placed, and as the textile and dyeing industries are busy there is a greater bulk movement than has been the case for some time past. Soda Crystals are about 2s. 6d. higher, and although Caustic Soda shows no present change in price it is much firmer. Bleaching Powder is weaker. There are advances to record in some miscellaneous articles. Sulphate of Copper ranges from £19 10s. to £20 per ton fo best brands, prompt delivery, Manchester, but holders ask £20 10s. next month's delivery. Borax is dearer at £16 10s. per ton, *f.o.r.* Brown Acetate of Lime is steady at £5 7s. 6d. to £5 10s., and grey is somewhat dearer. White Powdered Arsenic is in more request at £16 10s. to £17, ex ship, Garston. In Pitch a good business is being done, and fair shipments are being made by the Canal from this port. Green Copperas is dull locally, but fair export inquiry maintained. Yellow Prussiate, Lancashire make, is unchanged and firm. Aniline Oil and Salt dull and rather lower.

SCOTTISH NEWS.

LAUDANUM POISONING CASES.—On Monday, January 9, a man named Edward Hankinson, residing at 61, Buccleuch Street, Edinburgh, was admitted to the Royal Infirmary, suffering from an overdose of laudanum. He died the following afternoon.—At Ayr, on Tuesday, January 10, Thomas M'Clelland, labourer (40), was found dead in a barber's shop in Mill Street. He had gone in and been allowed to lie down some time before, and when examined he was found to be dead. An empty bottle which had contained and was labelled laudanum, and which had been in M'Clelland's possession, was found in the house of his father, where he lived.

EXPLOSION AT EDINBURGH CHEMICAL WORKS.—Considerable commotion was caused in the vicinity of the South-Back Canongate, Edinburgh, on the morning of Friday, January 13, by a loud report, which was found to have proceeded from the chemical works of Messrs. Duncan, Flockhart and Co. According to a report in the *Scotsman*, a steam pipe connected with a large boiler had burst, and the report was principally, if not entirely, due to that fact. As the boiler was at very high pressure, there was a great outrush of steam, causing a concussion of air, which penetrated the whole of the works. A large number of windows in the place—some of them as far off as 100 feet from where the explosion occurred—were blown out, and several large panes of thick plate glass on the roof of one of the departments were completely removed. The impact was felt by all the employés, and many of them were a little knocked about; but fortunately nobody was injured, while the damage to property, considering the violence of the shock, was comparatively trifling.

ARBROATH CHEMISTS' ASSISTANTS' ASSOCIATION.—The first annual supper of this Association was held in the White Hart Hotel on Tuesday, January 10, when Mr. F. Bennet, President, occupied the chair, and the duties of croupier were discharged by Mr. James Ruxton. There was a good attendance of members, and amongst those also present were Drs. Anderson, Gilruth, Martin, and Duncan, and Messrs. Naysmith, Jack, and Buchan, chemists. After supper, purveyed in capital style by Mr. Smith, an interesting toast list was gone through. The toast of the Association was given by Mr. Naysmith, who, in the course of his remarks, pointed out the benefits to be derived from membership of the Association. The pharmaceutical examinations were becoming stiffer every day. and participitation in the work of such an Association could not fail to be of great service to young chemists in assisting them to pass through the ordeal of their examinations. He complimented Mr. Bennet on the active interest he had taken in the Association, and expressed the hope that it might long continue to flourish. Mr. Bennet replied. "The Medical Profession" was proposed by Mr. Buchan, and replied to by Dr. Gilruth. The Chairman proposed "The Pharmaceutical Society," and Mr. Jack replied. Other toasts were given, and with songs and recitations interspersed a most enjoyable evening was spent.

Obituary.

TURNER.—On December 29, 1898, Henry Turner, Chemist and Druggist, Upper Norwood. Aged 59.

BEALE.—On January 4, William Scott Beale, Chemist and Druggist, Southgate Road, London, N. Aged 50. Mr. Beale had been an Associate of the Pharmaceutical Society for many years.

HUDSON.—On January 5, Thomas Hudson, Chemist and Druggist, South Shields. Aged 79.

CUNLIFFE.—On January 7, John Cunliffe, Chemist and Druggist, Padiham. Aged 32.

WALKER.—On January 7, Ann Eliza Walker, Chemist and Druggist, Charlbury, Oxon. Aged 71.

ARNOLD.—On January 8, James Arnold, Chemist and Druggist, Edenbridge, Kent. Aged 55. Mr. Arnold had been a member of the Pharmaceutical Society since 1870.

WYNNE.—On January 15, Mary Anne, beloved wife of Edward Price Wynne, Chemist, Aberystwyth. Aged 59.

ENGLISH NEWS.

The Chemists' Ball, held at the Portman Rooms, Baker Street, W., on Wednesday, was a great success and a worthy representative of the pleasant social gatherings which have now been held annually for a third of a century. Tickets had been disposed of very freely, and though the number present during the evening was never too great for comfort, no difficulty was experienced in keeping the floor occupied for most of the items in the lengthy programme. Amongst those present were: Mr. Walter Hills, President of the Pharmaceutical Society, and Mrs. Hills; Mr. and Mrs. Carteighe; Mr. and Mrs. J. Rymer Young (Warrington); Mr. and Mrs. Harrington and daughters; Mr. William Warren. Mr. Richard Bremridge, Mr. T. Morley Taylor and the Misses Taylor, Mr. J. W. Bowen, Mr. and Mrs. J. C. Umney, Mr. and Mrs. A. J. Phillips, Mr. J. H. Mathews, Mr. and Mrs. E. N. Butt, Mrs. and Miss Martindale, and Dr. Harrison Martindale, Mr. and Mrs. A. W. Gerrard and daughters, and other distinguished pharmacists and friends too numerous to mention. The programme was an excellent one, and Mr. Dan Godfrey's orchestral band was in fine form throughout. Supper was served about midnight, and the usual toast—"Success to the Chemists' Ball"—was proposed by the Chairman, Mr. Walter Hills, and responded to by the Hon. Secretary, Mr. Warren, in a happily turned speech. After a brief interval dancing was resumed, and continued until 4 a.m., when the last chemists' ball in "the eighteen hundreds" came to an end. Great credit is due to the Hon. Secretary, Mr. William Warren; the M.C., Mr. J. W. Bowen; and other members of the Committee, for the admirable way in which all the arrangements were carried out, and it is satisfactory to learn that the Benevolent Fund will benefit to a substantial extent by the profits on the tickets sold.

British Patents.—The *Daily News* points out that the approximate number of applications for British patents in 1898 was 27,639. According to a calculation made by a member of the Patent Law Reform Association, and based on Government statistics for past years, the probability is that of the above total of applications only 12,919 will be completed and issued as patents. In the life of a British patent renewal fees are required ten times, and amount to £95. Applying the results of past experience the first of these renewal fees (at the end of four years) will kill off some 9135 of the 12,919 completed patents; the second renewal fee (at the end of five years) will similarly dispose of another 1014, and this process will continue its operation until out of the original 12,919 completed patents no fewer than 12,336 have come to grief, leaving only 583 to live for the full term of fourteen years. The members of the Patent Law Reform Association derive their great argument from the example of America. Upon the same number of applications for patents as in Great Britain (27,639) about 15,237 patents would be issued at a cost of £7 each, and the life of a patent is seventeen years. For these reasons of cheapness and validity patentees derive encouragement rather than the reverse, hence the constant founding in the United States of specialised patent industries and the employment in their development since the year 1880 of no fewer than 1,876,152 persons.

Mr. F. Gilderdale, chemist and druggist, Newcastle, has been appointed Honorary Secretary of the Newcastle-on-Tyne and District Chemists' Association, in place of Mr. G. F. Merson, who has resigned.

Coroner and Doctor.—At an inquest held on Tuesday, January 10, at Thackley, near Idle, on Reuben Glover (63), a French polisher, evidence was given that on the previous Sunday morning the man drank from a bottle of potassium bichromate which he used for staining purposes. It was on a shelf where he had placed a bottle of beer, and it was for this he mistook it. It was also stated that the doctor who was called in told the widow to throw the bottle away.—Mr. J. Hirst, locum tenens for Dr. Bryan, of Idle, denied telling anyone to destroy the bottle, and said if he did it must have been in the heat of the moment, on account of its being dangerous to the other inmates of the house. On his second visit witness took the bottle away.—The Coroner: Who authorised you? You hadn't the slightest authority. It is gross contempt of court. It was not yours, and you did not even inform the police. The least said the soonest mended. Had it not been for a fluke he might have been buried as a man who "drank." Then you had no business to take away the bottle. I consider it a gross case, and by taking it as you did it was really false pretences; at any rate, it might be considered so.—Witness said that if he had done wrong, he was sorry, and apologised to the court.—The jury returned a verdict of "Death by misadventure."

Plymouth, Devonport, Stonehouse, and District Chemists' Association.—The annual ball of the above Association was held on Friday last, January 13, at Stonehouse Town Hall. Over 200 guests accepted invitations, and all concurred that it was the most successful ever held under the auspices of the Association. Dancing was kept up from eight till two, refreshments being supplied by Matthews and Co., Plymouth. A large amount of the success was due to the energetic efforts of the secretary, Mr. F. Maitland, who was ably assisted by the following committee: Messrs. G. Breeze, J.P., James Cocks, E. W. H. Green, J. W. B. Swainson, J. D. Turney, C. T. Weary, W. H. Woods.

Alleged Thefts from Wholesale Druggists.—At the Southwark Police Court on Wednesday, January 11, Alfred Charles Hammersley (31), clerk, of Church Road, Islington, was charged, on remand (see *ante*, 12c), before Mr. Slade, with stealing a bottle of syrup of hypophosphites and an earthenware jar, the property of Messrs. Wright, Layman, and Umney, wholesale druggists and manufacturing chemists, of Southwark Street, and William Cole (24), clerk, was charged with receiving the same.—Mr. Humphreys, who appeared for the prosecutors, now said that Cole was naturally taken into custody for receiving the bottle of syrup, but he had since been found to be without blame in the matter, and he (Mr. Humphreys) asked that the charge against him might be withdrawn.—Mr. Slade discharged Cole, remarking that he left the court without a stain upon his character.—Mr. F. Scott, for the defendant, said Hammersley would plead guilty. He was married only three months ago, and it was since that time that he had taken the goods. He had hitherto borne a good character, and he (Mr. Scott) asked that he might be dealt with under the First Offenders Act.—Mr. Charles Umney, a member of the prosecuting firm, said that 175 packages which were seized at the prisoner's house, and which it was presumed had been stolen, came before him, but he was able to identify only about £3 worth of goods. The value of the 175 packages was about £15. The prisoner came to the firm bearing a good character, and gave general satisfaction.—Mr. Slade said he could not look over such an offence or deal with the prisoner under the First Offenders Act. He sentenced the accused to six weeks' imprisonment.

Chemists' Wine Licences.—At the Newcastle Police Court on Friday, January 13, William Potts Philipson, described as a chemist of Spital Tongues, but not registered as such, was summoned on a charge of having sold wine contrary to the terms of his licence.—It was stated that the defendant carried on business as a chemist, and was licensed to sell wine to be consumed off the premises. The evidence was to the effect that on December 27 several boys went to the shop and bought three bottles of wine, which they were allowed to drink on the premises. It was also alleged that the defendant himself shared in the contents of the first bottle.—The defence was that the first bottle was not paid for, and that the three bottles altogether represented a very small quantity, as the bottles were exceedingly small. Defendant had only had the licence a short time, and was not aware that he had committed an offence.—The Bench imposed a fine of £5 and costs, and ordered the licence to be endorsed.

The Colonial Office is reported by the *Times* to have intimated to the Council of King's College that, in selecting candidates for the Colonial Medical services, preference will be given (other things being equal) to qualified medical men who have received such bacteriological or similar special training as King's College provides. Mr. Chamberlain has also conveyed his thanks to the principal and Professor Crookshank for the assistance they have given in promoting the scheme for instructing colonial candidates in tropical diseases, and the Council of King's College and Professor Crookshank have promised to co-operate to the best of their power in carrying out Mr. Chamberlain's scheme. It might be asked why the King's College bacteriological department should be singled out in the manner implied in the first part of this note, for though the pioneer in such work, King's College is not now either

the only place or the best place for obtaining a training in bacteriology.

FACTORY ACT PROSECUTION.—At the Clerkenwell Police Court, on Monday, January 16, Messrs Betts and Co. (Limited), metallic capsule makers, of Wharf Road, City Road, were summoned by Rose Elizabeth Squire, Inspector of Factories, for not providing suitable washing conveniences in departments where lead is used. Miss Squire said the summons was taken out under the Factory and Workshop Act, 1878. The defendants employed girls in cutting out and colouring metal capsules, in the manufacture of which lead and tin were used, and there was also lead in the paint. She had visited the factory in Wharf Road on several occasions, and found a lack of washing accommodation. There were no towels and no nail-brushes, and the sinks in which the girls washed were also used for trade purposes. She suggested that one basin to every six persons should be provided, and that towels, soap, and nail-brushes should be within reach of the girls.—The manager of the factory denied that the girls were engaged in a dangerous occupation, and said they would not wash their hands if the accommodation was provided.—Mr. Bros: They must be made to. The object of the Act is to protect people from their own folly. Proper accommodation must be provided.—Mr. Ricketts: We shall have to fix thirty-seven basins.—Mr. Bros made an order that conveniences as suggested by Miss Squire should be provided in the defendants' factory.

MANCHESTER STUDENTS' SOCIAL.—The pharmacy students of the Owens College, Manchester, and the members of the teaching staff connected with the pharmaceutical department of the college, held a social gathering at the Alexandra Hotel, Moss Side, on Thursday evening, January 12. An excellent dinner was served, after which a varied programme of songs, recitations, banjo and violin solos was gone through, each one seeming to vie with the other to make the evening a success. The toast of "The Queen" was drunk with loyal enthusiasm; the "Department and Staff," proposed by Mr. W. B. Wamsley in an appreciative speech, was responded to by the Chairman, Mr. J. Grier and Mr. O. V. Darbishire, Ph.D., and the opinion was expressed that the facilities offered by the Owens College to pharmaceutical students were second to none. "The Pharmaceutical Society" was given by Mr. W. Botham and "The Visitors" by the Chairman. Mr. J. H. Hoseason replied to both, and in the course of his remarks showed what a poor status pharmacists would have had but for the broad and enlightened policy of the founders of the Pharmaceutical Society. At the suggestion of Mr. W. B. Wamsley it was agreed to send a message of sympathy to Mr. Wm. Kirkby, who through illness at home was unavoidably absent, and the gathering soon after broke up with the singing of "Auld Lang Syne."

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION.—A lecture by Mr. W. Lamond Howie, F.C.S., will be delivered in the Mechanics' Lecture Hall, Nottingham, on Wednesday, January 25, at 8 p.m., the subject being "Five European Capitals." The lecture will be illustrated by limelight views from photographs by the lecturer.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—In connection with this Association, on Tuesday evening, January 17, F. Brundrett, Esq., gave a lantern lecture entitled "Wensleydale." Over a hundred excellent photographs were thrown upon the screen and an interesting description given of each. A hearty vote of thanks was given to the lecturer before the meeting terminated.

CARBOLIC ACID POISONING.—The *Newcastle Daily Journal*, commenting on a poisoning case, says:—"Mr. Coroner Lynn's remarks at Blyth, yesterday morning (January 17), are deserving of public attention; and, most of all, the attention of the authorities. It is hardly credible that anyone knowing aught about carbolic acid and not being thoroughly demented, would resort to this burning chemical as a means of destroying life. It is a torturing poison, indeed. But, as the coroner remarked, it is a poison 'easily obtained for disinfecting purposes—in fact, the local authorities supply it free for that purpose.' So much the worse for the world. It is high time that this dangerous drug had its place in the schedule of poisons. Is it not a fact that there are non-poisonous substances of equal potency as disinfectants?"

Trade Notes.

VINOLIA NOVELTIES.—The Vinolia Co., Ltd., Malden Crescent, London, N.W., is offering a new "Liril" Violette de Parme series, which includes complexion powder, lip salve, violet powder, shaving cream, and perfume. These are all most artistically produced, and serve as pleasant variations on the Vinolia specialties already in established use. The firm is also offering a new "Losaria" Peau d'Espagne soap,

the perfume of which is quite novel, as well as a small and dainty watch-shaped bottle containing smelling salts, and packets of specially prepared Fuller's earth. Any of these novelties may be stocked with confidence as being articles of a quality likely to sell well and bring repeat orders.

FROMMS' EXTRACT CO., LTD., by the award of a diploma and gold medal at the South London Food and Drink (Temperance) Exhibition just concluded, has now gained no less than twenty-six gold medals and prizes, many of them at the leading exhibitions of the world, a fact which goes far to prove the assertion of the firm, that its Vegetable Extract and Vegetable Soup Tablets are rapidly attaining a leading position amongst the foods of the people.

MESSRS. SOUTHALL BROS. AND BARCLAY, LTD., Birmingham, send samples of a new covered pot for which they have recently secured the sole right in the United Kingdom. It is exceptionally neat and clean in appearance, and well adapted for dispensing vaselin, pomade, and other preparations of a similar nature. The lid is made of celluloid, which can be had either white or shell colour, and by a very ingenious arrangement it is lined with polished white metal turned back at the rim, the effect of which is to cause the cap to clip closely to the jar, and still be very easy of removal. This new jar should give great satisfaction to the trade on account of the advantages mentioned above, and also because it is less expensive than the old heavy covered jar which has been in use so long, and many will doubtless appreciate the economy effected by the saving of broken lids, those of the old jar being so liable to fall off and get broken.

Partnerships Dissolved.

(From the London Gazette.)

Henry C. Segrave and Charles R. Segrave (trading as Segrave Bros.), Medical Bottle Manufacturers and Druggists' Sundriesmen, 175B, Kentish Town Road, N.W. Debts will be received and paid by Henry C. Segrave.

William Preston and A. W. Cowburn, Manufacturing Chemists, Buckley Wood, Royton, near Oldham. Debts will be received and paid by William Preston.

G. Fehrenbach and F. W. Morris, Photographic Artists, 45, St. George's Place, Knightsbridge, S.W.

Patrick Sullivan and J. Hamel, General Medical Practitioners, 30, Campbell Road and 32, Bruce Road, Bow. Debts will be received and paid by Patrick Sullivan.

Percy H. V. Hammersley and Frank Heasman, Medical Practitioners, Leek, Staffs.

H. Green, Charles Howell, and F. J. Smith (trading as Howell, Green, and Co.), Photographic Camera Manufacturers, 48, Moor Street, Birmingham. So far as regards H. Green.

H. Parish, sen., H. Parish, jun. (trading as Parish and Son), Drysalters, etc., Oldbury, Worcester.

MARKET REPORT.

London Report.

January 19.

Business has been extremely quiet during the past few days, and there have been many complaints that there was so little doing. This apparently does not merely apply to the drug and chemical trade, but also to business generally. It remains to be hoped that to-day's drug auctions may inaugurate a period of greater activity in the branches in which our readers are chiefly interested. There are practically no changes to report, with the exception of an advance in price of Acid Citric. Quinine remains very quiet. Quicksilver and Mercurials are firm, as also is Cocaine. Glycerin unchanged. Cod-liver Oil weaker. Iodides and Bromides steady, as also are Borax and Acid Boracic. Cream of Tartar unchanged. Acid Tartaric firm. Acid Citric dearer. Sulphate of Ammonia is also dearer, as also is Sulphate of Copper in sympathy with the advance in value of the metal. Phenazone is said to be cheaper, but Antipyrine Knorr is unchanged in price. Acid Carbolic quiet. Menthol slightly easier. Cascara Sagrada quiet. Below we give prices ruling for articles of principal interest:—

Acetanilide.—The combined makers quote 11d. to 1s. 2d. per lb., according to quantity.

Acid Boracic.—Firm at 26s. per cwt. for *crystals* and 28s. per cwt. for *powder*.

Acid Carbolic—Has become somewhat quiet. Makers quote the 35-36° C. ice crystal 6½d. to 6¾d. per lb., in 2½ cwt. drums and overcasks, according to make and quantity, price of the 39-40° C. ice crystal being ½d. per lb. dearer. Detached crystals 39-40° C. (the B.P. quality) are quoted 8d. to 8¼d. per lb., according to package. *Crude*: 60° F., 2s. per gallon; 75° F., 2s. 4d. per gallon. *Liquid*: 95-98 per cent. of pale straw colour, 1s. 1d. to 1s. 2d. per gallon, in 40 gallon casks.

Acid Citric—Is very firm at 1s. 2d. per lb., nominally. Some makers have, however, refused to book orders, even at 1s. 2½d. per lb.

Acid Oxalic.—Makers quote 3d. to 3¼d. per lb. nett, free London.

Acid Tartaric—Firm. *English* spot, 12¼d. to 12½d. per lb.; *foreign*, 1s. per lb. *c.i.f.*

Ammonia Compounds.—*Bromide* is quoted 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to make, quantity, and packing. *Iodide*: 14s. 3d. per lb. *Muriate*: White free from metals 25s. 6d. to 27s. 6d. per cwt., while for chemically pure small crystals 30s. to 32s. 6d. per cwt. is asked. *Oxalate*: 5½d. per lb. *Sal ammoniac*: Sublimed firsts 35s., seconds 33s. per cwt. Crushed for batteries 2s. per cwt. more. *Sulphate*: Again dearer and a firm market, especially for prompt delivery. Quotations are: Grey prompt 24 per cent, London, £10 10s. per ton; Hull prompt and Jan.-June, £10 8s. 9d.; Leith prompt £10 10s., Jan.-June £10 12s. 6d.; Beckton nominally £10 6s. 3d., Beckton terms £10 6s. 3d. per ton. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb., according to quantity and packing.

Antimony.—*Regulus* is quoted £36 10s. to £37 per ton, and Japan *crude* (black oxide) £22 to £22 10s. per ton landed.

Antipyrine "Knorr"—Is unchanged. There are, however, reports that one maker of *Phenazone* has been quoting a very low price in competition with the *Star* brand (which had come into special favour with buyers. It remains to be seen whether the manufacturers of the *Star* brands (who are also the makers of *Antipyrine Knorr*) will meet this competition, rather than lose the ground which they had already gained.

Bleaching Powder (Chloride of Lime)—Unchanged at £6 per ton for English make.

Borax—Is unchanged at 16s. 6d. and 17s. per cwt. for *crystals* and *powder* respectively.

Bromides—Are quiet but steady at 1s. 10½d. per lb. for *Potass. Bromid.*, 2s. 1½d. per lb. for *Sodii Bromid.*, and 2s. 2d. per lb. for *Ammon. Bromid.* *Bromine* is quoted 2s. 2d. per lb. in cases of 60 lbs.; 5 case lots 1d. per lb. less.

Camphor.—Demand for *Crude* continues slow, and for arrival no business is reported from some quarters the *c.i.f.* price for arrival is reported higher; there are, however, still sellers at late rates. Refined unchanged, *English* makers still quoting 1s. 5½d. per lb. for Bells. *German* makers quoting ½d. per lb. less.

Cascara Sagrada—Is quiet at nominally unchanged value, there has, however, been practically nothing doing in the article during past few days.

Castor Oil—Is steady. *Belgian*, first pressing, spot, £25 to £26 per ton; Feb.-March, £24 10s., second pressing, spot; £24 per ton ex wharf. Hull manufactured, 24s. to 25s. per cwt. in barrels, 2¾d. to 2⅞d. per lb. in cases *f.o.r.* or *f.o.b.* steamer Hull. *London* pressed, 25s. per cwt. in barrels. *French*, 25s. to 26s. per cwt.

Cloves.—Privately. *Zanzibar* dull, and tendency rather downwards. March-May delivery nominally 3 7/32d., and April-June 3¼d. At auction 100 bales *Zanzibar* sold at 3⅝d. Of 46 cases *Penang*, 10 cases sold without reserve, ordinary dark part headless at 3¾d., the remainder fair, bought in at 7½d.

Coal Tar Distillation Products.—*Toluol*: Commercial 1s. to 1s. 1d. per gallon; pure 1s. 3d. to 1s. 5d. per lb. *Benzole*: 50 per cent, 9d. per gallon; 90 per cent., 8½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 6d. per gallon; 90 per cent. at 160° C., 1s. 3d.; and 90 per cent. at 190° C., 1s. 3d. per gallon. *Pitch*: 24s. 6d. per ton, *f.o.b.* *Tar*: Refined 12s. per barrel, 2d. per gallon; crude 12s. per barrel, 2d. per gallon.

Cocaine.—Makers appear to be firm at 10s. 9d. to 11s. per oz. for the best brands of the *Hydrochlorate*. There are, however, sellers from second hand below maker's price.

Codeia—Continues in good demand, makers' price remaining unchanged at 12s. 6d. per oz. for the *pure* and 1s. per oz. less for the *salts*.

Cod-Liver Oil—Is weaker, and some brands of 1898 non-freezing oil are quoted as low as 62s. 6d. per barrel in tin-lined barrels of 25 gallons.

Cream of Tartar.—First white *crystals* are quoted 73s. per cwt. on the spot; *powder*, 75s. to 77s. per cwt., according to quality.

Essential Oils—Have been very quiet, and business done has been quite unimportant.

Galls.—*China* are quoted higher for arrival at 52s. 6d. to 53s. per cwt. *c.i.f.*, for usual shape. *Japan*, 50s. per cwt. *c.i.f.* *Persian* are firm with some business done in Blues at full prices; Green and White are in small supply, which renders business difficult; for *Smyrna* there is some inquiry, but no business of importance has been reported in same.

Ginger.—*Cochin* continues dull, 35 bags washed rough bought in; 47 cases cut also bought in; good bold A at 86s.; B at 56s. 320 bags good limed *Japan* bought in at 20s.

Glycerin—Is quiet and practically unchanged, both for *crude* and also for the *refined* article.

Iodides.—are somewhat quiet, price remaining unchanged at 10s. 6d. per lb. for *Potass. Iodid.*, 11s. 10d. per lb. for *Sodii Iodid.*, 14s. 3d. per lb. for *Ammon. Iodid.*, 13s. 10d. per lb. for *Iodoform*, *cryst.*, *pulv.*, and *præcip.*, and 12s. per lb. for *Iodine* resublimed. *Crude Iodine* unchanged at 7½d. per oz.

Menthol—Is perhaps a shade weaker at 7s. 9d. to 8s. per lb., according to quantity, for best dry white crystals on the spot.

Mercurials—Without change at 2s. 9d. per lb. for *Calomel* and 2s. 5d. per lb. for *Corrosive Sublimate*, the other quicksilver preparations being also unaltered in price.

Morphia—Is weak and rather lower, one maker quoting same in his list 4s. 9d. per oz. for the *hydrochlorate powder*, and 4s. 11d. per oz. for the *crystal salt*; while for quantity, or larger contracts, somewhat less would probably be accepted; the reduction in price appears to be partly owing to the keen competition between the makers, and partly to the weaker position of *Opium*, caused chiefly by forced realisations on part of weak holders, combined with the apprehension that the new crop may turn out larger than was previously anticipated.

Nitrate of Soda.—Commercial, £7 12s. 6d. to £7 15s. per ton; refined, £8 to £8 2s. 6d.

Oils (Fixed) and Spirits.—*Linseed* is dull and easier, spot pipes, London, £16 12s. 6d. to £16 15s. per ton, barrels, £17 2s. 6d. Feb.-April, £17 2s. 6d., May-August, £17, for Sept.-Dec. £16 15s. has been accepted. Hull, spot and Feb.-April, naked, £15 12s. 6d., May-August, £15 10s., Sept.-Dec., £15 5s. per ton. *Rape*, quiet.

Ordinary brown, spot, £20 10s. to £20 15s. per ton; Feb.-April' £20 15s. *Refined*, spot, £22 to £22 5s. per ton. Ravison, naked, spot, and Feb.-April, £16 17s. 6d. to £17 per ton. *Cotton*, easier. London, crude, spot, £13 5s.; Feb.-April. £13 7s 6d.; May-August, £13 15s. per ton. Refined, spot, £14 15s. to £15 10s., according to make, etc. Hull, refined, naked, spot, and Feb.-April, £12 15s.; May-August, £13 7s. 6d. Crude, spot, and Feb.-April £12 15s.; May-August, £12 5s. per ton. *Olive*: Spanish, £28 to £32; Levant and Mogador, £29 to £32 per ton. *Cocoanut*: Ceylon spot, £25 10s. landed; Feb.-March, £245s. per ton, *c.i.f.* Cochin, spot, £30 10s. per ton landed; Dec. shipment, £27; Jan.-March, £26 per ton, *c.i.f. Palm*: Lagos, spot, £22 10s. per ton. *Lubricating*: Pale American spot, 5s. 6d. to 7s. per gallon. Russian, black, 4s. 9d. to 5s.; pale, 7s. to 8s. per gallon. *Turpentine*, lower, but steady again; American spot is quoted 31s. to 31s. 1½d. per cwt.; February to April, 31s. 3d.; May to June, 29s. 3d.; July to December, 24s. 3d. per cwt. *Petroleum*: Dull; Russian spot, 5⅞d. to 5¾d. per gallon; American spot, 6⅞d. to 6⅜d.; water white, 7⅜d. to 7⅝d. per gallon. *Petroleum Spirit*: American, 8d.; deodorised 8½d. per gallon.

OPIUM—Forced realisations on part of weak holders, combined with reported better prospects for the new crop, have weakened the market; prices remain, however, nominally as follows:—*Fine Druggists'*, 10s. 9d. to 11s. 6d. per lb.; fair to good seconds and manufacturing kinds, 10s. to 10s. 6d. per lb.; good to fine *soft shipping* qualities, 12s. 6d. to 13s. 6d.; seconds, 10s. 3d. to 10s. 6d. per lb. *Persian* is quoted 10s. 6d. to 11s. 6d. per lb,, according to quality, etc.

PARAFFIN WAX.—Crude, 1¾d.to 1⅞d.; refined, 2d. to 3¼d. per lb.

PHENACETIN.—Weak at 3s. 6d. to 4s. per lb., according to quantity, for both *powder* and *crystal*. *Bayer's* is still quoted 5s. 6d. per lb. and *Riedel's* 5s. 5d. per lb., in 1 lb. original bottles.

POTASH COMPOUNDS.—*Bicarbonate*: Crystals or powder is quoted 30s. to 35s. per cwt., according to make, quantity, and packing. *Bichromate*: 3½d. per lb. *Bromide*: 1s. 10½d. per lb. *Chlorate*: 3¾d. and 4d. per lb. for crystals and powder respectivcly, for spot delivery. *Iodide*: 10s. 6d. per lb. *Oxalate*: Neutral 5½d. to 5¾d. per lb. *Permanganate*: 52s. 6d. and 57s. 6d. per cwt. for large and small crystals respectively, in 1-cwt. kegs (2s. 6d. per cwt. less for ton lots). *Prussiate*: English yellow 7d. per lb., red 1s. 1d. to 1s. 2d. per lb., according to quantity and packing.

POTASH PERMANGANATE—Remains unchanged at 52s. 6d. per cwt. for small crystals, and 57s. 6d. per cwt. for large crystals, in 1 cwt. kegs. (Price was, by a slip, stated last week to be 72s. 6d. and 77s. 6d. per cwt. respectively.)

QUICKSILVER—Is firm at £8 per bottle from the importer, and £7 19s. 6d. per bottle from second hand.

QUININE—Remains *in statu quo*. Makers of the favourite German brands still quote the *Sulphate* 10½d. per oz. for 1000-oz. lots in 100-oz. tins. The agents, however, state that all orders have to be first submitted, their principals not being free sellers at above or in fact at any price. This would point to the prospect of an advance in value of the article ere long.

ROSIN—Is lower at 4s. 3d. per cwt. for spot delivery ex-wharf.

SNAKE ROOT—Has advanced in value in New York, and the article appears to be scarce. Privately there has been some inquiry, but stock on spot is apparently small. Price here is nominally 1s. 5d. per lb.

SENNA.—A good business has been done privately this week at full prices, but when the manifest of the ss. "Carthage," due here on Sunday, disclosed a further shipment of 300 bales, demand fell off appreciably. The assortment in to-day's drug auction is decidedly poor.

SODA COMPOUNDS.—*Crystals* are quoted 55s. per ton in barrels and 52s. 6d. per ton in bags, ex-ship, London. *Ash*: £5 to £5 10s. per ton, according to strength, etc. *Bicarbonate*: 97 per cent., £7 10s. to £8 per ton, while for the fully bicarbonated quality 18s. 6d. to 19s. per cwt. is asked. *Bichromate*: 2¾d. per lb. *Bromide*: 2s. 1½d. per lb. *Caustic*: White, £7 10s. per ton; 60 per cent., £6 10s. per ton. *Hyposulphite*: 6s. 6d. to 8s. 6d. per cwt., according to make, quantity, and packing. *Iodide*: 11s. 10d. per lb. *Nitrate*: commercial, £7 15s.; refined, £8 per ton.

SODA CRYSTALS—Are quoted 55s. per ton in barrels and 52s. 6d. per cwt. in bags, ex-ship London.

SPICES (VARIOUS).—*Black Pepper*: 343 bags Singapore mostly bought in fair at 5⅛d., only 20 bags gray sold at 4⅞d., 30 bags Penang sold at 4¾d., 80 bags small dusty Java bought in at 4⅞d. *White Pepper*: 200 bags Sinapore sold, middling at 8½d., good fair 8¾d., and fine at 9⅛d. to 9⅜d. *Chillies*: 10 cases Japan sold, good red at 45s., 68 bales Zanzibar bought in at 35s. to 38s. *Cassia Lignea*: 795 cases whole were bought in, good old at 54s. to 54s. 6d., and new selected at 49s., with coarse quill at 42s. 6d.; 20 bales broken sold at 33s. 6d. *Cassia Vera*: 164 bags coarse Padang Quills bought in at 40s., *Cinnamon Chips*: 7 bags Ceylon sold, chips at 3½d., quillings at 6½d. *Mace*: 6 cases Penang sold without reserve, good pale sifted at 1s. 8d., and pickings at 1s. 3d. to 1s. 4d., 22 cases Singapore pickings bought in at 1s. 5d. *Pimento*: of 376 bags only 22 bags sold at 4½d., the remainder bought in at 4½d to 4⅝d.

SULPHATE OF COPPER—Is firmer in sympathy with the advance in value of the *metal*, and is now quoted £19 5s. to £20 10s. per ton on the spot.

SULPHONAL.—Makers still quote 17s. per lb. for both *Crystals* and *Powder*, and are very firm at that, the little still available from secondhand is now offered at only a slight reduction on makers' price.

TAR.—Stockholm, 18s. 6d.; Archangel, 18s. 6d. to 19s.

TURMERIC—*Madras* has been in demand privately, and is again dearer; up to 35s. per cwt. has been paid. *China* fingers are held for 21s., and bulbs for 15s. per cwt.

As usual after a longer interval between the auctions, the offerings were exceptionally heavy. Twenty catalogues, consisting of 2227 lots, and representing almost every drug mentioned in the Pharmacopœia, had to be gone through. Taken as a whole the sales went off very well; owing, however, to a certain proportion of the goods catalogued not being ready in time, it seemed probable, at time our reporter had to leave, that the sales could not be finished without an adjournment until to-morrow. The following are the particulars, as far as it has been possible to give same, up to time of going to press:—

ALOES.—2 cases medium fairly bright *Cape* bought in at 22s. per cwt. 28 kegs good dry *Socotrine* at 75s. per cwt.

AMBERGRIS.—4 tins good grey small to bold flake were held for 85s. per oz.

ANATTO SEEDS.—24 bags fair bright held for 4d. per lb.

ANISEEDS.—30 bags good *Russian* sold at 17s. per cwt.

ASAFETIDA.—Of 176 cases offered 75 cases consisted of a new arrival from the Persian Gulf, an exceedingly nice parcel of practically pure gum. Good pinky almondy block sold at 70s. to 82s. 6d. per cwt.; good free pale almonds, 75s. to 80s. per cwt.; good greyish block, with loose almonds, 57s. 6d. to 60s. per cwt.; brown to brownish block, slightly heavy, 53s. to 65s. per cwt. Of Bombay gum common brown sandy block sold 30s. per cwt.; dark loose blocky, part very heavy, but with some good gum, 35s. per cwt.; good almondy block, slightly heavy and rather dark, 40s. to 41s. per cwt.

BALSAM COPAIBA.—5 cases of good quality sold readily at 1s. 6d. per lb.

BALSAM TOLU.—5 cases of good quality were held for 1s. 8d. per lb.

BELLADONNA ROOT.—3 bales of fair quality bought in at 45s. per cwt. 3 cwt. crushed in parcels being also taken out at 50s. per cwt.

BENZOIN.—In all some 400 cases were offered. *Siam*: of 138 cases very little sold, ideas of holders being beyond those of buyers. Of 171 cases *Sumatra* a fair proportion sold; good seconds at £10 per cwt., fair ditto, £9 10s. to £9 12s. 6d., medium, £6 to £6 5s. per cwt., low, 87s. 6d. to £5 10s. *Palembang* sold well at 45s. per cwt.—a decided advance for this scarce variety.

BIRDLIME.—7 cases sold without reserve at 3½d. per lb.

BITTER ALMONDS.—7 bags of fair quality sold at 40s. per cwt.

BUCHU LEAVES.—Good green *rounds* sold at 6d. per lb., a full price in view of the arrivals of new crop, but yellow sold cheaply at 3d. per lb. *Longs* were bought in at 7d. per lb., price being 6d.

CALUMBA ROOT.—7 bags good washed held for 40s. per cwt. 10 bags medium for 35s., and 10 bags washed pickings for 17s. 6d. per cwt.

CAMPHOR.—9 cases *Japan Refined*, each 112 lbs., in 1 oz. tablets were taken out at 1s. 4d. per lb.

CANELLA ALBA.—3 bales of fair quality were taken out at 65s. per cwt.

CARDAMOMS.—A total of 490 cases were offered, but, with the exception of the better qualities, demand was restricted by the firmness of holders. For fine qualities an advance of about 3d. lb. was paid, decorticated about 1d. to 2d. lower at 2s. 10d. to 2s. 11d. per lb. Fine bold pale *Mysores* realised 4s. 3d. to 4s. 4d. per lb; good ditto, 3s. 10d. to 3s. 11d. per lb; small to medium, 2s. 8d. to 3s. per lb.

CASCARILLA BARK.—40 bales bark and 5 barrels siftings were bought in, fair thin bark being held for 30s. per cwt.

CASHEW NUTS.—2 bags were taken out at 60s. per cwt.

CASTOR OIL.—25 cases fair seconds *Calcutta*, part sold at 3½d. per lb.

CASTOREUM.—2 packages sold without reserve at 70s. and 80s. per lb. respectively.

CANTHARIDES.—2 cases good *Russian* sold at 1s. 8d. per lb.

CHIRETTA.—Of 4 bales, 1 bale sold at 6d. per lb., the remainder being held for 6d. to 7d. per lb.

CINCHONA BARK.—85 cases *Java* quills bought in at 6d. per lb.; 4 cases bright red chips *ICC* damaged realising 1s. 3d. per lb.; 40 bales *Crown Bark* sold readily 6⅛d. down to 4¼d. per lb.; 4 bales being bought in nominally at 9d. per lb. 72 bales *Yellow Bark*, part sold at 6½d. to 7d. per lb., balance being taken out at 6d. to 10d. per lb. 21 cases *Red Bark* were held for 1s. 6d. up to 4s. per lb.

COCA LEAVES —1 bale fair *Truxillo* held for 9d. per lb.

COCULUS INDICUS.—64 bags of good quality part sold at 8s. 6d. per cwt.

CROTON SEED.—3 robbins and 55 bags, part sold at 55s. per cwt. for dull; fair bright quality being bought in at 70s. per cwt.

CUBEBS.—27 bags part sold at 23s. per cwt., remainder being bought in at 30s.

DILL SEED.—38 bags good pale held for 12s. per cwt., and 50 bales for 13s. per cwt.

DRAGON S BLOOD.—One small case of good bright, but not fine lump, generally valued at £12, sold with strong competition at £16 per cwt. showing the hunger which exists for the better qualities: fair bright lump sold relatively cheaply at £11 10s. per cwt.; common bricky slabs sold, without reserve, at £5 5s. per cwt. For a fairly bright but damp parcel of lump £12 was bid, but £13 was importer's idea of value.

DRIED TURTLE.—2 cases sold at 3s. 6d. per lb.

ELATERIUM.—5 boxes sold without roserve at 6d. and 7d. per oz.

ERGOT OF RYE.—21 bags were bought in, 2s. 9d. to 2s. 10d. per lb. being price required for good new sound *Spanish*, and 1s. 4d. per lb. for old weevily ditto. Another lot of good sound *Spanish* was held for 2s. per lb., weevily *Russian* for 1s. 3d. per lb.

ESSENTIAL OILS —6 cases *Peppermint H.G.H.* were bought in at 5s. 3d. per lb. 1 case good China *Star Aniseed Oil* at 6s. per lb. 3 cases *Essence White Thyme* at 3s. per lb. 10 cases *Faulding's Oil Eucalyptus* at 2s. per lb. *Ylang-Ylang*: 85 bottles sold at 2s. 3d. to 2s. 4d. per oz., subject to approval. 1 case *Dodge and Olcott's Bay Oil* held for 10s. per lb. 1 case *D. and O.'s Oil Wintergreen* for 5s. per lb. 1 case *Cedarwood Oil* bought in at 1s. per lb. 2 cases *D. and O.'s Clove Oil* at 2s. 9d. per lb. 38 cases *Cinnamon Oil* held for 3½d. per oz. *Essence of Lemon*: 2 cases held for 2s. 9d. per lb. 6 cases *Battaglini's* for 3s. 6d. 3 cases *Pasquale's* for 3s. 3d. per lb. 1 case *Essence of Bergamot* bought in at 10s. per lb. 11 ases *Citronella Oil* held for 1s. 2d. per lb. 2 pots *Sandalwood Oil* sold without reserve at 1¾d. per oz. 50 cases *Lemongrass Oil* were held for 2⅞d. per oz. 2 cases *Oil of Neroli* sold at 2s. 3d. per oz.

EUCALYPTUS EXTRACT.—2 cases sold without reserve at 1s. 7d. per lb.

GAMBOGE —Good bright pipe, slightly soft, held for £8 5s. per cwt.; pickings sold at £6 5s. per cwt.

GENTIAN ROOT.—53 bales of good quality held for 17s. to 17s. 6d. per cwt.; 2 bales, fair but rather chumpy, sold cheaply without reserve at 14s. 6d. per cwt.

GUAZA (CANNABIS INDICUS).—1 case of old import was taken out at the extravagant price of 10d. per lb. 70 bundles fair tops were held for 7d. per lb.

GUM AMMONIAC.—Of 32 packages part sold at 44s. per cwt. for fair pale, part block, down to 35s. per cwt. for dark, with some good dark, was held for 22s. 6d. per cwt., and pale block for 37s. 6d.

GUM ARABIC.—8 cases fair but slightly dark grain partly sold at £6 12s. 6d. per cwt. 20 serons sort part sold at 80s. per cwt., and 2 cases picked gum at £7 per cwt.

GUM GUAIACUM.—1 barrel imported via New York, sold at 1s. 8d. per lb.

GUM KINO.—2 cases *East Indian* were taken out at 7s. per lb., 11 packages genuine being held for 10s. per lb.

GUM MASTIC.—5 cases good pale bought in at 2s. per lb.

GUM MYRRH.—3 cases picked gum sold at 90s. per cwt., good pale at 64s. to 65s., good pale siftings were held for 45s., dark and dusty sorts for 30s. per cwt.

GUM OLIBANUM.—20 cases picked gum and 4 cases pea size were bought in, prices required being 60s. per cwt. for good pale and 32s. to 33s. 6d. per cwt. for dark picked and good siftings.

HONEY.—35 bags *Jamaica* sold at 23s. down to 20s. 6d. per cwt., the latter price being subject to approval.

IPECACUANHA—Was in active demand, and 41 bales *Rio* sold at an advance, with good competition at 9s. 6d. to 9s. 8d. per lb., the demand seeming to come from American buyers. *Carthagena* also sold readily, although at rather easier rates, 37 bales realising 6s. 2d. to 6s. 5d. per lb.

JALAP.—14 bales fair *Vera Cruz* mixed with *Tampico* were held for 8d. per lb.

JUNIPER BERRIES.—40 bags of good quality were held for 9s. per cwt.

KAMALA.—6 cases of good quality were held for 6d. per lb.

KOLA NUTS.—Fair to good *West Indian* sold at 4d. to 5d. per lb. 10 bags cut *African* being held for 2½d. per lb.

MUSK SEEDS.—2 bags of fair quality were bought in at 1s. per lb.

NUX VOMICA.—30 bags good bold bright, but rather thin beans sold at 10s. 3d. per cwt.

ORANGE PEEL.—Of 11 cases fair new thin cut, 1 case sold previously, balance being held for 7½d. per lb., a bid of 6½d. per lb. being declined.

ORRIS ROOT.—3 bags *Verona* sold without reserve at 22s. per cwt.

RHATANIA ROOT.—6 bales taken out at 7d. per lb.

RHUBARB.—17 cases good flat *high dried* sold at 10d. per lb., bold ditto, but of poor colour, being held for 11d., and medium, of better colour, for 10d. per lb.; rough horny round ditto, with very little colour, for 5d. to 5½d. per lb., a bid of 4d. per lb. being refused. Dull-coated round *Canton* sold at 11d. per lb., small ditto at 1s., pickings at 9d.; medium round *Canton* was held for 1s. 3d. per lb., flat ditto for 1s. 3d., pickings for 1s. 1d. per lb. Small round *Shensi*, part trimming root, was held for 2s. 9d. per lb.; very bold ditto, pinky and grey fracture, for 2s. 8d. per lb.; rather loose flat ditto, fair colour, for 2s. 3d. per lb.

ROSE OIL.—1 pot was held for 2½d. per oz.

SARSAPARILLA.—25 bales fair *Jamaica* sold freely at 1s. 7d. per lb. for 1*CCD* down to 1s. 3d. per lb. for 3*CSD*. 7 bales *Lima* part sold at 1s. to 1s. 1d. for 1 to 2*CCD*. 1 seron *Honduras* was held for 1s. 5d. per lb., 10 bales fair *Mexican* for 6½d. per lb., and 3 bales red and grey *native Jamaica* for 1s. 5d. per lb.

SENNA.—Of *Tinnivelly* some second hand parcels of good bold green quality, which were bought some time back at 5d. per lb., resold at from 6d. to 7d. per lb. Of the first-hand parcels quality was very low, but realised full prices, from 2d. to 3d. per lb., a very firm market. *Alexandrian*: The old parcels offered so frequently without finding buyers were pushed for sale, and a few lots found buyers at 2d. per lb. for sorts. *Pods*: 2 bales sold at 4d.—a cheap price.

SENEKA ROOT.—4 bales of fair quality were bought in at 1s. 3d. per lb.

SOY.—20 casks *China* taken out at 1s. 3d. per gallon.

STAR ANISEED.—1 case of good quality, sold at £6 10s. per cwt.

STICKLAC.—One case fair quality held for 45s. per cwt.

SUGAR OF MILK.—1 barrel powder, "catalogued as "grease damaged," sold cheaply at 36s. per cwt.

SULPHATE OF QUININE.—3 cases, each 1000 ozs. in 100-oz. tins, of the Amsterdam factory's make were held for 10½d. per oz. 2 cases *B. and S.* for 10¾d. per oz., and 20 cases *Imperial* brand at 10¼d. per oz.

TAMARINDS.—22 barrels fair *West Indian* held at 12s. 6d. per cwt.

TONQUIN BEANS.—2 cases foxy black *Paras* were held for 1s. per lb.

TURMERIC.—13 bags *China* taken out at 15s. per cwt.

VERMILION.—10 cases *China* held for 2s. per lb.

WAX.—73 pockets *Madagascar* part sold at £6 to £6 2s. 6d. per cwt., 10 cases *Italian* held for £6 10s., 7 packages *Jamaica* sold at £7 2s. 6d. to £7 5s., 50 cases fair *Japan* were held for 31s. per cwt.

Liverpool Market Report.

JANUARY 18, 1899.

AMMONIA SULPHATE—Scarce and dearer; £10 12s. 6d. per ton.

BEESWAX.—15 bales of Gambia sold at £6 7s. 6d. per cwt.

BORAX—Continues firm at £16 to £17 per ton.

CANARYSEED.—In the absence of sales upon which to base prices Turkish seed is nominal at 28s. per 464 lbs.

COPPER SULPHATE—Has advanced to £19 10s. per ton on the spot and £20 in February.

COPPERAS.—Lancashire, 39s. per ton; Welsh, 37s.

CREAM OF TARTAR—Continues steady at 72s. to 75s. per cwt.

HONEY.—Pile II. Chilian has been selling at 23s. per cwt., and 50 barrels of Peruvian went for 18s. per cwt.

LINSEED—Is very firm in price, and holders expect higher rates. The sales reported are 100 ton 4 per cent. Calcutta at 38s. 6d. per 416 lbs., Dec.-Jan. shipment; 200 tons ditto 37s. 6d., Jan.-Feb.; 100 bags Turkish 42s. per 416 lbs.; and Bombay at 42s. to 43s.

OILS (FIXED) AND SPIRITS.—*Castor* has been very brisk, and the demand continues good; both Calcutta and French have risen in price, Calcutta to 3⅛d. per lb. on the spot, and French to 3d. 2250 cases of Calcutta for delivery between January and August sold at 3d. per lb; 10 tons of French sold at 2⅞d. early in the week, later 20 tons sold for £23 10s. per ton *f.o.b.* Marseilles, and since that 200 tons for shipment between January and June have sold *f.o.b.* Marseilles at £23 per ton. *Olive* gives indications of higher rates, sales have been made here of Seville at £29 10s. per ton, and Malaga at £30. *Linseed* has risen to 18s. 6d. and 19s. per cwt. in export casks, and is firm. *Cottonseed* is quiet at 15s. 6d. to 16s. per cwt. *Spirits of Turpentine* have dropped to 32s. per cwt., and are quiet.

Calendar for the Week.

Sunday, January 22. 3 after Epip. Sun rises 7.55; sets 4.29.

Monday, January 23. Sun rises 7.54; sets 4.31.

Tuesday, January 24. Sun rises 7.53; sets 4.33.

MIDLAND PHARMACEUTICAL ASSOCIATION, Mason University College, Birmingham, at 8.30 p.m.—A discussion on the new B. P. will be opened by F. H. Alcock.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Prof. E. Ray Lankester will deliver the second lecture on "The Morphology of the Mollusca."

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—"The Development of Gelatino-chloride Papers," by John Sterry.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY, Montgomery Hall, Surrey Street, at 8 p.m.—Lantern lecture on "Five European Capitals; or from Berlin to Buda-Pest," by W. Lamond Howie.

Wednesday, January 25. Sun rises, 7.51; sets, 4.34.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 a.m.—Mr. W. Makepeace Lock will read a paper on "The Profession of Pharmacy."

NOTTINGHAM AND NOTTS. CHEMISTS' ASSOCIATION, Mechanics' Lecture Hall, at 8 p.m.—Mr. Howie will repeat the lecture on "Five European Capitals," delivered the previous night at Sheffield.

WESTERN CHEMISTS' ASSOCIATION, Westbourne Restaurant, Craven Road, Paddington, W.—Musical Social Evening.

Thursday, January 26. Sun rises 7.50; sets 4.36.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—Musical Social Evening.

Friday, January 27. Sun rises 7.48; sets 4.38.

ABERDEEN JUNIOR CHEMISTS' ASSOCIATION, North Silver Street Hall, at 9.30 p.m.—Magazine Evening. Editor, Mr. M. May.

IRISH PHARMACISTS' ASSISTANTS' ASSOCIATION, 67, Lower Mount Street, Dublin.—Lantern Lecture on "Popular Artists of the Day."

Saturday, January 28. Sun rises 7.47; sets 4.40.

Advertisements.

(Received too late for Classification).

APPRENTICE.—Wanted to apprentice a well-educated youth to a good family chemist in the western suburbs (London) where not more than one assistant is kept. In-doors. Sunday at home. Full particulars of business done and terms, J. B., 2, Clermont Ter., Preston, Brighton.

ENGAGEMENT wanted as LOCUM or MANAGER. 35 years. Good dispenser and counterman. Qualified. FELIX, 2, Princes St., Hanover Sq., W.

MANAGERSHIP wanted. Pharmaceutical Chemist, 30, City, West-end, and foreign experience, desires MANAGERSHIP or responsible position. Highest references. PHARMACIST, 66, Solent Rd., W. Hampstead, N.W.

LADY PHARMACIST wanted, qualified, to superintend in the packing department, handling of preparations containing poisons. Applicants will please state age, experience, and salary required to POISON, care of Messrs. Street & Co., 30, Cornhill, E.C.

EXCHANGE.

Prepaid Notices not exceeding thirty words are inserted at a fee o Sixpence, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, count as one word. The fee for use of Serle Street address is Sixpence. All communications should reach "PHARMACEUTICAL JOURNAL" Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 10 a.m. on Thursdays.

OFFERED.

Etherised Lavender Water with otto, guaranteed exquisite fragrance, triple strength, 2s.—Alldridge, 11, Esher Street, Westminster, S.W.

Magic Lanterns, second-hand; triples and biunials: oxyhydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s. —Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Robert H. Clark's Specialties.—Lantern, with 4-in. condensers and 3 wick lamps, 17s. 6d.; with 4 wick lamps, 18s. 6d. Slides, sale or hire, Conquest of Soudan, Spanish-American War. Catalogue free.—Robt. H. Clark, Royston, Herts.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed. —F. W. Franklin, Exchange Buildings, Birmingham.

Optimus Saturator, 2 jets, for biunial lantern, 40s.—W. Charles, Duns, N.B.

Two gross assorted Camph. Ball Boxes; quantity stiff brown Cardboard Boxes, plain and divisioned; wide-mouthed Bottles; samples of all half cost.—Hill, 2, Chart Rise, Reigate.

Overstocked, under cost to clear. Eyeshades, celluloid, flesh, lined green, rights, lefts, 8 dozen at 2s. 3d. Tooth-stopping penny squares, wrapped pink tissue, 10 gross at 2s. 3d. Any, post free, cash. Saleable Patents Wanted.—Warnes, Chemist, 333, Gray's Inn Road, W.C.

Kramerine, a superior liquid dentifrice for cleaning the teeth and imparting an agreeable freshness to the mouth, with directions, 2s. 6d.—Alldridge, 11, Esher Street, Westminster, S.W.

Overstocked.—Twelve doz. Tetlow's Swansdown Powder, 6d., 3s. doz.; 3 doz. 1s. Gossamer Powder, 6s. doz.; 3 doz. 1s. Tressolia, 7s. 6d. doz., 2s. 6d. size 20s. doz.—Delves (Ltd.), 310, Stretford Road, Manchester.

For Sale.—Good Microscope; six objectives, coarse and fine adjustment, condenser, and other usual accessories. In mahogany case; scarcely used. Cost £7 10s.; accept £5 10s.—Kirkpatrick, Chemist, Taunton.

Two pear-shaped Carboys, 38 inches high, capacity four gallons, cut glass stoppers, and stands; by Treble. Offers, or £7 10s. for Carboys, together with microscope above.—Kirkpatrick, Chemist, Taunton.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

'Pharmaceutical Journal.'—Index to Volume 4 of New Series. Sixpence each will be given for clean copies.—"Index," 'Pharmaceutical Journal' Office' 5, Serle Street, W.C.

Camwal Shares and Idris Preference. Say lowest price.—Thornley, Ilfracombe.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Alexander, Ashford, Bambrough, Barrett, Bartlett, Bowden, Browne, Carter, Chalmers, Cocking, Darwin, Davis, Dowzard, Elliman, Ellis, Ellul, Faraday, Ferrall, Fielding, Francis, Frith, Fromms, Gamble, Garforth, Gifford, Gilderdale, Grier, Hamer, Henshaw, Hill, Hogg, Hudson, Hughes, Katz, Kinton, Lothian, Marsden, Mellor, Merson, Mitchell, Newbigin, Parke, Remington, Reynolds, Roberts, Spooner, Stuart, Sutton, Thomas, Tregellas, Walton, Warren, Watkins, Wormald, Wynne.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

THE NEXT MEETING of the School of Pharmacy Students' Association will be held this evening (Friday, January 27), at 5 o'clock precisely, when Mr. E. M. Chapman (the Burroughs Scholar) will read a paper on "Photography and the Chief Chemical Reactions Relating Thereto." The members should find the paper both interesting and useful, considering how much photography is taken up nowadays as a hobby by almost everyone. Major students will find it especially useful, as it is one of the subjects in the examination syllabus. The paper will doubtless have another interest, and that is its practical importance from a business point of view. Pharmacists cannot afford to be ignorant of this important "side-line," for how often do advertisements for assistants contain the words, "knowledge of photography essential"? Then there is another noteworthy point, and that is its importance from a scientific aspect; indeed, the far-reaching effect of photography in all recent scientific work can hardly be over-estimated. Its application in photo-micrography alone is a splendid instance of its value.

THE MEETING held last Friday was a very successful one; the papers were good, the attendance was large, and there was not lacking a healthy spirit of criticism; which facts all augur well for the success of the present session. One member, who is evidently a deep-thinker, understood Mr. Wallis to say that some precautions he was advising were to keep away mice, so he, contemplating the awful destruction of a not unimportant race of animate beings, and the prejudicial effect the want of employment would have on the feline race, strongly recommended the aforesaid mice to learn the official doses before partaking of such delicacies as compose the material found in materia medica cabinets. Mr. Wallis afterwards explained, however, that he said "mites," not "mice," but that is a mere detail, and the fact still remains that there is at least one student at the School who is far-seeing and reflective.

THE ANNUAL DINNER OF THE SCHOOL is to take place on Wednesday, February 22, at the Holborn Restaurant. The Dean, Professor Collie, has promised to take the chair, and it is hoped that there will be a representative gathering of past and present students, together with all well-wishers of the School of Pharmacy. The Honorary Secretary of the Dinner Committee, Mr. F. A. Upsher Smith, 17, Bloomsbury Square, W.C., will be glad to send tickets (price five shillings each) to any who may not have received notice of the dinner by the end of the present week. Pains have been taken to choose a date that will not clash with other pharmaceutical meetings, and the presence of every old Squareman living within a reasonable distance of the metropolis will be greatly appreciated by their successors.

THE SECRETARIES of the School of Pharmacy Students' Association direct the attention of members to the fact that the addresses of old students and other non-resident members are not all in the books; they would be glad if those who wish to receive the usual notices of meetings would communicate their addresses to them. A notice to this effect appeared in a former issue (December 17, 1898), but is again inserted for the benefit of those members who might otherwise think they were being neglected.

FOOTBALL.—The match played at Shepherd's Bush on Saturday was with the Old Georgians, a team new to pharmaceutical footballers. From this brief account it may be seen how well the game was contested, although the home team was weakened by the absence of Durbin from the half-back line. Winning the toss, the P.F.C. kicked off about 3.15, a strong wind blowing across the field slightly in their favour. During the whole of the first half of the game the ball was kept well in the enemy's quarters, several good shots being put in by the Square forwards, but without avail. Half-time was called without a single goal having been scored. The wind had by this time increased to half a gale, and was blowing almost directly in the faces of the pharmaceuticals, hence it was plain that they would require all their united efforts to keep their opponents from scoring. Shortly after re-starting the ball the Georgians made a rush, and succeeded in winning a goal, but it was the only one they were allowed, although the Square goal-keeper was kept very busy, and proved himself quite equal to the occasion. A good attempt was made by Warren and the captain (Wild) to equalise; between them they carried the ball from the quarter line to the enemy's goal, but were prevented from scoring. This was the last great effort, and the match ended in a victory for the Georgians by the small margin of one goal. Buckingham acted as referee. The next match (on Saturday) is against the Harlesden club.

IRISH NEWS.

DUBLIN CHEMISTS' FEDERATION.—At Dublin, on the 18th inst., the quarterly general meeting of this Association was held at the Pharmaceutical Society's House, 67, Lower Mount Street, the President, Dr. J. A. Walsh, in the chair.—The minutes of the last general meeting were read and confirmed.—Mr. Samuel P. Boyd's acceptance of the Vice-Presidency of the Association was learned with much satisfaction.—A communication was received from a member of the trade in reference to a circular issued by the Association, in which the writer stated that the Chemists' Federation appeared to be practically a branch of the P.A.T.A. He had been following the correspondence and meetings relative to that organisation for years, and saw nothing in it but an organisation for the benefit of the manufacturers of proprietary medicines by enabling them (the manufacturers) to get a better wholesale price. If a society were formed with a view of keeping up the standard of high-class pharmacy, he would gladly join, but there was no such indication in the code of rules drawn up by the Federation.—The letter was discussed at some length and a reply was drafted.—The President reported the result of his and Mr. Hardy's visit to the representatives of Sir James Murray. The matter was left over for the present.—Mr. Brown having given an account of the numerical strength of the Association the President remarked that chemists had it in their own hands to redress existing grievances. Legislation might, no doubt, do a lot of good, but until they all united in a trade federation and combined for their mutual welfare they could never hope to effect any substantial reform.—Mr. Bernard, referring to the statement which commonly appears on patent medicine literature "to be had at Blank and Co., and at all respectable chemists," suggested that a label be affixed by the retail vendor of patent medicines to the effect that the preparation was sold as a sealed packet, and without any knowledge of its worth or otherwise. If that were done generally the "patent" medicine trade, he thought, would soon be broken down.—The following proposed resolutions were then handed in for discussion at the next meeting:—

> That the attention of the Local Government Board and the governors of the various hospitals be called to the growing evil of supplying medicine to persons well able to pay for the same, and to the fact that no prosecutions have ever been instituted in connection, in consequence of which we suffer as ratepayers as well as chemists.
>
> That the members of the Dublin Chemists' Federation adopt a label for attachment to all "patent" medicines sold in their establishments, to the effect that the contents are sold as sealed packets and without any guarantee by the vendor.

Other matters having been discussed. in consequence of the lateness of the hour, the discussion on "Book-keeping for Chemists" was of necessity postponed until the next meeting, and the proceedings then terminated.

MR HILL'S DRUG AND CHEMICAL STORE, Belfast, has been the scene of a fire, the cause of which is unknown. Aid promptly rendered by the brigade kept the fire within bounds. The damage is not extensive.

THE DISPENSARY OFFICERS AT CORK have passed a resolution condemning the present mode of filling vacancies in dispensaries, and urging that future appointments be made by open competitive examination.

MR. JOHN S. ANDERSON, chemist, Lisburn, while recently inspecting his new premises in course of erection on the Belfast Road, accidently stumbled on the scaffolding as he was turning round and fell a considerable distance, breaking three of his ribs and badly injuring his nervous system. He is progressing favourably.

MR. THOMAS W. ROBINSON, M.P.S.I., director of Messrs. Hayes, Conyngham and Robinson, Ltd., chemists, Dublin, has been returned, at the head of a heavy poll, as a County Councillor for the East Ward of Kingstown.

The Cork Chemical and Drug Company, Limited, have been appointed medicine contractors to the local fever hospital.

Mr. Joseph Smith, Longford, who was recently prosecuted under the Pharmacy Act for illegally selling vermin paste, and fined £5, has entered an appeal in the Superior Courts against the decision already given. The case will come on for hearing in the course of a few days at the local quarter sessions.

We have been Asked to Mention that at the recent examination at Dublin for the Licence of the Pharmaceutical Society of Ireland, Dr. Meredith R. Whitla, M.P.S.I., one of the examiners, was unavoidably detained in Monaghan, through important professional engagements, and was obliged at the last moment to avail himself of the services of Mr. James Guiler, M.P.S.I., as a substitute.

Messrs. G. D. Beggs and R. Keating Clay, Vice-President of and Solicitor respectively to the Pharmaceutical Society of Ireland, have been elected members of the County Council for Dalkey, County Dublin.

Sir Henry Cochrane, director of Thacker and Hoffe's drug and chemical concern, Dublin, has successfully contested the Bray division of the new local government body.

Mr. W. J. Baxter, M.C.P.S.I., gave a public luncheon a few days ago to the past and present members of the Coleraine Town Commissioners, to mark the honour conferred upon him by electing him Chief Town Councillor two years in succession. There was a large gathering. Kindly references were made to Mr. Baxter, and his various good qualities were extolled by the guests. The entertainment was thoroughly successful.

FRENCH NEWS.

Retrospective Exhibition of Surgical Instruments and Apparatus.—To each class of the contemporary Exposition of 1900 will be annexed an "Exposition Rétrospective," with the idea of bringing together all objects of ancient fabrication relating to the respective class. For Class 16, which treats of surgical instruments and apparatus, the Exhibition Committee, presided over by Dr. P. Berger, is prepared to receive applications for admission, and requests all collectors of ancient surgical instruments, etc., all manufacturers, and all curators of museums, schools, and faculties, as well as all who have the care of instruments in French hospitals, in short, all who possess the necessary implements entering into this category, to respond to their demand for curios. It is earnestly hoped that all who can, will associate themselves with the Committee, to form, upon the occasion of this great industrial manifestation, a truly unique collection, which will have a real scientific and historic interest.

The Instruments intended to be comprised at this exhibition are those of surgery generally; apparatus for hernia and orthopædia; instruments for dentistry, ophthalmology, otology, laryngology and rhinology, also obstetric and gynæcologic instruments. In addition, apparatus employed in anatomic and histologic studies, as well as instruments of precision. Drawings or designs of ancient instruments will equally be acceptable, but they must be the "originals." The exhibition being a personal one, the instruments will not be mixed, but each particular collection will be allotted space apart, according to its importance, and will bear the name of the exhibitor. The Administration undertakes, in certain cases, to defray the expenses of packing, transport, etc. A comprehensive catalogue relating to the exhibits in the palace, their nature and locality, will be issued, and the names of exhibitors in connection with their exhibits will be contained therein. Commemorative diplomas, signed by the Minister of Commerce, of industry, of posts and telegraphs, and by the General Commissioner, will be awarded to such as assist in this retrospective exhibition, and tickets of gratuitous entry delivered to such of the exhibitors as the importance of their exhibits merits. The Administration, moreover, states that under no circumstanes will an exhibit be allowed to be reproduced without the combined consent of the exhibitor and the directors of the exhibition

The Dangers of Thyroid Preparations.—Monsieur François Frank, having closely studied the effects of thyroid gland preparations, delivers himself of a none too glowing opinion of its value. After reviewing the successes and non-successes of the gland in cases of myxœdema and of obesity, he affirms that the danger attending the use of it, even in moderate doses with some patients, is such as to make it imperative to class it amongst the category of dangerous remedies; and some legislation is requisite to check the indiscriminate sale of it to the public. Dr. Potain fully endorses this opinion, adding that to his own personal knowledge grave results have followed the use of this gland, the effects of which have been long in disappearing. He thinks that the substance should not be supplied unless prescribed by a physician, under whose personal supervision alone it should be taken.

SCOTTISH NEWS.

Edinburgh Chemists' Ball.—The sixteenth annual ball, under the auspices of the District Chemists' Trade Association, took place in the Freemason's Hall, George Street, on Thursday, January 19. About sixty couples spent a very pleasant evening to the music of Mr. Gilchrist's band, the duties of M.C.s, being efficiently performed by Messrs. Rowland and Jardine. An excellent supper was served by Messrs. Hunter and Glover at midnight. Mr. D. McLaren presided in one supper room, and Mr. J. Bowman in the other, Messrs. Boa and Jardine acting as croupiers. The toast "Success to the Edinburgh Chemists' Ball" was proposed by Messrs. McLaren and Rutherford Hill, and responded to by Messrs. Jardine and Boa. The arrangements were efficiently carried out under the direction of Mr. Peter Boa, convener of the Committee.

Visit to Gas-Works.—On Thursday last the students of the Glasgow and West of Scotland School of Pharmacy, with the Principal (Mr. Barrie) visited the Glasgow Corporation Gas-works at Dawsholm. They were conducted over the works by the chief chemist, who—in an able manner—explained the many points of interest in gas manufacture. The long fireclay retorts, in which the coal is destructively distilled, are built on brick arches in sets of eight and twelve, and heated to 2000° F. on Siemens' principle, viz., by the combustion with hot air of a mixture of carbon monoxide and hydrogen obtained by passing a regulated supply of air and steam through red-hot coke fires. The gaseous products of the coal are passed through a long hydraulic main, in which a large proportion of tarry matter condenses. The hot gas is then cooled to 60° F. by being made to pass through tall upright iron-pipe condensers—where various liquid bodies separate—and freed from ammonia afterwards by being brought into intimate contact with water, which forms the ammoniacal liquor. To free from sulphur compounds, as H_2S, the gas is passed through many beds of freshly-slaked lime and then led into the gas tanks, where it is stored until required for use. One of the most interesting points of the visit was the photometric room, where the gas is tested for its illuminating power against two standard candles. A modified Bunsen grease-spot photometer is used, and a number of experiments with it were performed for the party's benefit.

Gordon's College School of Pharmacy.—A dinner was held in the Royal Hotel, on January 20, to celebrate the first term of this school's existence and congratulate the students who were successful at the January examination. The students, to show their appreciation of the successful efforts of the Aberdeen Pharmaceutical Association to establish a school of pharmacy, invited Mr. Clarke (President) and Mr. Cruickshank (Secretary) to be their guests for the evening. Mr. Hugh E. Ellis, pharmaceutical chemist (the head teacher), occupied the chair. Mr. Watt, demonstrator, acted as croupier. Covers having been removed, loyal toasts were pledged, including that of "The Pharmaceutical Society." Mr. Ellis, in proposing "Our Guests," referred to the great indebtedness of the students assembled to the senior Society. How they had always endeavoured to further the interests of their assistants and apprentices. Mr. Clarke, in reply, gave a *résumé* of the Society's history from an educational standpoint, and their establishment now of a permanent school at Gordon's College. "The School of Pharmacy" was proposed by Mr. Cruickshank,

who referred to the splendid equipment of the school and to the fact that no expense had been spared for providing the most modern requirements. Mr. Watt, demonstrator, replied. He remarked on the success of the school after one term's work. Mr. Stewart, in proposing "Mr. Ellis," spoke of the care and attention which each individual student received. The feelings of the company were at once evinced by the hearty manner in which they received the toast. Mr. Caird, in appropriate terms, toasted "The Successful Candidates," to which Mr. Tavendale replied. He spoke highly of the school in general. Songs were given by the following gentlemen: Messrs. Cran, Caird, Fowlie, Marr, McAllan, Stewart, and Sharp; and recitations by Messrs. Mackie and Massie. Votes of thanks were proposed, to the Chairman for his kindness in presiding, the guests for their presence, and the Committee for their arrangements. The singing of "Auld Lang Syne" brought a most enjoyable evening to a close.

Glasgow School of Pharmacy.—On Monday last, the students of the above School, accompanied by their Principal, Mr. J. Lothian, visited Messrs. Harvey's, Port Dundas Distillery. The party was received and conducted over the premises by the manager, Mr. Bruce. Both malt and grain spirits are manufactured by this firm. The malting floors and drying kilns were first visited, then the buhr mills for grinding the maize were inspected. The ground maize is boiled and mixed in the mash tun with a sufficiency of malt, and the resulting wort fermented by means of yeast. This "wash" is distilled in the "patent" stills, and a very "silent" spirit of great purity is obtained about 67 o.p. and entirely free from fusel oil. For the manufacture of whiskey the "wash" prepared by fermenting pure malt wort is rectified in "pot" stills and drawn off about 50 o.p. from the third still. An inspection of the bonded stores terminated the visit which was much enjoyed by all.

ENGLISH NEWS.

Food and Drugs Act Prosecution.—At the Clerkenwell Police Court, on Tuesday, January 18, Messrs. Lewis and Burrows, Drug Stores, Limited, of Great Portland Street, were summoned by the Islington Vestry for selling on December 7, oil of eucalyptus that did not conform to the requirements of the British Pharmacopœia. Mr. Bramall, solicitor, appeared for the Islington Vestry; and Mr. R. A. Germaine defended. A bottle of the oil was purchased at 274, Seven Sisters Road, Holloway, one of the defendants' shops, 1s. 3d. being paid for 4 ozs. The usual division took place, and one sample was submitted to Dr. Teed, public analyst, who returned it as of a less specific gravity than required by the British Pharmacopœia. For the defence, it was admitted that the oil sold was not that of *Eucalyptus globulus*, the kind specified by the British Pharmacopœia, but that of *Eucalyptus amygdalina*, an oil of eucalyptus which was official in the British Pharmacopœia of 1885. It was argued by Mr. Germaine that the oil was not sold for the purpose of compounding, but as a deodoriser; in other words, that it was sold as an article of commerce, as distinct from a drug to be used in compounding a medicine. Mr. Horace Smith said the oil sold was not that prescribed by the British Pharmacopœia as oil of eucalyptus, and he imposed a fine of 10s. and £1 1s. costs.

Gregory Powder.—At the Corsham Petty Sessions last week, Francis Barnes, chemist, of Corsham, was summoned by Mr. Sam Smith, inspector under the Food and Drugs Act, for selling two ounces of Gregory powder mixed with carbonate of magnesia instead of oxide. Mr. Bevir prosecuted on behalf of the County Council. Defendant pleaded guilty, and was fined 1s. and 4s. costs, part of the costs being remitted.

On Friday, the 20th inst., the employés of Messrs. Baiss Bros. and Co. met at the "City Arms," St. Mary Axe, for their annual dinner and smoking concert. Mr. Arnold Baiss took the chair. There were also present Mr. Sydney S. Baiss and Mr. W. A. Baiss, as also Mr. S. C. Welch (who was Vice-Chairman) and Mr. John Clarke, both of whom have been for so many years connected with the firm. After the dinner a smoking concert was held, and a very enjoyable evening was spent.

Western Chemists' Association (of London).—A very enjoyable musical and social evening was held at the Westbourne Restaurant, Paddington, on Wednesday, January 25. In the unavoidable absence of the President, Mr. J. F. Harrington, the chair was taken by Mr. Taplin, who was supported by a large company of representative pharmacists. The programme, which included overtures, songs, an instrumental trio (violin, viola, and piano), a violin solo, and a ventriloquial sketch, was much appreciated, the various items performed being heartily received, and a cordial vote of thanks was accorded to the artistes, on whose behalf Mr. A. G. Worsley responded.

Liverpool Pharmaceutical Students' Society.—A very successful supper in connection with this Society was held at the Star and Garter Hotel, Liverpool, on Thursday evening, the 19th instant. The chair was occupied by the President, Mr. R. C. Cowley, who was supported by a large attendance of the students, together with numerous friends. The programme drawn up by Messrs. Jenner and Cooke was lengthy but well chosen, and the instrumental and vocal executants of the various pieces did their part in a finished and altogether praiseworthy manner. During the evening Mr. Cowley was the recipient of a vote of thanks, proposed by Mr. A. H. Morgan, and in reply mentioned the fact that the percentage of students passed from the Liverpool School of Pharmacy came out very satisfactorily at the recent "Minor" examination, being 70 per cent. Mr. Edward Davies, F.C.S., one of the oldest and best known members of the Liverpool Chemists' Association was present during the evening, and treated the students to a pleasant speech, which was much appreciated. The artistes who contributed to the evening's enjoyment were Messrs. Bottomley, Catley, Compton, Davis, Bickerton-Hughes, Morgan, and Stevenson. An extension of time having been obtained, the proceedings did not terminate until midnight, and the general opinion was that this "Hot Pot Supper"—a peculiar North Country form of entertainment—was an innovation which bids fair to become a regular institution, judging from its first trial.

Mr. Councillor A. Sidney Campkin, J.P., has been reappointed as one of the Visiting Justices for the year to H.M. Prison at Cambridge.

Mr. T. Goode Joyce, B.Sc., who is assistant chemist in the laboratories of Messrs. Blackwell, Hayes and Spilsbury, of Birmingham, was amongst the number of successful candidates at the recent examination held by the Institute of Chemistry.

Football.—The Metropolitan College of Pharmacy F.C. and Cavendish F.C. met in a friendly match on Saturday last, at Tooting-Bec Common, the game resulting in a win for the Metros by 5 goals to 1. The match was arranged early on the Saturday afternoon and was not a previous fixture.

Suicide of a Chemist's Assistant.—On Saturday evening a chemist's assistant at Cardiff, in the employ of Mr. Hagon, committed suicide by taking prussic acid. His employer said Rodgers came to Cardiff a few months ago from Market-Rasen, Lincolnshire, and was about twenty-four years of age. He was an agnostic, but had lately become a convert to the Church. He seemed to have developed religious mania, and had been greatly perturbed over the anti-ritualistic campaign, which is being waged fiercely in the town, and has been accompanied by disorderly scenes at meetings.

Sheffield Pharmaceutical and Chemical Society.—On Tuesday, January 24, 1899, at the Montgomery Hall, Surrey Street, Sheffield, Dr. Porter in the chair, Mr. W. Lamond Howie, of London, delivered a lantern lecture, entitled "Five European Capitals: or, From Berlin to Buda-Pesth." The views shown were from photographs taken by the lecturer. Those of Berlin (Prussia) included the Victory Monument, the Tiergarten, New Parliament Houses, museums, galleries, and statues, Charlottenburg Mausoleum.—Dresden (Saxony): the Elbe Bridges, Court Theatre, picture gallery and museums, churches, Salvation Army, "the finest railway station in Europe," Dresden china, Meissen, interiors of Albert's Castle, scenery of the Elbe, the "Saxon Switzerland." Fellow passengers.—Prague (Bohemia): the museum, historical bridge, castle and churches, the Jews' cemetery, ancient tombstones and customs, the Synagogue, A.D. 830, Hebrew clock. Time, old and new. Passau: the confluence of the Ilz, the Inn and the Danube, river scenery, castles, and

villages. Linz: Austrian fellow passengers, two days on the Danube.—Vienna (Austria): the Ring Strasse, Parliament Houses, Town Hall, University, museums, theatres, statuary, and street sculpture, churches, German journals. — Buda-Pesth (Hungary): views of the Danube and city, the new Parliament Houses, fish market and natives, costumes in the Millenia Exhibition. "The Threshold of the East." "Cairo" at Berlin. Votes of thanks to the Chairman and lecturer brought to a close a most enjoyable evening.

INSTITUTE OF CHEMISTRY.—At the January examinations, 1899, the following candidates passed:—*Practical Examination for the Associateship:* Arthur Jenner Chapman, Ferdinand Edward Paul Forster, George Percy Lishman, B.Sc. (Edin.). *Intermediate Examination:* Stafford Aston, Walter Lionel Blackman, Basil Radcliffe Coysh, Henry Dixon Hewitt, Alfred Hill, Henry Wulff Kinnersley, John Rogers, Frank Shedden, B.Sc. (Lond.), Leonard Victor Wright, B.A. (Cantab.). *Final Examination for the Associateship,* in branch "A" (Mineral Chemistry): John Golding (for the Fellowship), Walter Charles Hancock, B.A. (Cantab.) (for the Fellowship), Arthur Marshall, A.C.G.I.; in branch "B" (Metallurgical Chemistry): John Imrie, Roland Cecil Wild; in branch "D" (Organic Chemistry): William Setten Gilles, A.C.G.I., Percy John Hinks, A.R.C.Sc. (Lond.), Thomas Goode Joyce, B.Sc. (Lond.); in branch "E" (the Analysis of Food and Drugs and of Water): John Francis Hutchins Gilbard (for the Fellowship), Charles Adolphus Hackman, Francis Samuel Young, M.A. (Oxon). —The examiners were Professor Percy F. Frankland, F.R.S., F.I.C., and Otto Hehner, Esq., F.I.C.

THE NEW POISON REGULATIONS are referred to by the *British Medical Journal,* which remarks that the action taken at the Special General Meeting of the Pharmaceutical Society of Great Britain has been very generally misunderstood, and in some instances misrepresented by the press. It is correctly explained that what has been done has been to exercise the power conferred upon the Society to prescribe regulations as to the keeping, dispensing, and selling of the articles which are poisons within the meaning of the Act. The regulations are quoted at length, and it is stated that the present action of the Society may fairly be regarded as evidence of improved opinion in that respect, which is in every way satisfactory so far as the interests of the public are concerned, and to the credit of the pharmaceutical body.

LINIMENT FOR MEDICINE.—On Thursday, January 19, an inquest was held at South Shields, with respect to the death of Susan A. Purvis (39), wife of Mr. Alex. Purvis, of 4, South View Terrace. It appeared from the evidence that deceased suffered from rheumatism, and for the past fortnight had been taking medicine and applying externally a liniment composed of belladonna, opium, ammonia, and camphor. On the previous Tuesday evening she went to a washstand where the liniment bottle and the medicine bottle were standing together, and, as the room was only partially lighted, she picked up in mistake for her medicine the liniment bottle, from which she swallowed a portion of the contents direct, it being her custom to drink the medicine direct from the bottle. She died the same evening from suffocation. The jury returned a verdict of "Death from misadventure."

MESSRS. BURROUGHS, WELLCOME AND CO. ask us to announce that they recently received from Sydney a large packet of herbs, which was put on board the "Thermopylæ." It seems that no advice was received in reference to it, and it is not known from whom the parcel came. An attempt has been made to identify the plants, but it has not proved successful. It is probable that they were despatched for identification and investigation by a chemist or medical man who intended to write to the firm at the same time but failed to do so. As the firm is very anxious to get to the bottom of this matter it is requested that the sender will communicate, either direct or through the Journal, as soon as possible.

THE EIGHTEENTH JUNIOR PHARMACY BALL will be held at the Portman Rooms, Baker Street, W., on Wednesday, February 8. The President of the Pharmaceutical Society, Mr. Walter Hill, the late President, Mr. Michael Carteighe, Mr. A. L. Savory, and other prominent pharmacists are expected to be present. Mr. Mortlake Mann's Orchestral Band will provide music, and the first dance will commence precisely at 9 p.m. Tickets, including supper and light refreshment during the evening (7s. 6d. each), may be obtained from the Hon. Sec., W. J. Henson, Beulah Hill, S.E., or from any of the stewards.

POISONED BY CHLORODYNE.—An inquest was held on Monday afternoon at Edmonton in regard to the death of Frank Hudson (3), whose parents live at 47, St. Joseph's Road. On the previous Thursday the boy was left upstairs with a younger child in a room where a bottle of chlorodyne was standing on the mantelpiece. Some time later he complained of his head aching. The mother noticed a smell of chlorodyne in his breath, and fetching the bottle found that nearly all of its contents were gone. The child shortly afterwards died.—A verdict of "Accidental poisoning" was returned.

OVERDOSE OF CAMPHOR.—At an inquest held at Rotherham, on January 18, touching the death of John Mays (40), brewer's traveller, it was stated that he had taken some spirits of camphor with rum for a pain in the stomach. A bottle was produced, and was stated to contain laudanum, chloroform, camphor, and some aromatic. The bottle bore the mark of "Boots, Limited."—The jury returned a verdict that death was due to syncope brought on by an overdose of camphor taken in alcohol.

CRICKET.—The employees of Willows, Francis, Butler, and Thompson, of 40, Aldersgate Street, have formed a cricket club with ground at Elm Farm, Walthamstow.

MIDLAND PHARMACEUTICAL ASSOCIATION.—At a meeting of this Association, held at Mason College, Birmingham, on Tuesday, January 24, Mr. F. H. Alcock opened a discussion upon "The New Pharmacopœia." Mr. Jeffrey Poole (President) occupied the chair. Mr. Alcock dealt with the physical tests, nomenclature, posology, manufacture of chemicals, and the galenicals.—A discussion followed, in which Messrs. J. Barclay, Bayley, Poole, and Brunt took part.—A vote of thanks to Mr. Alcock concluded the business.

"THE RESULT OF CARELESSNESS" is the heading to a paragraph which appeared in the *Sheffield Daily Telegraph* on Friday, January 20, referring to a case tried at the Second Court of the Sheffield Police on January 19, in which Jesse Boot and Co., Ltd., described as chemists, Attercliffe Road, were summoned for having in their possession an unjust scale, and were ordered to pay the costs. The Local Secretary of the Pharmaceutical Society, Mr. G. Squire, at once wrote to the editor of the paper, as follows:—

> Sir,—In reference to a case reported in to-day's issue of the *Telegraph*, under Sheffield Police Courts and with the above heading, may I be allowed to say that the name of Jesse Boot and Co., Ltd., does not appear on the Register of Chemists and Druggists, as would be implied by your paragraph.
> *Haymarket.* GEO. SQUIRE,
> Local Secretary, Pharmaceutical Society of Great Britain.

The letter, however, was refused publication.

BRIGHTON PHARMACY BALL.—The annual ball of the local pharmacists took place at the Royal Pavilion on Friday, January 20. Both the Senior and Junior Societies took part, and it was under the auspices of the President, Mr. W. H. Gibson. The stewards were Messrs. A. R. Wilson, J. R. Gwatkin, J. Harris, who, with Mr. W. H. Andrews and Mr. G. Bernard Savage as joint hon. secretaries, secured every comfort for the company. The rooms engaged for the occasion were the Music Room, the North Drawing Room, the Corridor, and the King's Apartments, the last-named being the supper room. Dancing commenced at half-past eight, and was kept up until half-past two in the morning.

FREEMASONRY.—Mr. F. W. Bird, A.P.S., Swanswell Street, Coventry, son of Councillor Bird, chemist, was installed Worshipful Master of the Trinity Lodge of Freemasons (No. 254) at St. Mary's Hall, on Thursday, January 19, 1899. A banquet followed the installation. The Mayor of the city of Coventry (Dr. Webb Fowler) proposed the health of the newly made Master and prosperity to his ancient lodge, Mr. F. W. Bird is the youngest Worshipful Master of the Trinity Brethren on record.——Mr. Walter F. Noak, chemist and druggist, Berkeley, on Thursday, January 19, was installed Worshipful Master of the Royal Lodge of Faith and Friendship, No. 270, Berkeley.

CHEMISTS' ASSISTANTS' UNION.—The second smoking concert, under the auspices of C.A.U., will be held at The Horse Shoe Hotel, Tottenham Court Road, W.C., on Tuesday, January 31, 1899, the chair to be taken at 8.30 p m. by Mr. T. Edward Lescher. A good evening's amusement is anticipated, as already several noted entertainers have promised their services. Admission free.

MARKET REPORT.

The quotations here given are in all cases the lowest cash rices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

JANUARY 26.

There has been more activity this week in the Drug and Chemical Trade, the chief event having beeu the phenomenal advance in price of Ipecacuanha. There have also been two separate advances in price of Camphor, while Acid Citric is also dearer, price of Juice having advanced considerably. Quinine appears at last to be on the move, but so far little or no progress has been made in the right direction. Cocaine is firm. Sulphonal, Phenacetin, and Acetanilide steady. Iodides and Bromides without change. Quicksilver and Mercurials firm. Cascara Sagrada advancing at last. Acid Tartaric quiet. Cream of Tartar rather easier. Antipyrine unchanged. Phenazone slightly firmer. Sulphate of Ammonia rather lower. Borax and Acid Boracic steady. Opium and Morphia weak. Codeia firm. Glycerine and Cod Liver Oil without change; holders of the latter article are, however, hoping for an improvement, in consequence of the cold weather. Sulphate of Copper again dearer, in sympathy with the metal. Bismuth Salts unchanged. Castor Oil dearer. Acid Carbolic firm. The following are actual prices of articles of chief interest:—

ACETANILID—Is quiet at unchanged prices, viz., 11d. to 1s. 2d. per lb., according to quantity.

ACID CARBOLIC.—Market is very firm at 6¾d. per lb. for the best make of 35-36° *ice crystal* in 2½ cwt. drums and overcasks, the 39–40° *ice crystal* being quoted ½d. per lb. higher, and the 39–40° *detached crystals* (the B.P. quality) 8¼d. to 8½d. per lb., according to quantity and packing. It is stated that price is likely to advance in consequence of large orders being in the market, in addition to considerable quantities which have been already booked with the makers. *Crude*: 60° F., 2s. per gallon; 75° F., 2s. 4d. per gallon. *Liquid*: 95-98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon; black ditto, 9d. to 11d. per gallon, according to quantity, in 40 gallon casks.

ACID CITRIC—Is firmer, being quoted 1s. 3d. per lb. on the spot, in consequence of the advance in price of juice to £17. This afternoon it is reported that one maker has advanced his price to 1s. 4d. per lb.

AMMONIA COMPOUNDS.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to make, quantity, and packing. *Iodide*: 14s. 3d. per lb. *Muriate*: White, free from metals, 25s. 6d. to 27s. 6d. per cwt., and 30s. to 32s. 6d. per cwt. for the chemically pure small crystals. *Oxalate*: 5½d. per lb. *Sal ammoniac*: Sublimed firsts 35s., seoonds 33s. per cwt., the crushed for batteries costing 2s. per cwt. more. *Sulphate* weaker and prices rather easier. Grey prompt 24 per cent., London, £10 8s. 9d. per ton; Hull prompt £10 8s. 9d., February £10 7s. 6d.; Leith prompt £10 8s. 9d.; Beckton £10 5s., February-June £10 2s. 9d.; Beckton terms £10 5s. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb.

ANTIMONY—Has so far not shared in the general advance in the value of metals, *Regulus* being still quoted £36 10s. to £37 per ton, while *Crude* (black oxide) is rather easier at £22 per ton on the spot, and £20 10s. to £21 per ton, *c.i.f.*, for early shipment from Japan.

ANTIPYRINE KNORR—Is unchanged in price. *Phenazone* is also steadier, competing makers appearing to get tired of cutting price against the well-known "Star Brand," while the question of quality has also been raised in the case of one or more of the competing maker. Buyers who are careful as to the quality of the articles which they handle are now generally preferring the "Star" brand.

ASAFETIDA.—Present quotations are: Common, 25s. to 30s. per cwt.; medium, 40s. to 50s.; fine, 57s. 6d. to 80s. per cwt.

BISMUTH—Unchanged at 5s. 8d. per lb. for the *Carbonate B.P.* (*Oxycarbonate*), and 5s. 1d. per lb. for the *Subnitrate B.P.* (*Oxynitrate*), price of the *metal* remaining also unchanged at 5s. per lb. for the ordinary commercial quality.

BLEACHING POWDER (CHLORIDE OF LIME)—Is unchanged, English being quoted £6 per ton.

BORACIC ACID—Steady at 26s. and 28s. per cwt. for *crystals* and *powder* respectively.

BORAX—Is steady at 16s. 6d. per cwt. for *crystals*, and 17s. per cwt. for *powder*.

BROMIDES—Firm at 1s. 10½d. for *Potass. Bromid.*, 2s. 1½d. for *Sodii Bromid.*, and 2s. 2d. for *Ammon. Bromid.* *Bromine* is unchanged at 2s. 2d. per lb. in cases of 60 lbs.

BUCHU LEAVES.—Some of the yellow leaves which sold at 3d. per lb. in last sale have been resold at 4d. per lb.

CAMPHOR.—Earlier in the week the German makers advanced their price for *Refined* ½d. per lb. to 1s. 5d. per lb., and they now advise a further advance of ½d. to 1s. 6d. per lb. Yesterday the English refiners also advanced their price from 1s. 5½d. to 1s. 6d. per lb. for *Bells and Flowers* Blocks and tablets being also quoted dearer in proportion. To-day the Germans further raised their price ¾d. per lb., the English makers following with a fresh advance of 1d., to 1s. 7d. per lb. for *Bells* and *Flowers*. *Crude* is stated to be very firm, and extreme prices are quoted for arrival.

CASCARA SAGRADA.—This bark continues to be in active demand, and a good business has been done at up to 28s. 6d. per cwt. for new, and 32s. 6d. per cwt. for old.

CASTOR OIL—Strong and advancing. Belgian 1st pressing, spot, £27 10s. per ton; January-June, £26; 2nd pressing, spot, £25 10s., ex-wharf. Hull manufactured, £25 10s. to £26 5s. per ton in barrels, 2 1/16d. to 3 1/16d. per lb. in cases *f.o.r.* or *f.o.b.* steamer, Hull. London pressed, 26s. per cwt. in barrels. French, 27s. per cwt.

CAUSTIC SODA.—White 70 per cent. is quoted £7 10s. per ton, 60 per cent. £1 per ton less.

CHLORATE OF POTASH—Unchanged at 3¾d. per lb. for *crystals*, and 4d. per lb. for *powder*, spot London.

CINCHONA BARK.—At the London auctions on Tuesday the small supply of only 1909 packages of all descriptions was catalogued, against 1949 packages in the December sale. A good demand prevailed, and fully two-thirds changed hands under the hammer, the bought-in lots being mostly cleared since at rather irregular, but generally steady, prices, the average unit obtained at the last Dutch auctions, viz., 15/16d. to 1d., being fully maintained. *Ceylon*: Of 217 bales and 18 cases offered about 200 packages sold, at and since the sales, according to analysis, Succirubra, stem chips and shavings, fair to good at 2 5/8d. to 3½d.; Ledger, renewed chips at 4½d. *East Indian*: Of 1014 bales and 1 case offered about 800 packages sold, at and since the sale, red stem chips at 2⅜d.; renewed chips and shavings, ordinary to fair at 2¼d. to 2⅞d., fair broken quill at 3¾d., fair root at 2⅝d., branch at 1⅜d.; Officinalis, stem chips and shavings, fair to good at 2¾d. to 3½d., renewed ditto at 2¼d. to 4⅝d.; all other kinds, Ledger chips, common to good at 2½d. to 4½d.; Hybrid, natural chips at 3d. *Java*: Of 175 bags and 98 bales offered about 200 packages sold, Ledger, natural stem chips at 3⅛d. to 4⅛d, branch at 2½d. to 4⅛d., and root at 3¾d. to 4⅛d. *South American*: 119 bales Bolivian cultivated Calisaya offered and sold; fair quill at 5¼d. to 6¼d., slightly damaged at 5½d. to 6½d. *African*: Of 267 bales 224 sold; bold quill at 3⅝d. to 4⅜d., fair ditto at 3⅞d. to 4¼d., broken quill and chips at 3½d. to 3⅝d. It is reported that only half the quantity of bark will be offered at the sale in Amsterdam on February 16, which, if correct, cannot fail to have its effect upon prices.

CLOVES.—Privately the market for *Zanzibar* has been strong and

dearer. With a good demand fair business has been done; spot at 3⁹⁄₁₆d. to 3⅝d.; January-March delivery, 3⅝d.; March-May, 3⁷⁄₃₂d. to 3⁹⁄₁₆d. At auction 35 cases *Penang* offered, of which 20 cases sold without reserve; fair picked at 6⅝d. to 7d. 200 bales *Zanzibar* bought in at 3⅞d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*: Commercial 1s. per gallon, pure 1s. 4d. to 1s. 6d. per lb. *Benzole*: 50 per cent., 9d. per gallon, 90 per cent., 8d. per gallon. *Creosote*: 3d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 6d. per gallon; 90 per cent. at 160° C., 1s. 2d. per gallon; 90 per cent. at 190° C. 1s. 3d. per gallon. *Anthracene*: 3½d. per unit. *Pitch*: 24s. 6d. per ton *f.o.b.* *Tar*: Refined 12s. 6d. per barrel, 2⅛d. per gallon. *Crude*: 12s. per barrel, 2d. per gallon.

COCAINE.—Market is quiet, makers' quotations being very firm at 10s. 6d. to 11s. per oz. for the *Hydrochlorate* in 25-oz. tins and for 100-oz. lots. There are, however, sellers of good brands from second hand at somewhat below these prices, while inferior and discredited brands are said to be offering below 10s. per oz, without, however, finding buyers.

CODEIA—Is steady at 12s. 6d. per oz. for the *pure* and 11s. 6d. per oz. for the *salts*.

COD-LIVER OIL.—Market is dull. Quotations for 1898 best non-freezing *Norwegian* oil vary from 62s. 6d. to 70s. per barrel of 25 gallons. It is possible, should the present cold weather continue, that we may see some improvement in value of the article, the course of which has of late proved so very disappointing to holders.

CREAM OF TARTAR—Is rather easier at 72s. 6d. per cwt. for first white *Crystals* on the spot, *powder* being quoted 74s. 6d. to 77s. per cwt., according to strength.

GALLS.—*China* have been quiet with no business reported, the *c.i.f.* price for arrival being about 52s. 6d. per cwt., for *green* and *blue* galls extreme prices are asked, viz., *blue* 60s. to 62s. 6d. per cwt., sorts 55s. to 57s. 6d.; *green* 50s. to 52s. 6d.; *white* 45s. to 47s. 6d. per cwt.

GLYCERIN.—Market for *Crude* is the shade easier, without, however, any special alteration in values, while *refined* is practically unchanged at 50s. to 55s. for English and 52s. 6d. to 60s. per cwt. for German, according to quantity and brand, for the best white double distilled chemically pure 1260° quality in cases each 4 × 56 lb. tins.

GUAZA (CANNABIS INDICA).—Good green tops sold and 6d. to 6¼d. per lb.

GUM TRAGACANTH—Is in good demand, and very full prices are asked. The selection in some of the grades, and especially of the cheaper kinds, is very limited, which restricts business. Quotations are: Firsts, £14 10s. to £15 per cwt.; seconds, £13 to £13 10s.; thirds, £11 to £12; fourths, £8 10s. to £10 10s.; yellow and pinky, £6 10s. to £7 10s.; lower qualities, 35s. to 120s. per cwt.

IODIDES—Are steady at 10s. 6d. per lb. for *Potass. Iodid.*, 11s. 10d. for *Sodii Iodid.*, 14s. 3d. per lb. for *Ammon. Iodid.* 13s. 10d. per lb. for *Iodoform cryst., powder*, and *precipitated*, and 12s. per lb. for *Iodine* re-sublimed. *Crude Iodine* is unchanged at 7½d. per oz.

IPECACUANHA.—Since last Thursday's auctions a very large business has been done, several parcels having changed hands several times, at constantly higher prices. The price immediately after the sales was fixed for *Rio* at 10s. per lb., and has risen until 12s. per lb. has been paid for 10 bales from importers, with the guarantee that they will sell no more of their present stock below 14s. per lb. This stock is said to consist of 25 bales only, and there are no news of any more being on the way. For *Carthagena* the demand has also been active, with a constant turning over of the small existing stock at increased values. The market for this grade closes at 9s. per lb.

MERCURIALS—Are firm at 2s. 9d. per lb. for *Hydrarg. Chloride B.P.* (*Calomel*), and 2s. 5d. per lb. for *Bichloride B.P.* (*Corrosive Sublimate*), the other preparations being quoted in proportion.

MENTHOL—Is firm, best brands of dry white crystals not being obtainable on the spot below 7s. 9d. to 8s. per lb., while for arrival the price is quoted above parity of these figures. It is thought that we may very likely see much higher prices for this article.

MORPHIA—Is somewhat weak, in sympathy with the weaker feeling in Opium. *Hydrochlorate powder* is quoted by makers 4s. 9d. to 5s. per oz., according to quantity, etc., the *crystal salts* being quoted 2d. per oz. dearer than the *powder*.

NITRATE OF SODA—Is quiet, but fairly steady at £7 12s. 6d. to £7 15s. per ton for *commercial*, and £8 to £8 2s. 6d. per ton for *refined*.

OILS (ESSENTIAL).—*Star Aniseed*, quiet to rather easier, 6s. to 6s. 1d. being the spot price for 5 case lots. *Cassia* in fair demand, especially for lower grades, 50 to 55 per cent., 4s. 3d. per lb.; 60 to 65 per cent., 4s. 6d. per lb.; 70 to 75 per cent., 4s. 7½d. per lb.; 80 to 85 per cent., 5s. per lb. *Lemongrass* quiet, with sellers at 27s. 8d. to 30s. per oz. *Citronelle* steady at 1s. 1d. per lb. for tins on the spot. *Peppermint*, American grades are all slow of sale, *H.G.H.* remains at 5s. 6d. per lb. *Wayne County*, 3s. to 3s. 9d. per lb., according to quality. *Japanese* qualities remain unchanged, dementholised at 3s. 6d. per lb., 40 per cent. 5s. per lb.

OILS (FIXED) AND SPIRITS.—*Linseed* very firm, at a further advance; London spot, pipes, £16 15s. to £16 17s. 6d. per ton; barrels, £17 5s. to £17 7s. 6d.; February-April and May-August, £17 5s.; September-December, £17; Hull, spot, naked, £16 2s. 6d.; February-April, £16; May-August and September-December, £15 15s. *Rape* is also firmer; ordinary brown spot and February-April, £21; refined spot, £22 10s.; Ravison naked, spot, February-April and May-August, £17 10s. *Cottonseed* firm; London crude, spot, £13 7s. 6d.; February-April, £13 10s.; May-August, £13 15s. to £14 per ton; refined spot, £14 15s. to £15 10s. per ton, according to make; Hull naked refined spot, £13 2s. 6d.; February-April, £13 5s.; May-August, £13 15s. *Olive*: Spanish, £28 10s. to £32 per ton; Levant and Mogador £29 to £32. *Coconut*: Ceylon, spot, £25 10s. per ton, landed; February-April, £24 5s., *c.i.f.*; Cochin, spot, £30 10s., landed; afloat, £27, *c.i.f.*; January-March shipment, £26, *c.i.f.* *Palm*: Lagos, spot, £23 10s. *Lubricating* Oil: Pale American spot, 5s. 6d. to 7s. per gallon; black, 4s. 9d. to 5s. 6d; Russian black, 4s. 6d. to 5s.; pale, 7s. to 8s. per gallon. *Turpentine*, after being quiet and weak, is again decidedly firmer for all positions. American spot, 31s. to 31s. 3d. per cwt.; February-April, 31s. 4½d.; May-June, 29s. 3d.; July-December, 24s. 7½d. per cwt. *Petroleum* dull, Russian spot, 5½d. to 5¾d. per gallon; American spot, 6⁹⁄₁₆d. to 6⅝d.; water white, 7⅜d. to 7⅝d. per gallon. *Petroleum Spirit*, American, 8d., deodorised, 8½d. per gallon.

OPIUM—Is weak at nominally unchanged prices, a fair business has been done in manufacturers' qualities at 10s. 6d. per lb., transactions have been, however, checked by holders asking more than buyers were willing to pay. Quotations are nominally still about the same as last week, viz., fine *Druggists'* 10s. 9d. to 11s. 6d. per lb., fair to good seconds and manufacturing kinds, 10s. to 10s. 9d. per lb.; good to fine soft shipping qualities, 12s. 3d. to 13s. 6d. per lb.; seconds, 10s. 3d. to 10s. 6d. per lb. *Persian*, 10s. 6d. to 11s. per lb.

OXALIC ACID.—Price is unchanged at 3d. to 3¼d. per lb. net, free delivered London.

PARAFFIN WAX.—*Crude* 1¾d. to 2d., *refined* 2¼d. to 3½d. per lb.

PHENACETIN—Is quiet at 3s. 9d. to 4s. 6d. per lb., according to make, quantity, and packing.

PITCH—Is quoted 8s. to 9s. per cwt.

POTASH COMPOUNDS.—*Bicarbonate* is quoted 30s. to 35s. per cwt. for both crystals and powder, according to make, quantity, and packing. *Bichromate*: 3½d. per lb. *Bromide*: 1s. 10½d. per lb. *Chlorate*: Powder 4d., crystals 3¾d. per lb., on the spot. *Iodide*: 10s. 6d. per lb. *Oxalate*: Neutral 5½d. to 5¾d. per lb. *Permanganate*: 52s. 6d. and 57s. 6d. per cwt. for large and small crystals respectively in 1 cwt. kegs, ton lots being obtainable at rather less money. *Prussiate*: English yellow 7d. per lb., red 1s. 1d. to 1s. 2d. per lb.

POTASH PERMANGANATE—Is quiet at 50s. per cwt. for small *Crystals*, and 55s. per cwt. for large *Crystals* in 1 cwt. kegs, and for lots of 10 to 20 cwt.

QUICKSILVER—Is very firm at £8 per bottle from the importers, and £7 19s. 6d. per bottle from second-hand.

QUININE.—Although there has been but little doing in the article during the past few weeks, the market appears to be hardening. Makers still quote 10½d. per oz. for the best brands of German *Sulphate* in 100-oz. tins and for 1000-oz. lots, but they are by no means free sellers. It is also stated that at the next Amsterdam bark sales only a comparatively small quantity of *Bark* will be offered, which, if it proves correct, cannot fail to have its effect upon the price of *Quinine*.

ROSIN—Is steady on the spot, but rather easier for forward delivery, strained being quoted 4s. 3d. per cwt. ex wharf and 4s. per cwt., *c.i.f.*, for February to April shipment, per sailing vessel.

SAFFRON.—*Valencia* of prime quality is very firm at 47s. 6d. per lb. *Alicante*, 26s. per lb.

SENNA.—The demand for *Tinnevelly* grades has been very active this week, and a fairly large business has been done from second hands at from 2¾d. to 4½d. per lb., according to quality. Next week nearly 300 bales will be offered, but so far no further shipments are known to be on the way. Pods are firm at 2¼d. per lb. *Alexandrian* qualities slow of sale; fine leaf, however, is wanted; pods, 4½d. per lb.

SENEGA ROOT.—New York quotes 1s. 1d. per lb., *c.i.f.*, for good Western root.

SODA COMPOUNDS.—*Crystals*: 55s. per ton in barrels, 52s. 6d. in bags, ex-ship, Thames. Ash, £5 to £5 10s. per ton, according to strength, etc. *Bicarbonate*: 97 per cent., £7 10s. to £8 per ton; ditto, fully bicarbonated, 18s. 6d. to 19s. per cwt. *Bichromate*: 2¾d. per lb. *Bromide*: 2s. 1½d. per lb. *Caustic*: white, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. *Hyposulphite*: 6s. 6d. to 8s. 6d. per cwt., according to make, etc. *Iodide*: 11s. 10d. per lb. *Nitrate*, commercial, £7 15s.; refined, £8 2s. 6d. per ton.

SODA CRYSTALS.—Barrels are still quoted 55s.; bags, 52s. 6d. per ton ex ship, London.

SPICES (VARIOUS).—*Black Pepper*: Only 13 bags Singapore offered and sold. *White Pepper*: 222 bags Singapore bought in at 8⅞d. to 9½d.; 113 bags Penang bought in at 8d. *Cinnamon*: 7 packages Ceylon bought in at 5¾d.; 90 bags chips also bought in at 4½d. *Cassia Vera*: 6 bags damaged quills sold at 30s. 6d. *Cassia Chips*: 200 bags bought in at 42s. to 43s. *Mace*: Only 15 cases Penang offered and bought in. *Nutmegs* dull; of 60 cases Penang only 3 cases sold, 63's, slightly wormy, at 2s. 7d. *Pimento* easier; of 871 bags offered about 200 bags sold at 4¼d. to 4½d.

SULPHATE OF COPPER—Is strong and advancing, due, no doubt, to the continued rise in value of the metal, and is quoted £20 10s. to £22 10s. per ton, according to brand.

SULPHONAL.—Makers' price is 17s. per lb. for *crystals* and *powder*. Stocks in second hand appear to be reduced to a minimum, and the moment cannot be very far distant when buyers will be obliged to pay full makers' price.

TAR.—*Stockholm* 26s., *Archangel* 18s. 6d. to 19s. per cwt.

TARTARIC ACID.—English is quiet at 1s. 0½d. per lb. on the spot. Foreign being quoted 12d. to 12⅛d. per lb., *c.i.f.*

THYMOL—Is firm at 8s. to 8s. 6d. per lb., and appears likely to go dearer.

Newcastle Chemical Report.

JANUARY 25, 1899.

A shade more business passing. Bleaching Powder is rather more firmly held, the late advance in price being easily realised. Other heavy goods remain steady. Quotations are:—Bleaching Powder, £5 to £5 5s. Caustic Soda: 70 per cent., basis price, £7. Soda Crystals, basis price, 45s. to 47s. 6d. Soda Ash: 52 per cent., £4 5s. Alkali: 52 per cent., £5 5s. Sulphur, £4 15s. to £5 per ton.

Liverpool Market Report.

JANUARY 25, 1899.

A considerable amount of business has been done in Castor Oils, both Calcutta and French, and prices have become very firm in consequence. Olive Oil also has attracted a good amount of attention, and prices are steady at recent quotations, notwithstanding that stocks here are being cleared out and the price of oil in Spain for shipment is higher than it is here. Linseed and Cottonseed Oils have altered in quotation to a slight extent, and Spirits of Turpentine have again experienced a slight reduction. As regards chemicals, not much business has been done, though prices may be said to be generally better.

AMMONIA SALTS.—*Carbonate*: 3d. per lb. *Sulphate*: £10 12s. 6d. to £10 15s. per ton.

CANARYSEED—Is not very brisk, though there is more inquiry for Turkish at 27s. to 28s. per 464 lbs.

COPPERAS—Is very firm at 39s. per ton for Lancashire and 37s. for Welsh.

LINSEED—Is firm as regards Calcutta, in which business has been done at full price on private terms. River Plate is unchanged with little offering, either spot or forward.

OILS (FIXED) AND SPIRITS.—*Castor* is exceedingly firm. Calcutta has been selling "to arrive" (about 1000 cases) at 3d. per lb., shipments from November to March; French has attracted a good share of attention, and about 50 tons have been sold to arrive, February to April, at £24 to £24 15s. per ton, *f.o.b.*, Marseilles. On the spot Calcutta is 3⅛d. per lb. and French 3d. *Linseed* is selling moderately at 18s. 3d. to 19s. per cwt. *Cottonseed* is slow of sale at 15s. 6d. to 16s. *Spirits of Turpentine* is quiet at the easier rate of 31s. 9d. per cwt.

POTASH SALTS.—*Bichromate*: 3½d. per lb. *Chlorate*: 3½d. to 3¾d. per lb. *Cream of Tartar* slow of sale, at 71s. to 75s. per cwt. *Potashes*: 24s. 9d. to 25s. per cwt. *Pearlashes*: 33s. to 34s. per cwt. *Saltpetre* is firm at 22s. per cwt.

Manchester Chemical Report.

JANUARY 25, 1899.

There is an upward tendency in many departments, and although the low range makes the production of heavy chemicals barely remunerative, the prospects forward are fairly good. Makers hold out for full rates, and in regard to miscellaneous articles there are again advances to report, although Benzols are still on the decline. The quantity of Pitch sent away by the Ship Canal continues fairly large. Caustic Soda is very firm at £7 15s. per ton for 77-78 per cent., but makers do not press sales, and stand out for full rates for all strengths. Bicarbonate of Soda is somewhat easier. The greatest advance has been in Sulphate of Copper, which is to-day quoted £21 10s. prompt and forward, best brands, delivered Manchester. Acetate of Soda is also firm and scarce at £14 10s. per ton, spot. In Arsenic there is more doing at £16 10s. to £17 per ton, ex-ship, Garston. Aniline Oil and Salt are low at 4¾d. and 4¼d. respectively. Saltcake is unchanged and firm. Sulphur moves freely at £4 12s. 6d. to £5 for recovered, according to point of delivery. Yellow Prussiate has advanced a point, and may be quoted 7d. to 7⅛d. Brown Acetate of Lime remains steady at £5 7s. 6d. to £5 10s. for Welsh and American delivered Manchester. Tin crystals are again higher, and, owing to the continued advance in the metal, quotations are nominal.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Albion J. Lardent, Herbalist, 321, Southwark Park Road.

Abraham Dubowski, Soda Water Manufacturer, 15, Wilkes Street, Brick Lane, and 3, Morgan Terrace, Coborn Road, Bow.

Stewart Kirkpatrick, Physician and Surgeon, 3, Church Street, Flint.

Partnership Dissolved.

(From the London Gazette.)

R. Wentworth White and Henry F. White (carrying on business as Richard White and Sons), Surgeon-Dentists, Norwich.

Obituary.

REES.—On January 21, William Henry Rees, Pharmaceutical Chemist, Dartmouth. Aged 78. Mr. Rees had been a member of the Pharmaceutical Society since 1853. He had been in business at Dartmouth for upwards of sixty years, and was for many years a Councillor of the borough, and has also occupied the Mayoral chair. He was on the Commission of the Peace for the borough, a member of the local Technical Committee, the Regatta Committee, and the only surviving trustee of two local charities—Blondett's and Langdon's.

Trade Note.

MESSRS. EVANS, SONS AND CO., 56, Hanover Street, Liverpool, send a copy of their new list of specialties, which has been specially compiled for the use of doctors, and is of neat appearance, being compact and of a suitable size for the pocket. Copies of the list will be supplied, on application, to chemists for distribution among the medical men of their district.

Calendar for the Week.

Sunday, January 29. Septuagesima. Sun rises 7.46 ; sets 4.41.

Monday, January 30. Sun rises 7.45 ; sets 4.43.
PHARMACEUTICAL SOCIETY OF IRELAND, 67, Lower Mount Street, Dublin.—Musical and Social Evening.

Tuesday, January 31. Sun rises 7.43 ; sets 4.45.
BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION, County Restaurant.—Lecture on "Commercial Electricity," by A. H. Gibbings.
CHEMISTS' ASSISTANTS' UNION OF GREAT BRITAIN, Horse Shoe Hotel, Tottenham Court Road, W.C., at 8.30.—Second Smoking Concert.
ROYAL COLONIAL INSTITUTE, Whitehall Rooms, Hôtel Métropole, S.W., at 8 p.m.—Miss Flora L. Shaw will read a paper on "Canada."
ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Prof. E. Ray Lankester will deliver the third lecture on "The Morphology of the Mollusca."

Wednesday, February 1. Sun rises 7.41 ; sets, 4.47.
ABERDEEN PHARMACEUTICAL ASSOCIATION, Imperial Hotel, at 7.15 p.m.—Diamond Jubilee Dinner, Mr. J. Clark (President) in the chair.
PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, W.C.—Meeting of the Council.

Thursday, February 2. Sun rises 7.40 ; sets, 4.49.
CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m., The programme for this meeting contains a list of thirteen papers, seven of which deal with nitrogen iodide.
CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—"The Spectacle Makers' Company" will be the subject of a paper by S. W. Woolley.

Friday, February 3. ☾ 5.24 A. Sun rises 7.38 ; sets, 4.51.
IRISH PHARMACISTS' ASSISTANTS' ASSOCIATION, 67, Lower Mount Street, Dublin.—Ordinary meeting.

Saturday, February 4. Sun rises 7·37 ; sets, 4·53.

Marriage.

WISE—MORRIS.—At St. Paul's Church, Shanklin, Isle of Wight, on Wednesday, Jan. 18, Mr. G. W. Wise, chemist, of High Street, Rickmansworth, was married to Miss Ellen Annie Morris, third daughter of the late Mr. Walter Morris, auctioneer, of Ross, Hereford. The officiating clergyman was the Rev. A. W. Stockley.

Advertisements.

(Received too late for Classification).

LADY PHARMACIST wanted, qualified, to superintend in the packing department and handling of preparations containing poisons. Applicants will please state age, experience, and salary required to POISON, care of Messrs. Street & Co., 30, Cornhill, E.C.

HITHER GREEN (London's latest limb)—To be Let or Sold commodious BUSINESS PREMISES on a rapidly increasing residential estate and facing the railway station. Grand chance for a chemist. Rent £70 per annum on lease, or to purchase lease (999 years). Ground rent £12. Price £850 ; part can remain. Apply, HORACE RANDALL & Co., Estate Agents, opposite railway station, Hither Green, S.E.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Akhurst, Andrews, Alexander, Attenburrow, Barrie, Batley, Bevan, Bird, Blackwell, Branch, Brearley, Browne, Campkin, Cooper, Coull, Cracknell, Cruickshank, Daniel, Evans, Flux, Gateley, Gelston, Gibson, Gilderdale, Harrison, Hayes, Henson, Hill, Hogg, Lewis, Lillard, Livesey, Lloyd, Lothian, Macfarlane, Man, Merck, Miller, Mitchell, Murray, Newry, Norris, O'Halloran, Philp, Potter, Roe, Rowell, Sharman, Spilsbury, Squire, Stewart, Thompson, Vivian, Vogt, Wardleworth, Whineray, Wise, Wokes, Wyatt.

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EXCHANGE.

Prepaid Notices not exceeding thirty words are inserted at a fee of Sixpence, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, count as one word. The fee for use of Serle Street address is Sixpence. All communications should reach "PHARMACEUTICAL JOURNAL" Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 10 a.m. on Thursdays.

OFFERED.

Magic Lanterns, second-hand ; triples and biunials : oxyhydrogen microscope ; marvellous pamphengos oil ; lantern gives 14-ft. picture ; 60,000 slides and effects ; 4-in. 4-wick lanterns, 18s. 6d. each, bargains ; illustrated list post free, 2d. Animated photographs : A splendid machine for £9 9s. —Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Robert H. Clark's Specialties.—Lantern, with 4-in. condensers and 3 wick lamps, 17s. 6d. ; with 4 wick lamps, 18s. 6d. Slides, sale or hire, Conquest of Soudan, Spanish-American War. Catalogue free.—Robt. H. Clark, Royston, Herts.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed. —F. W. Franklin, Exchange Buildings, Birmingham.

For Sale.—Good Microscope ; six objectives, coarse and fine adjustment, condenser, and other usual accessories. In mahogany case ; scarcely used. Cost £7 10s. ; accept £5 10s.—Kirkpatrick, Chemist, Taunton.

Two Swan-necked Carboys, 38 inches high, capacity four gallons, cut glass stoppers, and stands ; by Treble. Offers, or £7 10s. for Carboys, together with microscope above.—Kirkpatrick, Chemist, Taunton.

Five Hundred good plain photographic slides, 4s. 6d. doz. ; hand-painted, 9s. Sample and list, 6d.—Holloway, 125, Bailey's Lane, Stamford Hill.

Good Investment ; complete copy of recipe-book, upwards 100 valuable recipes, 10s. ; honestly worth £50. Thoroughly reliable and genuine, over 20 years' reputation, numerous testimonials.—"Chemist," 9, Lady's Lane, Northampton.

Good Microscope, known maker, cheap.—Nall, Milnrow, near Rochdale.

Two Specie Jars for sale or exchange very cheaply ; gilded dome covers, heraldic arms, sound condition, height 25 inches. Two mahogany stands to same, height 6 inches. What offers ?—To Willesden Drug Stores, Cambridge Terrace, Church Road, Willesden, N.W.

Microscopes.—A Binocular with accessories, cost £18 to £20, offered for £8. Small Microscope, £1. Descriptions on application.—H., 1, Nemoure Road, Acton, London, W.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Camwal Shares and Idris Preference. Say lowest price.—Thornley, Ilfracombe.

Wanted, Green's 'Botany' (vol. 2), Maisch's 'Materia Medica,' Muter's 'Analysis,' secondhand. Must be cheap for cash.—Crofts, 55, Brackenbury Road, Preston.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

The School of Pharmacy Dinner bids fair to be a success again this year. Many prominent pharmacists, among others Mr. Michael Carteighe, Professor Attfield, F.R S., and Mr. Arkinstall, have signified their intention of being present. As announced last week, Mr. Walter Hills, the President, intends coming, and this year's students, both Major and Minor, mean to come in force to give him a hearty welcome. Illness and distance appear to be the two main hindrances to many who otherwise would have met in the Caledonian Room, Holborn Restaurant, on the 22nd of this month. Thus many will read with regret of the illness of that veteran pharmacist Mr. Joseph Ince, for so many years intimately connected with generations of pharmaceutical students, both as teacher and examiner. As an example of those who live at a distance, Mr. Chas. Shapley, one of the three original founders of the School of Pharmacy Students' Association, writes from Torquay wishing the gathering every success. The musical programme will be almost entirely supplied by Squaremen past and present. The Secretary of the Dinner Committee, Mr. F. A. Upsher Smith, will be glad to forward tickets, price 5*s.* each, to any old Squaremen or to others interested in the life and work of the School of Pharmacy who wish to be present.

The Programme of the Students' Association for February is as follows :—On Friday, February 10, Mr. Padwick will give a short note on "The Baobab Tree and its Uses," and Mr. Garsed will contribute a paper on "Pharmaceutical Education," which should prove interesting, as it is a subject which lends itself to debate. On Friday, February 24, a paper will be given by Miss Blundell and Miss Cable entitled "A Brief History of Six of the Febrifuges."

Football.—It is a long lane that has no turning, but anyone who witnessed the match played on the Harlesden ground at Willesden would have said that the ill luck of the Pharmaceutical team would never turn. The ground for the match was situated high above Willesden, and in consequence was in very good condition. The Square captain, losing the toss, had to play up-hill and against a slight wind, but, recognising the fact that the first half would be the most critical, the team played well together, and, though nothing was scored, the enemy were kept well within their quarters. On changing over, however, a stroke of misfortune occurred, which, as may be seen from the final result, turned the tide of affairs. The ball was returned by one of the opponent's backs with such vigour that it dropped within a few yards of the Square goal. One of the pill-pushers, attempting to head it, misjudged the height of the ball, and instead of heading it forward just tilted it out of his goal-keeper's reach and through his own goal. Several determined efforts were now made to equalise, and twice the ball was on the goal-line, the goal-keeper being knocked down. Yet by some miraculous stroke the ball got away, and though a goal was actually shot by Lloyd, he was ruled off-side, the match ending in a defeat for the Square by one goal to *nil*. Durbin played in goal owing to an injury to his knee, and Padwick, who usually plays goal, changed to the forward line, where he proved himself quite equal to his position. The present team is as follows :—Forwards, Wild (capt.), Garsed, Lloyd, Wilkinson, Padwick ; half-backs, Collinette, Evans, Martin ; backs, Gray, Stokoe ; goal, Durbin.

FRENCH NEWS.

The International Hospital, founded by the celebrated Dr. Péan, who died just about twelve months ago, has been completely reorganised, and will henceforth bear the name of the Hospital Péan. Dr. Delaunay, who, since the death of Dr. Péan, has had charge of the hospital, will assume the duties of surgical director. The plan marked out by Dr. Péan has thus at last been realised. The hospital was his pet hobby, and he was busy with all manner of improvements in its system when death suddenly came upon him.

The Manna of the Hebrews.—Monsieur Henri Castrey, in the journal known as *La Nature*. gives a note on the composition and nature of the manna found in the French desert, and so celebrated in the history of the Jewish people. Even to-day the Arabs who traverse the arid sands of Arabia or Africa do not disdain to make use of this little-known commodity, either as food for their camels or for their own individual consumption. This manna is none other than a thallophyte, the "canona-esculenta" or "lichen esculentus." This mushroom growth is very common, and is found upon the sands after rain. It is a greyish cryptogam, little larger than a pea, with a mealy fracture, and is sometimes found in agglomerated masses of great dimensions. It has an agreeable taste, being somewhat sweetish. Its consumption is attended by an appreciably laxative effect. The composition, according to the author, is as follows :—

Water	16 per cent.
Nitrogenous matter	14 ,, ,,
Non-nitrogenous matter	29 ,, ,,
Mineral	5 ,, ,,
Starchy	32 ,, ,,
Fatty	4 ,, ,,
	100

Thus it is easily seen that this aliment is sufficiently rich ; although it can scarcely be called a complete aliment or food, still it is capable of sustaining, for no inconsiderable period, man and beast who might perchance be temporarily deprived of other means of sustonance.

Pharmacien Fined.—On January 21, the Tribunal Correctionnel of Liège fined Monsieur U——, pharmacien, of Liège, 105f. 50c, or, in default, fifteen days' imprisonment, under the following circumstances :—Monsieur U——, after having sold his pharmacy, continued to make and sell one of his specialities (a mixture of bromides, arsenic, etc.) for the cure of epilepsy. He had sold some of this speciality to a painter's employé, an epileptic named Bland, who had hitherto hesitated to mount a ladder, fearing an attack. The workman's family accused the ex-pharmacien of having personally examined Bland, and having told him that, considering him perfectly cured, he could retake to his trade and have no fear of a recurrence of the seizures. But Bland has since had an attack, whilst he was at the top of a ladder, and, tumbling therefrom, has been killed. The Tribunal rejected the evidence as to the "personal examination," but, on the evidence of witnesses who affirmed to have seen the accused deliver five bottles with his own hands, condemned the pharmacien to pay the above fine for having retailed a compound medicament, having no "open-shop." For the defence, the accused denied the sale, stating that he only supplied his specialty in wholesale quantities, and only to pharmaciens.

IRISH NEWS.

Irish Pharmacists' Assistants' Association.—At Dublin, on January 27, the usual fortnightly meeting of this Association was held at the Dublin Scottish Association Rooms, Beresford Place, when a lantern lecture entitled "Some Popular Artists of the Day" was delivered by Mr. J. S. Ashe, M.P.S.I. The chair was occupied by the President, Mr. H. Hunt, M.P.S.I., and there was a crowded attendance of members and their friends. The President having introduced the lecturer, Mr. Ashe (who was received with applause) proceeded to the subject of his lecture, which embraced the various characteristics of the present day cartoonists, including De Maurier, Phil May, and others, whose peculiarities of style and form and general artistic habits were treated upon in a humorous and entertaining manner. The lecture occupied over an hour in delivery, and was illustrated by nearly one hundred slides. At the close of the lecture Mr. Ashe was loudly applauded, and a vote of thanks was passed to him and to Mr. Turner for his kindness in procuring the Association the use of the room.

During the Past Few Days the electors of Dublin City and County have shown their appreciation of the drug and chemical trade in no small degree ; no fewer than three of the pharmaceutical craft have been advanced to the foremost positions of the Urban Councils. In Rathmines, Mr. E. M. Hodgson, M P.S.I. (McMaster, Hodgson and Co., Capel Street), has been elected Chairman, and at Kingstown a similar honour has been conferred on Mr. T. W. Robinson, M.P.S.I. (director of Hayes, Conyngham and Robinson). The Pembrokes Councillor have appointed Sir Robert Jackson, Governor of the Apothecaries' Hall of Ireland, as

their chief colleague. Mr. Beggs, M.P.S.I., Vice-President of the Pharmaceutical Society, has consented to act as Urban Councillor for Dalkey, while Sir Henry Cochrane (director of Thacker and Hoffe, wholesale chemists, Dublin) has undertaken a similar responsibility at Bray. Going outside of Dublin, the same partiality for chemical councillors is seen in the return in almost every town in Ireland of a representative of the trade.

One of the Most Far-Reaching Results of the election of chemists as members of the new County Councils will doubtless be the disappearance of most, if not all, of the old-fashioned systems of contracting for the supply of drugs to the various Poor Law Guardians and other public bodies. The presence of the craft "on the spot" will probably make not over-particular contractors-elect hesitate to send in nicely-garnished tenders, and will, it is hoped, bring about a better state of things generally in the unions.

WELSH NEWS.

The Chemists of Wrexham and District met on January 24, to form a local association for the purpose of defending their privileges, and as a means for the discussion of trade topics. Nineteen members were enrolled, and the secretary was deputed to inquire whether or not the whole of the chemists in North Wales could be brought in. The aims of the Pharmaceutical Society were discussed, and eighteen fresh subscribers' names were sent up to headquarters as members. The whole tone of the meeting was gratifying in that "union" was the watchword, and the "pin-pricking" policy of the *Chemist and Druggist* in relation to the Pharmaceutical Society, was strongly resented. If that paper could not find it expedient at the present crisis to enter the lists for fair-play for the qualified man, it would be better to depend upon a journal that would, said one member. The Lord Chancellor and Lord Herschell, it was pointed out, had said that companies, each member of which was not qualified, were acting against the spirit of the Pharmacy Acts, but the *Chemist and Druggist* says they cannot be stopped. In the meantime, hundreds of chemists, with apparently a wasted lifetime at their back and their capital locked up in worthless businesses, were asking that the title of "chemist and druggist" and the sale of poisons should be restricted as was intended under the Act of 1868.

ENGLISH NEWS.

Chemists' Assistants' Association.—The members of this Association held the first meeting after the Christmas holidays on Thursday, January 26, at 73, Newman Street, W., and spent a most enjoyable social evening, light refreshments being served as usual. The President, Mr. F. W. Gamble, occupied the chair. There was a fairly good attendance, and the entertainment was entirely provided by the members and friends. Chemists' assistants, as a rule, have not much time to devote to the cultivation of musical abilities, especially those who have yet to pass the qualifying examination, nevertheless, not a few of them can give a creditable rendering to a good song, others are fairly proficient in the manipulation of the violin and banjo, or in officiating at the piano, while all are able to join in and enjoy a hearty good chorus. Then several members of the C.A.A. are possessed of no small amount of ability as amateur reciters, consequently it is by no means necessary to engage professional entertainers to ensure a successful social gathering such as was held last week. As a matter of fact, at least one participant in the programme on Thursday evening would take a lot of beating, even by a professional, *i.e.*, Mr. Rugman, who presided at the piano and rendered a couple of selections in excellent style. Some capital songs, several with choruses in which all joined, were sung by Messrs. Everson, Hornby, Latreille, Roe, Strother, and Tasker, while Dr. Rathbone obliged with a number of recitations, which were delivered with good effect, as was also a humorous sketch by Mr. Hymans, the newly-appointed literary secretary, who also contributed a skilfully executed violin solo. Members who took no part in the programme smoked and vociferously applauded those who did. Votes of thanks were accorded to the gentlemen who had so kindly entertained the company, and a very pleasant meeting broke up shortly after 11 o'clock.

Plymouth Photographic Society.—At a meeting of this Society held on Friday, the 27th ult., Mr. E. G. Turney, M.P.S., read an interesting paper entitled "A Glance at Some of the Chemistry of Photographic Processes," and showed experimentally some of the reactions which take place in the manufacture, etc., of dry plates. At the conclusion the lecturer was heartily thanked.

Sheffield College of Pharmacy.—Through the kindness of Messrs. Lewis Berger and Co., Ltd., of Homerton, London, permission was given the students of the Sheffield College of Pharmacy, accompanied by the Principal (Mr. J. W. J. Turner), to visit the firm's Sheffield lead works, where white lead has been manufactured at the same place for the last 150 years. The oldest workman remembers lead being brought from the neighbouring lead mines in Derbyshire, 16 miles away. Now it is obtained abroad. The Dutch process is still adopted. The molten pig or blue lead is run into moulds and the resulting thin grating of lead is placed over the pots of weak acetic acid and exposed to its fumes, and the CO_2 from the spent tan. Each stacking chamber holds about 70 tons of lead and after three months is taken down and the white lead removed by passing it through fluted rollers, raked and washed, and carried by chain-carriers to the mills, ground under water, decanted, pressed, and dried in stove rooms at 175° F. A portion is sent out as dry white lead and the remainder ground with oil. Under Board of Trade regulations the men are provided with two suits of clothes a year and a weekly bath. Daily washing before meals (ten minutes being allowed each time). A surgeon visits them once a week. The men looked healthy and were of fine physique. The local manager, Mr. Anderson, conducted the students through the works, and, after explaining the red and orange lead and litharge manufacture, he was thanked for his able guidance. The Pattison's desilvering plant was also shown.

Mr. J. Wellesley Douglas, M.P.S., was the violinist at a concert given by the Mostyn Road Literary Society, Brixton, and played Wieniawski's "Mazurka" and "Andante Religieso" (Thomé), and, being enthusiastically encored, played an Intermezzo by Tours.

Football.—A match was played at Homerton Marshes on Saturday last between the Metropolitan College of Pharmacy F.C. and the Westminster College of Pharmacy F.C., the game resulting in an easy win for the "Metros." by 6 goals to 2. Another goal was also shot just as the referee blew the whistle. The above colleges in their final game last term drew 1 all.

Ocean Penny Postage is not yet quite Imperial in its scope, though a section of the British public appears to think it is, and the Post Office authorities are having much trouble with people who under-pay their letters to places not yet included in the new scheme. An official notice has been issued, therefore, to explain that to Australia and New Zealand, the Cape Colony, Jamaica, Malta, and Mauritius, the letter postage is still $2\frac{1}{2}d.$ per $\frac{1}{2}$ oz., and that letters prepaid at the penny rate are charged $3d.$ per $\frac{1}{2}$ oz. (double the deficiency) on delivery to the addressees. Since the issue of the previous notices on this subject, however, Zanzibar has adhered to the scheme, and the letter postage for that place is $1d.$ per $\frac{1}{2}$ oz. from to-day. Many inquiries having been made whether Burma and British Columbia are included in the penny postage scheme, the Postmaster-General gives notice that both are included, Burma as a part of British India and British Columbia as a part of the Dominion of Canada.

Chemists' Assistants' Union.—On Tuesday evening last the second smoking concert, under the auspices of the C.A.U., was held at the Horse Shoe Hotel. The chair was taken by Mr. T. Edward Lescher, who was supported by Dr. Henry Dutch, Mr. T. C. Martin, and many other well-known members of the trade. The programme was an excellent one, and included songs by Messrs. Norman MacLeod and J. Robinson Hex (two professional gentlemen who kindly gave their services on this occasion); Mr. Tasker was loudly applauded for his rendering of "The Queen of the Earth." The comic business, which was of the most refined order, was in the hands of Mr. Percy Wick and Mr. Martin, both of whom are excellent in their separate lines. Mr. Drayton brought down the house with his recitals of "The Three Parsons," and "Shamus O'Brien." Mr. W. Stewart gave an excellent conjuring entertainment and a musical sketch. Mr. J. P. H. Bewsher gave his excellent ventriloquial sketch "The Dentist," also "The

Village Concert," and created roars of laughter. He is an artist of the highest type, being entirely free from vulgarity. During the evening a collection for the benefit of a member of the Union who is in ill health was made—and a sum of over £5 was the result. The usual votes of thanks brought a pleasant evening to a close at 11.45 p.m.

Bradford and District Chemists' Association.—In connection with this Association a most interesting lecture was given by Mr. A. H. Gibbings on Tuesday, January 31, on "Commercial Electricity." Limelight views were shown of the interior of the Bradford Electricity Works. Many interesting experiments were shown, among which was a working model of a small electric motor which shortly will be on the market. This may be carried about the house and utilised for domestic purposes, such as sewing machines, knife machines, etc. A hearty vote of thanks was passed at the conclusion of the lecture. Mr. Gibbings responded and the meeting terminated.

Cambridge Pharmaceutical Association.—A conversazione and dance will be held at the Assembly Rooms, 61A, St. Andrew's Street, on Friday next, February 10, at 8.30 p m , when there will be an exhibition of Röntgen rays, gramophone, etc. Dancing will commence at 10 30 p.m. Those who intend to be present should communicate with Mr. Bernard S. Campkin, Hon. Sec., Mill Road, Cambridge, by Wednesday morning, February 8.

Society of Public Analysts.—The twenty-fourth anniversary dinner of this Society was held at the Criterion, Piccadilly, on Thursday last, the President, Mr. W. W. Fisher, in the chair. —The toast of "The Institute of Chemistry" was proposed by Professor Odling, who remarked that if there was one society more akin than another to that of the Analysts, it was the Institute of Chemistry, and he hoped that the connection between the two would become closer as time went on.—Dr. Thomas Stevenson, President of the Institute, responded.—Dr. Bernard Dyer gave "Kindred Societies." He remarked that Shakespeare's father was a public analyst, for he was appointed ale tester, and also took upon himself the duty of testing bread, at Stratford-on-Avon. —Mr. Walter Hills, President of the Pharmaceutical Society, replied to the toast.—Professor Tilden proposed "The Society of Public Analysts." He said the public analyst was held in much higher respect than he was twenty-five or thirty years ago, both directly and indirectly, and his usefulness was becoming more and more recognised by the people.—The President, replying, remarked that the Society had three main objects in view—to advance the study of analytical chemistry, the questions relating to adulteration, and to interest itself in the efficiency of the laws relating to the adulteration of food and chemical products.—Mr. Otto Hehner gave the toast of "The Visitors," and Mr. G. Beilby, President of the Institute of Chemistry, responded.

Newcastle-on-Tyne and District Chemists' Association. —A "social" will be held at Suttie's Hotel, Clayton Street, Newcastle-on-Tyne, on Wednesday, February 8, at 8 o'clock. Ladies are invited. The proceedings will commence with a lantern exhibition by Mr. L. Williamson, entitled "Short Holidays with a Camera." The remainder of the evening will be devoted to songs, recitations, etc. Refreshments will be provided.

North-East Lancashire Chemists' Association.—The annual dinner of this Association will be held on Thursday evening, February 9, at the White Bull Hotel, Blackburn. Acceptances of invitations have been received from Mr. Edward Evans, jun., J.P., of Liverpool; from Dr. Symes, of Liverpool, and Mr. Rymer Young, of Warrington (the Lancashire representatives on the Pharmaceutical Council), and from Mr. R. C. Cowley, the Hon. Secretary of the Federation of Local Associations. The Committee wish to make this an occasion for bringing "in touch," the various members of the drug trade, and hope local chemists will allow nothing to interfere with their being present. The price of non-members' tickets is 3s. 6d. each, and the Hon. Secretary, Mr. R. Lord Gifford, Salford Bridge, Blackburn, will be glad to have an intimation from those intending to be present not later than Monday, February 6.

Prosecution Under the Sale of Food and Drugs Act.—At the Lambeth Police Court, on Thursday, January 26, Eugène Compigné, a chemist, carrying on business at Camberwell Road, was summoned, before Mr. Hopkins, at the instance of the Camberwell Vestry, for selling to the prejudice of the purchaser, a certain drug, to wit, belladonna plaster, which was not of the nature, substance, and quality of the article demanded by the purchaser.—Acting under the directions of Mr. C. H. Kerslake, an inspector in the service of the Vestry, a lady entered the defendant's shop and purchased six belladonna plasters. A portion of each plaster was submitted to the public analyst, who certified that they were only 50 per cent. of the strength laid down by the British Pharmacopœia.—The defendant said he asked the lady who made the purchase what sort of plaster she wanted, as he had several sorts. As she did not know what the plasters were required for, he gave her a small piece of plaster, and told her she had better see whether that was the sort she required. She came back and said that was what she wanted. It was the kind of plaster used in 99 cases out of every 100 for the past twenty years, and was actually a more expensive article than the new plaster of the British Pharmacopœia of 1898. He would not supply the new plaster except when it was prescribed, on account of its strength. —Mr. Hopkins remarked that he did not say the defendant was defrauding the public, or anything of that sort, but he was selling a drug without informing his customers that it was not up to the strength they were entitled to demand. There would be a penalty of 40s. and 17s. 6d. costs.

A Prescribing Chemist.—An inquest was held at St. Day on Friday, January 27, by Mr. Carlyon, county coroner, touching the death of a child, aged five years and nine months the son of John H. Dunstan, of Crofthandy.—Mrs. Goldsworthy, a neighbour, stated that she saw the child on Tuesday in his usual health. She was called just before six o'clock. The child's eyes looked heavy and he seemed drowsy. She offered to fetch Mr. Corfield, chemist, at St. Day. Mr. Corfield arrived and prescribed some medicine, which her daughter fetched, but the child was unable to take it. They again fetched Mr. Corfield. The mother was very frightened and ill, and Mr. Corfield recommended them to get a doctor. They wrapped the child in warm blankets, but it died shortly after.—Mr. Corfield said he was a registered chemist. He was asked to go to see a little child of Mr. Dunstan, and he thought it was an older child, who is subject to fits. When he saw the child he felt its pulse and looked at its eyes. He only went to see the child as an act of kindness. He always recommended the fetching of a doctor in serious cases. He prescribed an aperient, and told them to get the child to bed and to give it something warm He thought the child had simply a cold. The cost of the medicine in the case would not be above 6d. He visited to oblige the woman.—Dr. H. H Mack, assistant to Dr. Hichens, of Redruth, stated that he was fetched about half-past ten o'clock. The child was then dead, and he was not then able to say of what it died. The powders prescribed by Mr. Corfield had not been taken. Witness thought they would have been of no effect. It was difficult to say whether anything could have been done to have saved the child's life. The illness was very rapid. The child would have been in a comatose state.—The Coroner said as the child died without having been seen by a doctor he felt it his duty to order a post-mortem, and chemists should know that they had no authority to visit and prescribe. If Dr. Mack had told them that this child's life could have been saved by proper medical attendance it would have been their duty to bring a painful charge against the chemist.—A verdict was returned of "Death from natural causes."

A Coroner on the Sale of Poisons.—At an inquest held this week before the Sheffield Coroner upon the body of John Alfred Fell, aged 20 years, a labourer, who committed suicide by taking laudanum, two small bottles, which had contained laudanum, were produced by Detective Simons.—The Coroner pointed out what a great advantage it would have been to those who were investigating the matter if the date upon which the laudanum was sold had been written upon the bottle. "We are legislated to death about things we don't want," continued the Coroner, "and things like these, which are too small for their cognisance, are matters of life and death. It would have helped you very much if there had been a date upon these bottles. (Several jurors: Hear, hear.) Not only laudanum, but any dangerous material like poisons should have a label upon them." At a later stage the Coroner said he was very much inclined to think that if he was a chemist, carrying on business in a big district, where things of this sort were constantly coming up before juries, he should put the date on which

it was sold upon the label of every bottle of poison, and should order his assistants to do the same. It would be a satisfaction to a chemist to show that in all probability the stuff he had sold had not caused a man's death, as in the case of a man who had gone to another chemist afterwards and bought a further supply of poison.

Chemists and the Poisoning of Dogs.—At the Newcastle County Court on Friday, January 27, a case was concluded in which the plantiffs were the owners of a Newfoundland dog named "Champion Black Watch II.," which it was alleged had been wrongfully destroyed by the defendants, Joseph Roberts, chemist, of 17, Begg Street, Newcastle, and a policeman, damages being estimated at £50.—After a lengthy hearing the Judge decided that the dog destroyed was not Black Watch II., and judgment was made for the defendants with costs except as regards the police witnesses. — Mr. Roberts, the chemist implicated, writing after the conclusion of the case to the editor of the *Newcastle Daily Chronicle*, points out: (1) That he received his instructions direct from the Chief Constable's department; (2) that he had no alternative but to comply with such instructions; (3) that he had no knowledge of the pedigree, ownership, or source of any animal destroyed; (4) and that he had no alternative but to administer the fatal dose.

Mr. J. R. Johnson, of Plymouth, who has for some time past been acting as lecturer on materia medica to the local pharmaceutical association at Plymouth, has been appointed medical storekeeper of Jamaica, in succession to Mr. C. D. Moffat, resigned. Mr. Johnson's new duties will include the inspection of Government dispensaries, etc., in Jamaica, and the examination of candidates for the post of Government compounder.

Trade Notes.

Messrs. Raimes, Clark and Co., Leith Walk, Edinburgh, send a copy of their new catalogue of patent medicines, etc., published triennially. Compared with the previous one, the list proper is bulkier by some twenty-four pages, and there are sixteen pages more advertisements. The growth of the "proprietary" section of the drug trade during the latter half of the present century is strikingly shown by a comparison of a reprint of an old list published by the firm in 1842, and the present catalogue. The old list occupies the two sides of a sheet of foolscap, whilst the present list contains 159 pages, without counting some 80 pages of advertisements. The firm's efforts to keep up with the times are evidenced by a few brief notes concerning synthetic remedies, the chief feature being the formulæ, which appear to have been very carefully worked out.

Holloway's Wine Co., Ltd., 61, New Oxford Street, London, held its Annual General Meeting of shareholders on January 28, when a dividend of 28 per cent. per annum was declared on the Ordinary shares, after allowing for directors' fees, debenture interest, depreciation, and bad debts; but it was decided to pay only 20 per cent., the balance being carried forward to Reserve Fund. The most satisfactory feature in the year's trading has been the large output of Holloway's Vinervo (coca wine for the nerves) and Holloway's Vinvires (meat and malt wine), the sale of which has increased largely during 1898.

The Birmingham Oxygen Co., Ltd., Saltley Works, Birmingham, sends a copy of its revised price list. The firm is the sole manufacturer in the Midlands and Wales of compressed oxygen by Brins patent process, and in addition to the prices for oxygen, coal gas, hydrogen, compressed air, nitrous oxide, carbonic acid, etc., in the company's or in customer's own cylinders, useful information is given with regard to "Inhalers," fittings, and the medicinal and other uses of oxygen.

Messrs. J. Austin and Son, chemists, Nechell's Green, Birmingham, are the publishers of a useful reference almanac containing, in addition to the usual postal, legal and general household information, a list of antidotes for poisons. There is also an interesting article on "Beautiful Italy," by Josiah Austin, F.S.A., M.P.S.

PRACTICAL PHOTOGRAPHIC NOTES.

Ferro-Prussiate, or Blue Printing Paper, which is much used for architectural and mechanical drawings, has the unfortunate habit of not keeping well, but the following will keep much better than the ordinary commercial makes:—

Gum Arabic	2 gm.
Ammonio-citrate of Iron	3 gm.
Tartaric Acid	2 gm.
Distilled Water	20 C.c.

Dissolve the solids by agitation or trituration in a mortar, and then transfer to a bottle of 50 to 60 C.c. capacity, and add liq. ammoniæ, 4 C.c., and shake well. Then add the following solution:—

Potassium Ferricyanide	2·5 gm.
Distilled Water	10 C.c.

and shake the mixture well and allow to stand for a quarter of an hour. This solution, which must be kept in the dark, should be applied to the paper with a soft broad brush by artificial light and then dried in the dark. It is exposed under a negative in the ordinary way till the half-tones show a dark violet colour, and it is then placed face downwards on water for about ten seconds and removed, and exposed to the air for a short time, thoroughly washed in water and then immersed in a bath of—

Eau de Javelle	50 C.c.
Water	1000 C.c.

till it turns a deep blue.

The Following Method of Toning gelatino-chloride prints will give excellent results without any sign of double toning:—Immerse the prints in a 5 per cent. salt solution for five minutes, then wash in four changes of water, allowing five minutes' soaking in each, and then immerse in the following:—

Distilled Water	1000 C c.
Ammonium Sulphocyanide	2 gm.
Sodium Sulphite	0·2 gm.
Formalin	0·4 C.c.
Gold Chloride	0·1 gm.

Mix in the above order. The above quantity will tone one sheet of P.O.P. to a purple brown.

Partnerships Dissolved.

(From the London Gazette.)

Chas. Noel Layman, Chas. Umney, Chas. Foster Wright, Herbert C. Wright, Ernest B. Layman, John Chas. Umney, Fredk. Noel Layman, and Ernest Albert Umney (trading as Wright, Layman, and Umney), Wholesale Chemists and Druggists, 50, Southwark Street, so far as regards Chas. Foster Wright.

Ernest James and Edward H. O. Grossmann (trading as James and Co), Chemists, 11, Station Buildings, South Kensington.

E. Reynolds Ray and Henry Blatherwick, Surgeons, Dulwich.

Geo. Locke and C. J. Jeaffreson, Physicians, Surgeons, etc., Hastings.

Obituary.

Reeve.—On January 8, Edward J. Reeve, Pharmaceutical Chemist, Cricklewood, London, N.W. Aged 66. Mr. Reeve had been a member of the Pharmaceutical Society since 1861.

Bayly.—On January 21, Joseph Henry Bayly, Chemist and Druggist, Great Yarmouth. Aged 63.

Kenah.—On January 25, William Thomas Kenah, Chemist and Druggist, Liverpool. Aged 46.

Poyser.—On January 27, Robert Poyser, Chemist and Druggist, Uttoxeter. Aged 50.

Kinninmont.—On January 28, Alexander Kinninmont, Pharmaceutical Chemist, Bothwell, N.B. Aged 69. Mr. Kinninmont was a member of the Pharmaceutical Society from 1858 to 1896.

Hayles.—On January 30, William Wheeler Hayles, Chemist and Druggist, Landport. Aged 59. Mr. Hayles had been in business in Landport for about twenty-eight years, and was highly respected by a large section of the community.

MARKET REPORT.

The quotations here given are in all cases the lowest cash rices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

February 2.

Business, without being very active, has nevertheless been fairly active during the past week, the principal changes having been a further advance in price of Quicksilver, and consequently of Mercurials, and the excitement in Quinine. Cocaine is also tending higher, as is also Camphor, which has already advanced considerably as far as the price of the crude is concerned. Cascara Sagrada is also dearer, as is Sulphate of Copper. Iodide and Bromides are without change. Citric very firm at late advance. Acid Tartaric dearer, probably in consequence of the rise in price of Acid Citric. Cream of Tartar steady. Seed Oils dearer. Castor Oil firm. Sulphate of Ammonia is one of the few articles which show an actual decline n value on the week. Sulphonal unchanged. Glycerin and Cod Liver Oil quiet. Borax and Acid Boracic steady. Opium rather easier. Morphia quiet and somewhat weak. Codeia firm. The following are particulars of some of the prices actually ruling:—

Oxalic Acid—Unchanged.

Acid Boracic—Firm at 26s. and 28s. per cwt. respectively for *crystals and powders*.

Acid Carbolic—Steady and without change.

Acid Citric—Firm at 1s. 4d. to 1s. 5d. per lb., according to make, on the spot.

Acid Tartaric—Is firmer (no doubt in sympathy with higher price of *Acid citric*) at 1s. 1d. per lb. for *English* on the spot and 1s. 1¼d, *c.i.f.*, for *foreign*.

Ammonia Compounds—Are practically without change, with the exception of *Sulphate*, which is dull and weak at 2s. 6d. to 5s. per ton reduction on prices quoted last week.

Asafetida.—A good business has been done privately at from 45s. to 60s. per cwt., according to quality. Good gum is now scarce.

Bleaching Powder—Unchanged at £6 per ton for English.

Borax—Firm at 16s 6d. per cwt. for *crystals* and 17s. per cwt. for *powder*.

Bromides and Bromine—Are without change.

Camphor—Is a very strong market, both for *crude* and for *refined*, although English makers have so far not again advanced their price, which remains at 1s. 7d. per lb. for *Bells* and *Flowers*. In *Crude* a large business has been done for arrival, fully 1200 piculs having been sold, at 125s. to 126s. 6d. per cwt. for *Japan*, and 117s. 6d. to 118s. per cwt. for *China*, *c.i.f.*, while there are indications of the probability of a further advance.

Cascara Sagrada. — The position of this article has been strengthened this week by a fair demand, leading to sales of old bark up to 35s. per cwt., and now 40s. per cwt. is generally asked. For new bark 32s. 6d. to 35s. per cwt. is wanted, but there is very little available.

Cinchona Bark.—It is stated that at the auctions which take place in Amsterdam on 16th inst. the exceptionally small quantity of 4489 packages of *Java* bark will be offered. It remains to be seen what effect this fact will have upon price of *Quinine*.

Cloves.—Privately *Zanzibar* firm with sales for March-May and April-June delivery at 3 11/32d. to 3 11/16d. At auction 100 bales *Zanzibar* bought in at 3⅝d. to 3⅞d. Of 34 cases *Penang*, 13 cases sold; good pale picked, little damp, at 7¾d. to 8½d., and, without reserve, fair small picked at 6¾d.; common unpicked at 4¾d.

Codeia – Firm at 12s. 6d. per oz.

Coal Tar Distillation Products.—There are no changes to report.

Cocaine.—One maker yesterday advanced his price to 11s. 9d. per oz. for the *Hydrochlorate* in 25 oz. tins for 100 oz. lots, and in view of the position of the *Crude* article, it would appear more than probable that other makers will shortly do the same; from second-hand there are still sellers of good and reliable brands of this article at 10s. 3d. to 10s. 6d. per oz. for 100 oz lots.

Cod-Liver Oil—Quiet at 62s. 6d. to 67s. 6d., according to brand etc., for best 1898 non-congealing *Norwegian Oil* in tin-lined barrels of 25 gallons each.

Cream of Tartar.—First white crystals, spot 72s 6d. per cwt.; powder, 74s. 6d. to 77s. 6d. per cwt.

Ginger.—The market for *Cochin* has been very active on buying for United States account and prices for rough brown have risen to 28s. At auction of 959 packages *Cochin*, 225 packages sold at dearer rates, good medium cut B at 63s, small rough partly cut 36s. to 36s. 6d., washed rough, new crop, medium and small, little bold bright, at 29s. 6d., brown rough medium and small at 25s., dusty cuttings 15s. *Japan*: 140 bags bought in. *Jamaica*: Dull, 179 packages being all bought in. 1 bag *St. Lucia* sold at 61s.

Glycerin—Quiet and without change.

Gum Mastic.—Demand is very limited but holders are firm at 1s. 8d. to 2s. for clean pale tear and 1s. to 1s. 3d. for milky and yellow.

Gum Tragacanth.—Demand continues good, and business would be larger were it not for the very high prices asked by importers. A few lots of fourths and lower grades have been disposed of at full rates. Quotations are as follow:—*Baydad* firsts £14 per cwt., seconds £13 10s. per cwt., thirds £12 per cwt, fourths £10 15s. per cwt.

Iodides and Iodine—Are unchanged.

Ipecacuanha.—Small sales have taken place this week up to 13s. 6d. per lb. for *Rio* root. Two steamers have arrived from the Brazils during the past few days, but only 1 bale has thereby been added to the depleted stock, and it seems pretty evident that it will be some time before arrivals of any importance come in. For *Carthagena* 9s. per lb. has been paid.

Menthol—Is firm with the prospect of higher prices. Holders ask 8s. per lb. for good dry white crystals.

Mercurials.—In consequence of advance in quicksilver manufacturers advanced prices yesterday 1d. per lb. to 2s 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive Sublimate*, other preparations being higher accordingly.

Morphia—Is quiet and unchanged.

Oils (Essential).—*Peppermint*: H.G.H. is rather firmer at 5s. 4½d. to 5s. 6d. per lb. *Wayne County* steady although transactions are small, quotations range from 3s. to 3s. 9d. per lb., according to quality. *Lemon*: some business has been done at 3s. to 3s. 6d. per lb. this week. *Star Aniseed* is quiet at 6s. 1d. per lb. *Cassia* steady at 5s. to 5s. 3d. per lb. for 80 to 85 per cent., and 4s. 9d. to 5s. per lb for 75 to 80 per cent. *Lemongrass* unchanged at 2⅞d. to 3d. per oz. *Citronelle* very quiet and tending easier; tins 1s. 1d. per lb.; drums 11½d. to 1s. per lb.

Oils (Fixed) and Spirits—Are practically without change, excepting that *Linseed Oil*, *Rape Oil* and *Cottonseed Oil* are all 10s. to 20s. per ton dearer, according to position. *Castor Oil* is also firm.

Opium—Has been in rather more demand at somewhat weaker prices, at which some business has been done in *Druggists'*, as also in *Persian* for manufacturing purposes, at 10s. to 10s. 6d. per lb.

Potash Compounds—Are quiet but steady at unchanged prices.

Senna.—Business has been very active this week in all grades of *Tinnevelly*, a considerable quantity having changed hands at decidedly higher rates, especially for medium sized leaf of fair colour. When it was seen that the 300 bales for auction this week were of very poor quality, and that the next steamer from Bombay brought nothing, second hand holders raised their prices again, and for the moment buyers were unwilling to go on. Everything points to a considerable shortage before the new crop arrives in August next.

Quicksilver.—Importers yesterday advanced price to £8 5s. per bottle.

Quinine — Market is getting somewhat excited, and, while makers' prices for best brands of *German Sulphate* in 100-oz. tins for 1000 oz. lots remains nominally 10½d. per oz. they however declining to book orders (stating they have none to offer), the article has been sold by second-hand holders at 1s. per oz. for *B. & S.* on the spot, and 1s. 0½d. per oz. for forward delivery. Everything

would appear to point to the probability of a further a dvance in value of this article.

Soda Compounds.—There are practically no changes to report.

Spices (Various).—*Black Pepper*: 57 packages Singapore sold, fair at 5¼d. *White Pepper*: of 277 packages Singapore, 43 packages sold at firm rates, fair at 8¾d., fine, in cases, 10½d.; 58 bags Penang sold, fair at 7⅞d. *Chillies* quiet; 20 bales Zanzibar sold, fair at 35s. *Cassia Lignea* dull, 18 cases being bought in. *Cinnamon Chips*: of 388 bags Ceylon only 51 bags sold, in odd lots, at 4d. to 7¾d. *Mace* quiet; of 28 cases Penang 5 cases sold, good bold pale reddish, little wormy, at 2s.; 13 cases West India sold, ordinary red to good pale at 1s. 4d. to 1s. 8d. *Pimento* quiet; of 400 bags only 77 bags sold, fair to good at 4⅜d. to 4½d.

Sulphate of Copper—Is firmer in sympathy with the *metal*, being quoted £22 to £23 10s. per ton on the spot, according to make.

Sulphonal—Makers' price is unchanged at 17s. per lb. for both *Bayer's* and *Riedel's*.

Thymol.—Firmer at 8s. to 8s. 6d. per lb, according to make, quantity, and packing.

To-day's drug auctions passed off quietly, a great many of the lots offered failing to find buyers. The following are the particulars of what was sold, and of prices required by holders:—

Aloes.—1102 gourds *Curacoa* sold cheaply at 30s. per cwt. for good livery down to 18s. 6d. for slightly darker in colour; 10 boxes selling at 26s. for good livery down to 16s. per cwt. for lower quality; 10 boxes *ditto* also sold very cheaply without reserve at 12s. 6d. per cwt; 18 cases good, hard, bright *Cape* bought in at 24s. per cwt.

Ambergris.—3 tins black undeveloped, but of which part showed signs of developing, bought in at 25s. per oz. 1 parcel of 6¼ oz. fine flavoured grey sold at 65s. per oz.; 4 oz. mixed pieces at 50s.; and 5½ ozs. black undeveloped at 29s. per oz.

Aniseeds.—117 bags fair *Russian* held for 17s. per cwt. 20 bags *Syrian* bought in at 21s.

Annatto Seeds.—33 bags and 1 barrel were bought in; fair dry bright at 3d. per lb., good bright at 4d., dull being held for 2¾d. per lb.

Argol.—54 bags white *Cape* were held for 50s. per cwt., a bid of 45s. being declined.

Asafetida.—115 cases, lately arrived from Bombay, were offered. 1 case heavy darkish and slight softish block, with some fine, sold at 50s. per cwt., this being the only case which passed the hammer. Quality on the whole was very poor, and full rates were asked.

Balsam Copaiba.—5 cases of fair quality which were catalogued had been sold prior to the auctions. Price obtained did not transpire.

Balsam Peru.—4 cases were bought in at 8s. 3d. per lb., which was the price required.

Balsam Tolu.—5 cases of good quality were taken out at 1s. 6d. per lb.

Bay Rum.—2 casks *West Indian* were bought in at 3s. per gallon.

Belladonna Root—3 cwt. crushed in parcels again offered and bought in at 50s. per cwt.

Buchu Leaves.—Of 26 bales 3 bales fine green rounds sold at 6¼d. to 6½d. per lb., fair *ditto* at 5¾d., fair longs at 5¼d. per lb.

Canada Balsam.—6 casks bought in at 1s. 7d. per lb.

Canella Alba.—2 bales of medium rather dull quality realised 36s. per cwt.

Cardamoms.—In all about 250 cases were catalogued. Some fine, bold, pale Ceylon-Mysore of the favourite brand "Delpotonoya" sold at 3s. 11d. to 4s. per lb., the second pile realising 3s. 6d. per lb., and the third and fourth piles 2s. 10d. to 2s. 11d. per lb. Decorticated sold 2s. 9d. to 3s. per lb.; fair Malabar realised 2s. 4d. to 2s. 5d. per lb.; whilst good, of Mangalore character, sold at 2s. 11d. per lb.; good heavy wild sold at 3s. 9d. per lb.

Cascarilla Bark.—12 bales sold at the high price of 65s. per cwt. for good pale quilly, thin twiggy fetching 30s. to 35s. 5 barrels siftings sold, subject to approval, at 22s. 6d. per cwt.

Castor Oil.—*Calcutta* firsts bought in at 3¾d. to 4d. per lb., seconds at 3½d. *French* held for 3½d., and *Italian* for 4d. per lb.

China Soy.—50 casks of fair quality were bought in at 1s. 3d. per gallon.

Chiretta.—12 bales of fair quality bought in at 5½d. to 7d. per lb., 2½ cwt. powdered ditto in parcels being held for 7d. per lb.

Cinchona Bark.—7 baskets *Java* sold at 4¼d. per lb. 19 bales crown bark, chiefly bought in at 8d. down to 6d. per lb; one bale selling at the latter figure. 25 bales yellow bark sold prior to sale, at prices which did not transpire. 46 packages red bark chiefly bought in at 1s. per lb. 2 bales of fine, but badly damaged, selling at 2s. per lb.; 5 bales *Carthagena* bought in at 6d. per lb. 3 packages *Madras* Cinchona at 1s. per lb.

Coca Leavea.—8 bales fair broken *Truxillo* sold at 5d. per lb.

Colocynth.—7 casks sold very cheaply at 10d. to 10½d. per lb. for good pale but rather small *Turkey* apple, 1 case dark broken and damaged selling at 8d. 8 cases fair medium to bold rather dull ditto were held for 11d. per lb.

Colombo Root.—Market is somewhat lower, 277 bags dull sorts selling at 12s. per cwt. for fair but slightly wormy down to 9s. for low inferior quality, fair to good being held for 18s. to 35s. per cwt. 8 bags small to bold sorts realised 16s.

Croton Seeds.—11 bags of rather dull appearance were bought in at 75s. per cwt., while another parcel sold at 71s. to 72s. per cwt. for good down to 56s. per cwt. for lower dull.

Cubebs.—53 bags of good quality were held for 26s., 20 bags fair selling at 23s. per cwt.

Cus Cus Root.—93 bales bought in at 10s. per cwt.

Cuttlefish Bone.—42 mats fair small to boldish realised 2½d. per lb., 10 mats small, part broken, selling at 1¾d. per lb.

Dragon's Blood.—29 packages were catalogued. Of these 2 cases very dark seedy lump sold "without reserve" at 87s. 6d. to 100s. per cwt. Some bold lump of bright colour but damp held for £12, whilst dark saucers, also damp, were held for £11, a very full price. 10 bales of very common drop were bought in at 12s. per cwt.

Ergot of Rye.—10 cases fair *Spanish* were bought in, price required by holders being stated to be 2s. 10d. per lb. 8 casks ditto held for 2s. 6d. per lb. (a bid of 1s. 6d. per lb. being refused) down to 1s. 10d. per lb. for rather dark in colour and 1s. 6d. per lb. for very wecvily.

Essential Oils.—3 cases *Star Aniseed* held for 6s. 2d. per lb. 10 cases *Lemongrass*, each 12 bottles of 22 ozs., bought in, price required being 2⅞d. per oz. 4 cases *West Indian Bay Oil* held for 5s. 6d. per lb. 2 cases *Cinnamon* for 1s. 3d. per oz. 14 cases *Cinnamon Leaf* for 3½d. per oz. 1 case *Dodge and Olcott's Sassafras* for 1s. 7d. per lb. 1 case *Wintergreen* of same make for 4s. 6d. per lb. 6 cases Wayne County *Peppermint* for 3s. 6d. to 4s. per lb. 3 cases *Pasquales Lemon* for 3s. 2d. per lb. 2 cases *Bergamot Pasquales super.* for 9s. per lb. 1 drum *Citronelle* for 1s. per lb., 3 drums selling with all faults and without reserve at 4½d. per lb. 6 cases *Eucalyptus Globulus* at 1s. 11d. per lb.; 4 cases commercial at 1s. per lb.; 4 cases ditto *Globulus Platypus* brand, guaranteed 55 per cent. eucalyptol and B.P., 1898, at 2s. 2d. per lb.

Gentian Root.—44 bales, part split root, of fair quality, were held for 17s. per cwt.; 21 bales fair *ditto* for 16s. 3d.; 25 bales selling at 16s. and 1 bale without reserve at 13s. per cwt.

Guaza.—Further arrivals have come in, and moro is on the way, so that we may shortly expect a return to ordinary values. At to-day's sale a part sold at 5½d. per lb., which is lower on last auction, but for arrival it is said 5d. per lb. is asked.

Galangal Root.—1 bale sold at 26s. per cwt.

Gum Ammoniacum.—10 cases medium block were held for 27s. per cwt.; 4 cases good clean block bought in at 41s.

Gum Arabic.—2 cases medium picked sorts sold at 75s. per cwt., subject to approval, fair grain held for £6 12s. 6d.; fair white picked for £7 10s.; good sorts for 80s. per cwt. 1 cask white *Mogador* gum was held for 47s. 6d.

Gum Benjamin.—*Sumatra* was in fair supply and sold well; fine seconds realising £11 2s. 6d. per cwt. for a nice lot; good seconds sold at £8 15s. per cwt.; fair ditto £6 15s. per cwt. Fair *Penang* sold at 55s. to 57s. 6d. per cwt. Of *Siam* all qualities were bought in. *Palembang*: 8 cases, each 8 tins, sold at 41s. per cwt., a good price, this grade being scarce.

Gum Elemi.—10 cases yellow were held for 45s. per cwt.

Gum Guaiacum.—5 cases low drossy sold at 2¾d. per lb.

Gum Kino.—6 tins genuine *Cochin* were held for 8s. per lb., while for another lot of 3 cases 7s. 6d. would probably have been accepted. 2 cases African failed to find a buyer, highest bid being 2s. per lb.

Gum Myrrh.—11 casks good sorts were bought in at 100s. per cwt. 2 cases and 4 bags fair at 85s., down to 45s. per cwt. for siftings. 16 packages held for 65s. down to 25s. per cwt. for pickings.

Gum Sandarac.—12 casks part sold at 52s. per cwt. for good pale.

Ipecacuanha.—20 bales *Rio* and 19 packages *Carthagena* were offered, but only 2 bags of the latter sold at 9s. per lb. For *Rio* there was an easier feeling, importers being ready to accept 13s. per lb. without finding buyers thereat, whereas privately 13s. 6d. per lb. was paid a few days ago. The stock, however, is very small, both here and in France.

Kamala.—6 cases fair bright were bought in without mention of price

Kola Nuts.—3 barrels of good quality, but slightly mouldy, were bought in at from 5d. to 8d. per lb.

Jalap.—8 bags small heavy *Vera Cruz* held for 6½d. per lb. 8 bales good ditto for 6¾d. per lb.

Lavender Flowers.—41 bags of pale colour but much mixed with dust, etc., failed to find a buyer, a suggested price of even 5s. per cwt. finding no supporter.

Musk.—2 caddies *Tonquin, China* sorted, bought in at 46s. per oz. 3 caddies ditto, thin skin blue, a few broken at 70s. per oz. 3 tins brown and blue thin skin held for 50s., and 1 case of fashioned for 25s. per oz.

Nux Vomica.—43 bags fine bold *Cochin* were held for 14s. per cwt., a bid of 11s. being refused. Good small bright bought in at 12s. per cwt.

Orange Peel.—11 cases fair, new, thin cut were held for 7d. per lb.

Orris Root.—8 bales *Verona* sold at 23s. per cwt.

Pellitory Root.—1 bale of fair quality sold at 24s. per cwt.

Quinine.—1 case *Sulphate B. & S.* brand, containing 50 tins, each 1 kilo. nett, was bought in at 1s. 1d. per oz , a bid of 11d. per oz. being rifused. Of 10 cases ditto *Imperial* brand part was apparently sold at 11d. per oz. ; 2 cases *Gold and Silver* brand bought in at 1s. per oz.

Rhatania Root.—6 bales bought in at 7d. per lb.

Rhubarb.—In good supply but very little sold. *Canton* : fair round and flat mixed sold at 11d. per lb., rough pickings of fair colour at 9d. to 10½d. per lb., small trimming root at 1s. per lb., subject to importers' approval; common rough high dried but of fair colour sold in part at 6d. per lb.

Sarsaparilla.—17 bales fair fibrous *Jamaica* sold readily at 1s. 7d. per lb. down to 1s. 5d. for 1*COD* and 1s. 4d. for 2*COD*. 2 bales grey and red native held for 1s. 5d. per lb. 2 bales red native sold at 1s. 2 bales good ditto at 1s 2d. 6 serons *Honduras* part sold at 1s. 6d. per lb. for good quality. 6 bales fair *Jamaica* at 1s. 5d. per lb., 15 bales *Lima* being held for 1s. 2d. to 1s. 3d. per lb.

Senna.—The about 300 bales of *Tinnivelly* which have lately arrived were of poor quality, but the whole sold with strong competition at from 1¾d. per lb. for very spotty yellow leaf, to 3d. for fair coloured but small leaf. For medium sized leaf of good colour up to 5½d. per lb. was paid. No *Alexandrian* leaf was offered, but fine quality is wanted.

Squills.—26 bags good bought in at 4d. per lb.

Tonquin Beans—10 casks fair to good *Angostura* was held for 2s. 9d. per lb. ; 2 cases of *Para* for 1s. per lb.

Vanilla.—Of about 100 tins offered the bulk was of the Tahiti variety of new crop, but not a single tin sold. *Tahiti* bought in at 9s. 6d. to 10s. per lb., whilst good *Bourbons* were held for 25s. to 27s. per lb.

Wax.—119 pockets fair *Madagascar* part sold previously, balance realising £6 10s. per cwt, ; 9 cases *Italian* were held for £6 10s., 8 cases inferior selling without reserve at £5 per cwt. ; 2 cases medium *Bombay* sold at £5 5s. ; 1 cask *Jamaica* at £7 5s. per cwt.

Bank rate reduced to-day to 3 per cent.

Manchester Chemical Report.

February 1, 1899.

There is a fair turn-over in heavy chemicals, and although there is no quotable change this week there is a feeling that higher figures are not unlikely in the near future. Sulphate of Copper is advancing rapidly, and ranges from £23 to £23 10s. per ton, best brands, delivered Manchester. In some instances, Brown Acetate is higher, but this only applies to good quality. Grey remains firm at the late advance. Acetate of Soda is strong at £14 10s. per ton, spot. Salt Cake is steady at 27s. 6d. to 28s. 6d. per ton in bulk. Glycerin is unchanged at £47 10s. per ton for English chemically pure, tins and cases, *f.o.b.* or *f.o.r.* Liverpool and Manchester district. Recovered Sulphur varies from £4 12s. 6d. to £5 per ton, according to point of delivery. Tin Crystals are quoted 6½d. per lb., with prospect of higher figures with the continued rise in the metal. Lancashire made Yellow Prussiate is firm at 7d. to 7¼d. per lb. Cyanide of Potash is scarce at 1s. 1d. per lb. White Powdered Arsenic has recovered somewhat, and is now quoted £17 per ton, ex-ship Garston. The oil trade of the port of Manchester is increasing rapidly, three large tank steamers having arrived within a week with an aggregate between three and four million gallons of oil.

Liverpool Market Report.

February 1, 1899.

The attention commanded by Castor Oils last week continues, considerable amounts of French and Calcutta have sold at good rates for forward delivery, and full spot prices are the rule. A rise in the price of Spirits of Turpentine has brought this article to 1s. 3d. per cwt. dearer than last week. Amongst the miscellaneous sales may be mentioned dried Kola Nuts, Gambia Beeswax, Chilian Honey, Grey Carnauba Wax, and Gum Arabic, all at good prices. Chemicals generally exhibit the improvement existing last week.

Ammonia Salts.—*Carbonate* is steady at 3d. per lb. *Sal ammoniac*: 33s. to 35s. per cwt. according to quality. *Sulphate* : £10 10s. per ton.

Beeswax.—21 bales of Gambia made £6 7s. 6d. per cwt.

Canaryseed.—Though still quoted at 27s. to 28s. per 464 lb. Turkish seed has not sold to any extent.

Carnauba Wax.—Fifty bags of grey went for 32s. to 35s. per cwt.

Copperas—Is very firm at 39s. per ton for Lancashire and 37s. for Welsh.

Copper Sulphate—Is very strong, and at time of writing £22 10s. per ton is asked for spot lots, and £23 for lots in March.

Gum Arabic—Sorts have been selling at 68s. to 75s. per cwt.

Honey.—Chilian Pile 1 has changed hands at 25s. per cwt. and Pile X. at 30s.

Kola Nuts.—41 bags of dried went at 2d. per lb.

Linseed—Is very firmly held, Calcutta for 9d. advance per 416 lbs. on late rates. 100 tons of 4 per cent. Calcutta January-February shipment sold at 38s 3d. per 416 lbs. River Plate "forward" January-February shipment 35s. 9d., March shipment, 35s. 3d.

Oils (Fixed) and Spirits.—*Castor* is very firm, and for the small amounts offered by holders; 3⅛d. to 3⅜d. per lb. is asked for Calcutta, and 3d. per lb. for French, 1st pressure. 500 cases of Calcutta for April-May sold for 3d. per lb., and 250 cases June at the same price; 5 tons French sold ex quay at 2⅞d. per lb., and 75 tuns February to June at £24 10s. to £24 15s. per ton. *Olive*: 15 tuns of Malaga sold at £31 per tun, and all Seville offering on the spot below £31 was rapidly bought up. Spanish prices are £32 to £35 per tun. *Linseed* of Liverpool pressure has experienced a slight rise, bringing it to 18s. 9d. and 19s. per cwt. *Cottonseed* has likewise risen a shade to 15s. 9d. and 16s. per cwt. *Spirits of Turpentine* are very strong in tone, having rapidly risen to 33s. per cwt.

Potash Salts.—*Bichromate*: 3½d. per lb. *Chlorate*: 3½d. to 3¾d. per lb. *Cream of Tartar* continues quiet at 71s. to 75s. per cwt., with more inquiry for French. *Pearlash*: 33s. to 34s. per cwt. *Potashes*: 24s. 6d. to 24s. 9d. per cwt. *Prussiate*: 6¾d. to 7d. *Saltpetre* is scarce at 22s. per cwt.

Soda Salts.—*Bicarbonate*: £6 5s. to £6 15s. per ton. *Borax*: £16 to £17 per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton; 60 per cent., £6. *Crystals*: £3 per ton. *Nitrate*: 7s. 6d. to 7s. 9d. per cwt. spot, with a fair amount of business forward.

Newcastle Chemical Report.

February 1, 1899.

There is very little new to report. Bleaching Powder retains its steadiness. Crystal Soda on home business finds more inquiries for forward shipment. Prices are: Bleaching Powder, according to market, £5 to £5 10s. Soda Crystals, basis, 45s. to 47s. 6d. Sulphur, £4 15s. to £5. Caustic Soda, £7 to £7 5s. Soda Ash, £5. Alkali, 40 per cent., £4 15s. per ton.

Calendar for the Week.

Sunday, February 5. Sexagesima. Sun rises 7.35; sets 4.54.

Monday, February 6. Sun rises 7.33; sets 4.56.

Bradford and District Chemists' Association, Mechanics' Institute, at 8 p.m.—W. L. Howie will give an illustrated lecture on "Five Capitals of Europe."

Dewsbury and District Chemists' Association, Town Hall, at 8 30 p.m.—The following questions will be discussed: Local Pharmaceutical Secretaries, Chemists' Defence Fund, and Dispensing in Surgeries; also arrangements for a General Meeting.

Tuesday, February 7. Sun rises 7 31; sets 4.58.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m. —Professor E. Ray Lankester on the "Morphology of the Mollusca."

Wednesday, February 8. Sun rises 7.30; sets 5.0.

Edinburgh Chemists', Assistants', and Apprentices' Association, 36, York Place, at 9.15 p.m.—Communications by F. M'Diarmid and Geo. Sinclair.

Junior Pharmacy Ball, Portman Rooms, Baker Street, W., at 9 p.m.—Tickets, including supper and light refreshments, 7s. 6d. each.

Manchester Pharmaceutical Association, at 7.30 p.m.— "The Chemistry and Tests of the Pharmacopœia" will form the subject of a paper by A. W. Duncan.

Newcastle on-Tyne and District Chemists' Association, Suttie's Hotel, Clayton Street, at 8 p.m.—Social evening and lantern exhibition by L. Williamson, entitled "Short Holidays with a Camera."

Sheffield Pharmaceutical and Chemical Society, New Surrey Street, at 8.30 p.m.—Discussion on the Division of the Minor Examination. Opened by J. Preston.

Thursday, February 9. Sun rises 7.28; sets 5.2.

Chemists' Assistants' Association, 73, Newman Street, W., at 9 p.m.—Paper on "The Alleged Decline of Pharmacy and Pharmaceutical Research," by F. A. Upsher Smith.

Glasgow and West of Scotland Pharmaceutical Association, 94, West Regent Street, at 9 p.m.—"Amateur Pharmacists and the Pharmacopœia," by Alex. Laing.

Liverpool Chemists' Association, Royal Institution, at 7 p.m. —Lecture by Professor Robert Boyce on "Bacteriology in Relation to Pharmacy."

Midland Pharmaceutical Association.—Smoking Concert.

North-East Lancashire Chemists' Association, White Bull Hotel, Blackburn.—Annual Dinner. Non-members' tickets, 3s. 6d. each.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m. —Dr. Allan Macfadyen on "Toxins and Antitoxins."

Sheffield Pharmaceutical and Chemical Society, Masonic Hall.—Annual Chemists' Ball.

Friday, February 10. ● 9 23 m. Sun rises 7.26; sets 5.4.

Aberdeen Junior Chemists' Association, North Silver Street Hall, at 9.30 p.m.—"Ice Sculpture" will be the subject of an illustrated lecture by R. Glegg.

Cambridge Pharmaceutical Association, Assembly Rooms, St. Andrew's Street, at 8 30 p.m.—Conversazione and Dance.

Irish Pharmacists' Assistants' Association, Ancient Concert Rooms, Dublin.—Annual Ball.

School of Pharmacy Students' Association, 17, Bloomsbury Square, W.C.—Paper by Mr. Padwick on "The Baobab Tree and its Uses."

Saturday, February 11. Sun rises 7 24; sets 5.5.

Manchester College of Pharmacy, 225a, 227a, Oxford Street, at 6.30 p.m.—Conversazione and Musical Evening.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Alcock, Aspinall, Austin, Bennett, Bowdler, Branch, Browne, Bullivant, Clarke, Cummings, Douglas, Dowzard, Evans, Fawcett, Forster, Foulis, Gadd, Gelston, Gibson, Gifford, Gilderdale, Hardwick, Harrison, Hill, Holloway, Jack, Keen, Lee, Mayo, Merck, Metcalfe, Mitchell, Perrédès, Phillips, Platt, Postlethwaite, Raimes, Reynolds, Roberts, Sachsse, Segg, Stanford, Stephenson, Stewart, Strong, Summers, Swanson, Swinton, Turner, Walton, Whineray.

Advertisements.

(Received too late for Classification).

DISPENSERS in Royal Naval Hospitals.—Required immediately Two Dispensers holding the Major or Minor Qualifications of the Pharmaceutical Society, or the Certificate of Qualification required by Sec. 1, Pharmacy Act, Ireland, 1875, for temporary service in naval hospitals at home. Age not under 20 nor over 25. For further particulars apply to the Director-General of Medical Department of the Navy, Craven House, Northumberland Avenue, W.C.

ENGAGEMENT Wanted.—Disengaged after February 18. Energetic Assistant. 36. Single. Abstainer. Out-door. Unqualified. Not for dispensing business. Good general country experience. Xact, 72, High St., Aylesbury.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal' Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns, second-hand; triples and biunials: oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

Aplanatic Magnifier, Watson's new, 20 diameters, cost 14s. 6d.; Green's 'Botany,' vol. i., 1897; Cole's 'Modern Microscopy' (new). Offers to—M., 1, Barford Street, Islington, N.

Overstocked.—2½ × 10 lb. Coppers nice superfine Oil of Lemon, 22s. 6d. copper, sample pound 2s. 6d., carriage and package free; all cash with order.—Moss, 34, Avondale Road, Chorley.

One Hundred Seigel ordinary, paying 10 per cent., price 16s. ex dividend.—Write, A., 12, Eltham Road, Lee, Kent.

Splendid new 12 by 10 Camera, with Ross rapid symmetrical lens, Isoc. screen, stand and case; cost £30; price £15.—Clayton, Chemist, Oxford.

For Sale.—Mahogany-top Counter, three nests drawers; mahogany bent glass counter-case; space wanted.—59, East Road, City Road, London.

'Pharmaceutical Journal,' 1870 to 1898, and 'Chemist and Druggist,' 1860 to 1898, in yearly bundles; also 'Year-Book of Pharmacy,' 1870 to 1898. What offers?—Hocken, 31, Oldhall Street, Liverpool.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Good Microscope, known maker, cheap.—Nall, Milnrow, near Rochdale.

Wanted.—Designs and Estimate for two large window fittings and casings, both large show cases.—Ambrecht, Nelson and Co., Duke Street, Grosvenor Square.

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY.

On Wednesday last a meeting of this Society was held, with Mr. G. Squire, President, in the chair, for the purpose of discussing the question of

The Division of the Minor Examination.

Mr. J. Preston, in introducing the subject for discussion, contended that the time had come when a division of the Minor examination should be made in the interests of the candidate for the Minor qualification, as well as for the credit and honour of the Pharmaceutical Society. The quality and the number of subjects demanded for one examination were unreasonable, though they were extended to two consecutive or intervening days as now. The great range of subjects was too large for the average cranium to store and give out knowledge of, even to considerate and moderate examiners. The physical condition of candidates was too much strained by the present inhuman system, both at the examinations and in preparation for the ordeal during pupilage. It was too much to expect that the examiners themselves could gauge the fitness of candidates in the short time they must give to each. The allied professions, such as the medical and legal bodies, divided up their qualifying examinations, with the intention no doubt of meeting the necessities of the human mind and body. The examinations were now much stiffer than ever before. This year 69 3 per cent. of the candidates were rejected, and the great majority of the rejected ones were condemned to a hopeless future, and went to increase the great curse under which the profession suffered. A greater incentive to study would grow if opportunity were afforded of entering for examination in any subject at any time. If so regulated, there would be greater probability that the knowledge necessary would be gained systematically with a minimum of cram, and as a result a truer examination would ensue. The public interest must be better served by better qualified men than it was under the present *régime*, for all who had come in contact with assistants who had passed, as well as with those who had not, must acknowledge how much more was needed to fit the young men for the responsible positions to which they were called.

The President said there was no doubt that many of the unsuccessful candidates went to the stores. Some men did not pass without years of study. At the last examination a man got through who had presented himself eighteen times. The Society could not do anything better than to make some proposition to the Pharmaceutical Society to divide the examinations.

Mr. Preston proposed .—

> That it is desirable that the qualifying Minor examination be divided, so that any subject may be taken by the candidate at his pleasure, at any time during his pupilage, only that the final subject be taken at or after the age of 21.

Mr. Ibbitt seconded the motion.

Mr. Turner thought one reason of the great number of failures was the low standard of the Preliminary examination ; and more mischief had resulted from allowing men to enter for the Minor examination within six months of passing the Preliminary. He advocated examination in chemistry and botany two years after the Preliminary, and the final examination in materia medica, pharmacy, and dispensing after a further two years.

Mr. Morrison supported the division of the examination, because it would train men rather than cram them, because it would give candidates opportunity to learn and study, which they had not at present, and because it would end in better qualified men entering the business. He warned forthcoming candidates, however, that division would not mean easier examinations. If there were only two or three subjects at the final examination, candidates would be expected to know more about them.

Mr. Ellinor advocated an examining board for Yorkshire, another for the North of England, and another for the Midlands.

Mr. Carr and Mr. Meadley supported the resolution, which was carried.

Essay Competition.

The result of the Essay Competition among the students on "The best method of education for pharmaceutical students" was announced by Mr. Morrison. The first prize was awarded to Mr. W. Coulshead, and the second to Mr. A. Yates.

Forthcoming Presentation.

At the next monthly meeting of the Society, a portrait which has been subscribed for by a number of the members of the craft in Sheffield will be presented to Mr. William Ward, in recognition of his twenty-one years' service as hon. local secretary of the Pharmaceutical Society of Great Britain.

MANCHESTER PHARMACEUTICAL ASSOCIATION.

At a meeting of this Association held on Wednesday last, Mr. G. Woolley, President, in the chair,

Mr. A. W. Duncan read a paper on

The Chemistry and Tests of the Pharmacopœia.

He said in his opinion the Pharmacopœia should not aspire to the position of an analytical text-book. It should state the degree of purity required, specific gravity or other co-efficients, and leave the analyst to choose his own methods wherever they can be readily learnt from recognised sources. When there is no standard method of obtaining a co-efficient, and it varies with the method employed, directions should, of course, be given. This had been done in the determination of the melting point of beeswax. It had been omitted in fractionating terebene. The quantities distilling at the temperatures given vary greatly, according to the conditions which are left to the option of the analyst. If the Pharmacopœa was a book to be given to youths to follow, there might be an excuse for giving details for making ordinary tests, but analytical work is now so complicated and difficult, that men of considerable experience are alone capable of following it. This is the more necessary, as in spite of the elaborate tests given, a skilful adulterator can sometimes circumvent the Pharmacopœia by adding in such proportions as shall not alter within the limits stated, the specific gravity, etc., certain things not provided against in the series of tests. Even if the methods in the Pharmacopœia are the best at the time of publication, long before another edition there will be improvements in the methods of assaying drugs. It is not enough that a drug answers the tests given, as, should a public analyst prove adulteration, a prosecution must ensue. A man who reads and criticises will, as soon as he discovers defects in the Pharmacopœia, or better methods, wish to avoid the errors. Nothing can be so destructive to one's self-respect, and can so spoil an analyst as to be obliged to follow methods against his own judgment simply because they are in the Pharmacopœia. As a matter of fact, he believed that nearly all analysts of experience freely modify or substitute by other means the tests given.

The President proposed that the best thanks of the Association be given to Mr. Duncan for his exhaustive and practical paper. He had brought a heavy indictment against the Pharmacopœia.

The proposition was supported by Mr. Hoseason, by Mr. Gibbons (who said many of the tests of the Pharmacopœia were childish in the extreme and only fit for preliminary students), and by Mr. Grier, who thought that the new atomic weights were too exact and that the old figures did very well.

Mr. Duncan replied after the vote of thanks had been most heartily passed, and

The Chairman, in closing the proceedings, called attention to the long interval which elapsed in the publication of the different British Pharmacopœias (thirteen years), and suggested that there should be a standing committee to make such alterations as might be necessary half-yearly or yearly. There would not then be such a regular "turn-out" as there was when the books were published every thirteen years.

Partnerships Dissolved.

(From the London Gazette.)

G. P. Spooner, G. R. Dunn, and C. J. Bannister (trading as Bessus and Co.), 84, Hatton Garden, London, E.C., so far as regards G. P. Spooner.

Jas. Searson and T. W. Burwood, Physicians and Surgeons, Ealing. Debts will be received and paid by T. W. Burwood.

Benj. Strachan and Angus Campbell, Physicians and Surgeons, 12, Dundas Street, Monkwearmouth. Debts will be received and paid by Angus Campbell.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

Football.—The Pharmaceutical team and the officers of the club had their photograph taken at Shepherd's Bush, previous to last Saturday's match, but, despite this terrible ordeal, they were none too demoralised to inflict a decisive defeat on their opponents, the Old Georgians, by the substantial and well-earned margin of 7 goals to 1. Only seven of the visitors' team turned up, so Finnemore, Carlton, and Martin, the square right half, were drafted into their ranks to make the opposing sides equal, and they rendered them yeoman service, Martin kicking their only goal. The team had reason last week to complain of the bad luck that has recently dogged its path, but it seems that the turn of the wheel has come at last, and the team will make strenuous efforts to improve the goal average in the few matches now remaining. On Saturday the front quintette seemed to have taken over a new lease of life, their passing being well timed and their shooting accurate, the honours of the game certainly resting with them; but the Square defence was, as usual, very sound, though considerably hampered in clearing by the weight of the ball, the one goal secured by the opponents being a "soft" one, owing to the difficulty of getting at the ball on the slippery ground. Goals were kicked by Wild (2), Garsed (2), Lloyd (2), and Padwick (1), two being converted from accurate corner kicks by Stokoe. Wild, Lloyd, and Evans (who is always in good form and to be found where wanted) deserve special mention. Collinette also played a good game, feeding his forwards well when under difficulties. At one time, Grey having the ball and Finnemore going for him, a tussle between the two Bell scholars seemed imminent, when Evans, thinking either that it might detract from the dignity of the Square, or very properly, that a back who has shown such consistent good form in every match is too valuable to be needlessly knocked about, interposed himself between them. Universal thanks are due to Evans for averting what might have been a catastrophe. The Square men lined up as follows: goal, Durbin; backs, Grey, Stokoe; half-backs, Collinette, Evans; forwards, Wild (captain), Padwick, Garsed, Wilkinson, and Lloyd. Mr. Lescher, a popular member of last season's team, kindly officiated as referee. We are always pleased to see old Squaremen associated with the club, and hope to give them a warm welcome at the Old Boys' match on March 18, when the usual smoker will bring the present season to a fitting conclusion. It is hoped that past and present Squareites will turn up in good numbers and bring their friends.

A Reminder.—What is generally regarded as the "Square" meal of the year is fixed for Wednesday, 22nd inst. The Caledonian Room of the Holborn Restaurant, which has been engaged for the occasion, will certainly be a pleasant rendezvous in the circumstances, where old Squaremen of various sessions may meet their former colleagues. There is still room for more, although there has been, and still is, a good demand for tickets. Applications for particulars should be addressed to Mr. F. A. Upsher Smith, Hon. Secretary of the Dinner Committee, 17, Bloomsbury Square, W.C.

IRISH NEWS.

Pharmaceutical Society of Ireland.—At Dublin, on Monday, January 30, the President and Council of this Society entertained a large number of the members and their friends at a Conversazione in Lower Mount Street. The function was an exceedingly brilliant one, the spacious examination halls, which were converted for the occasion into a drawing-room and tea-room respectively, being filled to their utmost capacity by a large and fashionable gathering. The musical programme included over twenty vocal and instrumental pieces of a high order, which were received with most demonstrative marks of appreciation. The arrangements for the creature comforts of the visitors were under the charge of the Ladies' Committee, consisting of Mrs. Downes, Mrs. Wells, Mrs. Beggs, Mrs. Kelly, Mrs. Grindley, Mrs. Ferrall, and the Misses Downes, Grindley, and Wyatt, the last-named young lady acting as President and Secretary of the Committee.

A Chemists' Concert.—On Saturday evening last Mr. George D. Beggs, Vice-President of the Pharmaceutical Society of Ireland, gave a public concert in Dalkey for the benefit of the local inhabitants. The programme was in charge of Mr. W. F. Wel ex-President Pharmaceutical Society, and the performers were for the greater part representatives of pharmacy. Mr. Beggs is to be congratulated on the success which has attended his efforts as a local *entrepreneur*. The Dalkey Saturday Night Popular Concerts, which he started some time ago as an antidote to the "workman's poison," have done a great amount of good in the locality and have been productive of happy homes and healthful habits where such did not previously exist.

Irish Pharmacists' Assistants' Association.—At Dublin on Friday, February 3, the usual fortnightly meeting of the Association was devoted to a discussion on "Some Unusual Prescriptions," and a number of remarkable specimens of medical caligraphy were exhibited and commented on.

Chemists' and Druggists' Society.—The members of the Northern branch of this Society held their annual Conversazione on February 2 in St. George's Hall, Belfast. After tea, Sir James H. Haslett, M.P., President, took the chair, and in a brief address congratulated the Society upon its very creditable and progressive record. He referred to the manner in which those engaged in their business were handicapped by the practice of selling proprietary articles at practically cost price, and said the public required to be educated in the matter of fair dealing and fair prices in connection with these goods. Modern competition was keen, and no one could complain of that so long as it was conducted upon fair business lines, but it was necessary to have a margin of profit in order to run any business.—Mr. W. J. Rankin, Secretary, submitted his report, and the financial statement was brought forward by Mr. Samuel Gibson, Treasurer, both reports being adopted.—On the motion of Mr. John Watson, seconded by Mr. S. Gibson, Sir James Haslett was re-elected President, and Messrs. Gibson and Rankin, Secretary and Treasurer respectively. Messrs. Thomas M'Mullan, John Watson, Wm. Doig, John Campbell, William Jamison, S. Clotworthy, S. Turkington, and James Hogg were appointed Vice-Presidents, and the following Committee were also nominated:—Messrs. S. Acheson, James Brown, Joseph Douglas, W. J. Gibson, W. Lyttle, S. Hill, S. M'Dowell, S. Suffern, J. Frackleton, James Gillespie, H. Backhouse, R. Cambridge, C. Ferguson, J. Gray, T. Gillespie, J. M. Clements, T. W. Reynolds, J. H. Shaw, T. Campbell, J. Walsh, James Richardson, and J. D. Carse. Mr. Robert Diamond was also appointed hon. solicitor for the Society.—After the formal business had been concluded, the remainder of the evening was devoted to music and readings, the following ladies and gentlemen contributing to an excellent programme:—Misses Johnston and Watson; Messrs. J. Brown, Aspinall, Carse, R. S. Thompson, and R. Diamond. Miss Watson supplied the accompaniments most efficiently. Mr. A. R. Hogg (of Messrs. Lizar's) photographed the Committee by flashlight, and also gave an excellent display of the cinematograph.

SCOTTISH NEWS.

Edinburgh Chemists', Assistants', and Apprentices' Association.—The closing lecture of the Association's ambulance class took place last week, and the examination was held by Dr. Michael Dewar in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Monday evening, February 6.—At the close of the examination Dr. Edmund F. T. Price, the ambulance lecturer, proposed a vote of thanks to Dr. Dewar, which was very heartily accorded, and Dr. Dewar, in reply, said from what he had seen in their practical work he had formed a high opinion of the efficiency of the class, which had evidently been excellently well taught.—Mr. G. H. C. Rowland, President, then moved a vote of thanks to Dr. Edmund F. T. Price, and in name of the class presented him with a B. and W. 5 C.c. serum syringe, bearing the inscription, "Presented to Edmund Price, Esq., M.B., by the Edinburgh Chemists' Ambulance Class, February 6, 1899."—Mr. Rowland said the Association hoped to be able to continue the class, and they also hoped they might have the privilege of having Dr. Price as teacher again.—Dr. Price, in thanking the class, said he would be exceedingly pleased to come back as lecturer should he be honoured with the appointment. He thought a knowledge of ambulance work was of special value to chemists. Two members of the class had been able to render most efficient help to a lady seized with an epileptic fit in the street; and but for their knowledge of ambulance work they could not have done so. In several

other instances that had come to his knowledge members of the class had been enabled to render aid in cases of accident.

Aberdeen Pharmaceutical Association.—This Association celebrated its Diamond Jubilee by holding a dinner in the Imperial Hotel, on Wednesday, February 1. The President of the Association, Mr. James Clark, pharmaceutical chemist, occupied the chair. The members turned out exceedingly well, there being between twenty and thirty who sat down to dinner. After dinner the Chairman gave the loyal and patriotic toasts. Mr. Simpson gave the "Aberdeen Pharmaceutical Association," the Chairman replying. Mr. Giles gave "The School of Pharmacy—Gordon's College," Mr. Ellis, teacher, replied. Mr. Craig proposed "The Pharmaceutical Society," Messrs. J. Cruickshank and Johnston replied. Mr. Bruce gave "Our Guests," Mr. Leslie "Town and Trade of Aberdeen," to which Mr. Cran replied. Mr. Urquhart gave "The Ladies," Mr. Mair replied. Mr. Paterson gave "The Chairman." Interspersed with the toasts a number of songs and recitations were rendered by Messrs. Cran, Clark, Cruickshank, Urquhart, and Ross. The company broke up at eleven o'clock, after spending a most delightful evening.

Inverness Chemists' Association.—On Tuesday evening last in the Waverley Hotel, a lecture on "The Serum Treatment of Disease," which is arousing such intense and wide-spread interest was delivered by Dr. England Kerr. Mr. John Fraser, President, occupied the chair, and there was a large attendance. The lecturer dealt in a full and very interesting way with the debatable subject of "Antitoxins," in the efficacy of which under certain conditions he thoroughly believed. He stated that he had used the serum treatment in several severe cases of diphtheria with the best possible results, and while admitting that the system was still to a certain extent on its trial, claimed that there was sufficient evidence to warrant its acceptance as one of the greatest discoveries of the nineteenth century. Specimens of serum and the special syringe used for its injection were exhibited on the table. An interesting and animated discussion followed the lecture. Among the speakers (some of whom were sceptical) were Drs. Moir, Mackenzie, and Maclennan, and Messrs. Fraser, Allan, Junor, Mitchell, Mackenzie and Macleod. After an able and spirited reply by Dr. Kerr, the meeting was brought to a close with votes of thanks to the lecturer and the Chairman.

ENGLISH NEWS.

False Labelling of Seidlitz Powders.—At the Brentford Police Court, on Thursday, January 26, William Griff, of the St. John's Packing Company, Devonshire Square, Bishopsgate Street, London, was summoned for putting false labels on seidlitz powders.—Inspector Tyler said the summons was taken out for the benefit of small retailers of drugs. A Mr. Brown, of Ealing, had been summoned recently for selling seidlitz powders not of the required standard of quality. He had obtained the powders from Messrs. Aldridge and Co., of London, who bought them of the St. John's Packing Company. This company was now being summoned for putting a label on the packets falsely setting forth the contents. This was the first prosecution of a wholesale dealer under the section, in the County of Middlesex.—The defence was that the powders were prepared exclusively for Messrs. Aldridge and Co., according to their own prescription.—A fine of £10 and £3 3s. as costs was imposed.

Football.—The first return match between the Metropolitan College of Pharmacy F.C. and the South London School of Pharmacy F.C. was played at Wormholt Farm, Shepherd's Bush, on Saturday last. At half-time South London were leading by 1 goal to *nil*. After the interval the "Metros." pressed hard and scored, four more goals being added in quick succession, leaving them the winners by 5 goals to 1. The goals were scored for the "Metros." by Negus (2), Bryan, Barton, and Johnson; for the South London by Knowles.

Royal Institution.—A general monthly meeting of the members of the Royal Institution was held on February 6, Sir James Crichton-Browne, M.D., F.R.S., Treasurer and Vice-President, presiding. The following were elected members:—Mr. G. C. Cathcart, Hon. Alan de Tatton Egerton, M.P., Sir Francis Henry Evans, K.C.M.G., M.P., Mr. J. G. Glover, Mr. J. W. Gordon, Mr. J. Gretton, Mr. J. Gretton, jun., M.P., Mr. C. E. Groves, F.R.S., and Mr. A. Ritchie, J.P. The special thanks of the members were returned to Professor Dewar for his donation of £100, and to Mr. Frank Clowes for his donation of £10 10s. to the fund for the promotion of Experimental Research at Low Temperatures. The special thanks of the members were returned to Mr. C. E. Melchers for his donation of £50 for alterations in the Lecture Theatre.

The Late Duke of Northumberland and the Royal Institution.—At the general monthly meeting of the members of the Royal Institution, held on February 6, the following resolution was proposed from the chair by Sir James Crichton-Browne, M.D., F.R.S., the Treasurer, seconded by Sir Frederick Bramwell, F.R.S., the Honorary Secretary, and unanimously adopted: "The members of the Royal Institution of Great Britain in general meeting assembled desire to express to his Grace the Duke of Northumberland their sympathy with him and his family in the loss which they, as well as the Royal Institution and the country at large, have sustained by the death of his father, the late Duke. They desire also to record their grateful sense of the invaluable services rendered to the Royal Institution by the late Duke during his membership of forty-eight years' duration; during seven terms of office as visitor and manager, and as President for twenty-six years; by his active and unfailing interest in its affairs, and in the progress of science, which it is its object to promote; by his generous benefactions to its funds; and by the true nobility of his character, which has lent distinction to its proceedings during an eventful period of its history."

A Commission Claim.—In the Lord Mayor's Court, on Feb. 3, Messrs. Judd and Manners, business transfer agents, 76, Cannon St., London, sued Mr. Arthur Pumphrey, formerly carrying on business at Burnham, Somerset, to recover £23 15s., commission on the introduction of a purchaser for that business. Mr. Lewis Glyn (instructed by Mr. Greig) was counsel for the plaintiffs, and Mr. Lowe (instructed by Mr. Meredith) represented the defendant. Mr. Manners said that about July, 1898, the defendant instructed his firm to find a purchaser for his chemist's business at Burnham. The plaintiffs sent a form to the defendant, and he filled it up. The plaintiffs agreed to make no charge for commission unless a sale was effected. On August 16 a Mr. Hutching instructed the plaintiffs to sell his business. He (Mr. Hutching) inquired for another business, and the plaintiffs recommended him to purchase the defendant's business, particulars of which were given. The plaintiffs afterwards found that Mr. Hutching had purchased the defendant's business. Upon the plaintiffs inquiring the amount of the purchase-money, in order to make their claim for commission, the defendant wrote saying that Mr. Hutching had his attention called to the business through an advertisement in a trade journal, and that the sale had not been effected through the instrumentality of the plaintiffs.—The defendant was called, and said that prior to June, 1898, he determined to sell the business carried on by him at Burnham. He had several letters from the plaintiffs asking to be allowed to act as agents for him. He eventually agreed to the plaintiffs acting in the matter. The plaintiffs introduced one person to the business, but nothing came of it. He (defendant) being anxious to dispose of the business, inserted an advertisement in a trade journal, and in reply he received an answer from Mr. Hutching, to whom he gave particulars, and who eventually purchased the business for £850.— Mr. W. F. W. Hutching, carrying on business at Burnham, was called, and said that Mr. Manners spoke to him about various businesses upon August 16. The defendant's business was not mentioned by name, and he had not asked for the particulars of that business to be sent. He was not in any way influenced in purchasing the defendant's business by the plaintiffs. All the information was given to him by Mr. Pumphrey. The jury found a verdict for the plaintiffs for the amount claimed.

Attempted Poisoning Case.—At the Essex Winter Assizes, Elizabeth Walford (19), servant, was indicted for administering strychnine to Elizabeth Sophia Marlar, her mistress, the wife of a chemist and druggist of Halstead, with intent to injure or annoy, on December 15 last (see *P. J.* [4], 7, 676*d*).—The prisoner handed in a written statement to the effect that she gave her mistress the strychnine for the purpose of annoying her, and not for the purpose of injuring her. She was sorry that she should have done

such a wicked trick, and she hoped her mistress would forgive her. —The Judge said he did not think that it was likely that the prisoner intended to make her mistress very ill, but it was a very nasty thing to do, and he had no doubt she did it to spite her, and that she was careless of the consequences. Therefore it was not a case which he could treat lightly. The offence was a dangerous and malicious one, and it was a very serious thing to happen in anyone's family. She would be sentenced to eight month's hard labour.

Westminster College of Chemistry and Pharmacy.—We are requested to state that Tuesday, February 14 (St. Valentine's Day), being the jubilee anniversary of Mr. G. S. V. Wills's birthday, the usual annual excursion of the Westminster College will not take place this year on that date. It is Mr. Wills's intention to celebrate four events (all of which happen in the year) at the same time in July next. Notice of the date will be given in due course, probably about the 16th. The events are: 1, Mr. Wills's jubilee anniversary of his birthday; 2, Mr. and Mrs. Wills's silver wedding; 3, the coming of age of his only son; 4, the twenty-fifth anniversary of the opening of the Westminster College (September, 1874). Mr. Wills's biography is being written as a jubilee souvenir for the occasion.

Damages against a Chemist.—William Bartholomew Wood, a music-hall artiste, residing at 127, Kennington Road, sued, at the Lambeth County Court, yesterday, J. Healy, Henry Thos. Luff, and Mary Maria Healy, carrying on business as chemists and druggists at 151, Kennington Road, to recover damages, laid at £50, for pain and suffering caused by the defendents' negligence.—The case for the plaintiff was that on November 25 his wife purchased a sixpenny bottle of carbolated vaseline of the defendant, a compound used by persons in his profession. There was, however, too much carbolic acid present, and the result was that when Mr. Wood applied the preparation to his face, he was dreadfully burned.—Dr. Barratt, of New Bond Street, stated that if Wood had commenced at the top of his face instead of on his chin, he would probably have lost his sight. —During the further hearing of the case, it transpired that the vaseline was carbolated by a young man who was only six months qualified.—The jury returned a verdict for the plaintiff, with £20 damages. Costs were given on the higher scale.

Bradford and District Chemists' Association.—On Monday, February 6, Mr. W. L. Howie delivered his lecture at the Bradford Mechanic's Institute on "Five European Capitals." After the lecture members of the Association, along with Mr. Howie and Mr. Daniels, adjourned to the County Restaurant, where, supper over, Mr. Waddington, on behalf of the Association, presented Mr. Howie with a handsome silver cigar-case.—Mr. Howie made a very appropriate speech, and the rest of the evening was spent with music and song.

Mr. Richard Lacey, of Abingdon, thinks that while the present question of further safeguarding the rights of chemists is agitating the minds of the fraternity, the following little incident may not be out of place as showing the ideas of some persons concerning the craft: A country customer, while purchasing a powerful drug, about which the usual caution was administered, replied as follows: "Oh! I'm the chemist at D——" (a neighbouring village). He possessed a 5*s.* "patent" medicine licence, which he was willing to produce if his qualification was doubted!

Junior Pharmacy Ball.—This event passed off with great *éclat*. Mortlake Mann's very excellent band performed to the extreme satisfaction of nearly 350 dancers. Amongst those present were Mr. and Mrs. Walter Hills, Mr. and Mrs. Francis, Mr. W. Warren, Mr. R. Bremridge, Mr. and Mrs. J. C. Umney, Mr. T. Morley Taylor and Miss Mary Taylor, Mr and Mrs. E. W. Lucas, Mr. F. W. Gamble, and many others well-known in pharmaceutical circles. Mr. Walter Hills, who took the chair at supper, in proposing "Success to the Junior Pharmacy Ball" and "The Ladies," said the evident success must be due to the efforts of the very able Secretary, Mr. W. Henson, and the strong committee that supported him. Mr. Henson suitably replied, and proposed the health of "The Chairman," expressing the thanks of the Committee for Mr. and Mrs. Hills' attendance. Messrs. C. Martin and R. Cassie efficiently performed the duties of M.C.

A Candid Advertisement.—The *Yorkshire Post* of Saturday last contained the following advertisement:—"WANTED, young man as Dispenser; knowledge of dispensing not necessary.—Address, stating salary expected, R. 69, the *Yorkshire Post*, Leeds." If any pharmacist applied for the position it would be interesting to know further particulars. It may not be too late to apply, even now.

Trade Notes.

Messrs. Evans, Gadd and Co., Fore Street, Exeter, send a sample 6d. tin of Ambrosia Pastilles, which they are putting on the P.A.T.A. list. The protected minimum prices are as follows: Minimum retail price, 6d. and 1s. tins; minimum trade price, 4s. 6d. and 9s. per dozen. The pastilles, as the name implies, are prepared with the firm's well-known preparation "Ambrosia," and put up in a neat, prettily-decorated tin, should make a good selling article, yielding a fair profit.

Messrs. Ayrton & Saunders, Liverpool, ask us to mention that owing to Messrs. A. E. Whittome & Co., of Auckland, relinquishing the drug portion of their business, the agency for the Liverpool firm has been transferred to Messrs. Ellis, Sellgren & Co., Elliott Street, Auckland, N.Z., who hold samples and stock.

Messrs. W. H. Willcox and Co., Ltd., 23, Southwark Street, London, S.E., send a copy of their new 1899 circular of semi-rotary pumps, double and quadruple acting, mounted and unmounted. The illustrations show the easy and simple manner in which the semi-rotary pump can be fitted up by users to suit various requirements, also giving a slight idea of its general usefulness and adaptability for almost all purposes to which a pump can be used.

'Merck's Digest' is a new periodical published by the well-known firm of E. Merck, Darmstadt, and is a collective investigation of the newer materia medica. It is intended thus to publish a periodical selection of reports on clinical experiments made with some of the firm's preparations. The first few numbers, dealing with already well-known remedies, will be followed by reports on recent introductions and new drugs, as occasion may arise. Copies of 'Merck's Digest' will be forwarded regularly and free of charge to all medical men, chemists, or anyone in the profession applying to E. Merck, 16, Jewry Street, London, E.C.

Messrs. Thomas Christy and Co., 25, Lime Street, London, E.C., have been appointed agents for the Vass Chemical Company, of Danbury, Connecticut, U.S.A., which is introducing to the medical profession in this country its product "Thialion," a laxative salt of lithia. The cases reported in a pamphlet bearing upon the product have already aroused considerable interest amongst the medical profession on this side, and as chemists in all parts of the country are likely soon to have a demand for the article, it will be wise for them to make a "mem." in connection with it, so that they may lose no time in filling the wants of their customers.

Mr. B. Küiin, the manager of the Chinosol Hygienic Co., of 36, St. Mary-at-Hill, E.C., has issued a pamphlet reviewing the steady growth in popularity of the well-known antiseptic, deodorant, and disinfectant. A large number of reports have appeared in the columns of the medical press from time to time, recording its use in surgical practice, obstetrics, gynæcology, and ophthalmic surgery. It has also found favour in combination with boracic acid in the treatment of syphilitic ulcerations. A well-known West-end surgeon in one of a series of lectures delivered in connection with a post-graduate course reports as follows: "A most obstinate case of syphilitic lupus of three years' duration, which had resisted the iodides internally and iodoform locally, recovered in three weeks under treatment with chinosol powder. This was only one of a number of cases in which it had proved most effective in various forms of syphilitic ulcerations." It has also met with considerable success in the treatment of milk fever in cows. A series of three cases of this once very fatal disease is recorded in the *Veterinary Record*, two of which were successfully treated by an injection of chinosol solution.

Calendar for the Week.

Sunday, Feb. 12. Quinquagesima. Sun rises 7.23; sets 5.7.

Monday, February 13. Sun rises 7.21; sets 5.9.

Pharmaceutical Society of Ireland, 67, Lower Mount Street, Dublin.—Evening meeting, when a paper will be read by George Brown, on "Compressed Tablets."

Tuesday, February 14. Sun rises 7.19; sets 5.11.

Bradford and District Chemists' Association, County Restaurant.—Musical evening, arranged by Mr. Severs.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C., at 8 p.m.—Evening meeting, when Professor J. Reynolds Green will deliver a lecture on "Adverse Conditions and their Remedies in the Life of Plants."

Wednesday, February 15. Sun rises 7.17; sets 5.12.

Nottingham and Notts. Chemists' Association, Albert Hall, at 8.30 p.m.—Discussion on the Suggested Draft Pharmacy Bill.

Pharmaceutical Society (North British Branch), 36, York Place, Edinburgh, at 8.30 p.m.—Papers will be read by Alex. Davidson and G. Lunan, G. F. Merson and A. Currie (see p. 130).

Western Chemists' Association (of London), Westbourne Restaurant, Craven Road, Paddington, W., at 9 p.m.—Discussion on the Suggested Draft Pharmacy Bill, opened by R. H. Parker.

Thursday, February 16. Sun rises 7.15; sets 5.14.

Chemists' Assistants' Association, 73, Newman Street, W., at 8.45.—Paper on "Antitoxins," by Dr. R. T. Hewlett.

North Staffordshire and District Chemists' Association, Copeland Arms Hotel, Stoke-on-Trent, at 6.30.—Discussion on the suggested Draft Pharmacy Bill.

Friday, February 17. ☽ 8.52 M. Sun rises 7.13; sets 5.16.

Public Dispensers' Association, 46, Clarendon Square, (Euston), N.W., at 8 p.m.—Lantern Lecture on "Photo-Micrography and Entomology," by F. N. Clark. All public dispensers are invited.

Saturday, February 18. Sun rises 7.11; sets 5.18.

Obituary.

Duncan.—On January 25, William Duncan, Pharmaceutical Chemist, Rothesay, N.B. Aged 66. Mr. Duncan had been a member of the Pharmaceutical Society since 1853, and was the Society's Local Secretary. Mr. Duncan was a native of Bute and commenced business in Rothesay in 1852. He partially retired from the business about four years ago when he took into partnership Mr. W. Lyle, who had been associated with him for many years. He once stood as a candidate for the North British Branch Executive, but was not elected.

Dewar.—On January 26, Mary Ann Dewar, Chemist and Druggist, Whitecross Street, London, E.C. Aged 67.

Mundey.—On February 2, at his residence, St. Anne's-on-the-Sea, Henry Mundey, Chemist and Druggist, late of Cheetham Hill, Manchester. Aged 71.

Pedley.—On January 29, Thomas Pedley, Chemist and Druggist, Sowerby. Aged 81.

Williams.—On January 30, Edward Williams, Chemist and Druggist, Mold. Aged 72. Mr. Williams had been a member of the Pharmaceutical Society since 1883.

Pratt.—On February 4, Edward Pratt, Chemist and Druggist, Barnstaple. Aged 75.

Harvey.—On February 5, Henry Harvey, Chemist and Druggist, late of Collingham. Aged 53.

Christy.—On February 8, at the Manor House, Wallington, after a long illness, Sophia, the wife of Thomas Christy, F.L.S. Aged 59.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Austen, Bienvenu, Bradbury, Branch, Brierley, Bristow, Clayton, Cracknell, Cruickshank, Cummings, Dewdy, Eberlin, Ellis, Flood, Forster, Goss, Harries, Hebb, Henson, Hill, Hogg, Jowett, Lacey, Lafayette, Liveing, Marsden, Merck, Miles, Mitchell, O'Halloran, Pater, Proctor, Reeve, Rymer, Sewell, Snell, Treat, Wardleworth, Waterhouse, West, Whitfield, Wilson.

MARKET REPORT.

London Report.

February 9.

Business has been somewhat quiet during the past few days, and disappointment has been expressed that more orders were not forthcoming. There has been some excitement in Quinine, many people believing that we are on the eve of a considerable further advance in the price of this article. If our readers will look back they will find that they were repeatedly advised that in view of the then ruling low price they could hardly be otherwise than safe in securing a good stock of this important article. Cocaine is also dearer, and expected to still further advance in view of the scarcity and high price, both of the leaves and of the crude article. Camphor is also again higher, as is also Cascara Sagrada. Iodides and Bromides unchanged. Sulphate of Ammonia weak and lower. Borax and Acid Boracic quiet. Acid Tartaric and Cream of Tartar quiet and unchanged. Acid Citric very firm. Cod-liver Oil lower. Glycerin quiet. Quicksilver and Mercurials firm. Morphia quiet. Codeia firm. Opium rather better in spite of the fact that the prospects as to the new crop continue favourable. The following are prices ruling for articles of chief interest:—

Acetanilide.—Price of the combined makers remains at 11d. to 1s. 1d. per lb. according to quantity and packing, while inferior makes are still offering even below this excessively cheap price.

Acid Carbolic.—Is quiet but steady at 6⅝d. to 6¾d. per lb. according to make for the 35 to 36° C. *ice crystals* in large bulk, 7⅛d. to 7¼d. for 39 to 40° C. *ditto*, and 8d. to 8¼d. per lb. for the 39 to 40° C. *detached crystals* (Phenol B.P.). *Crude* 60° F. 1s. 11d. per gallon, 75° F., 2s. 3d. per gallon. *Liquid*, 95 to 98 per cent. of pale straw colour, 1s. 1d. to 1s. 2d. per gallon in 40 gallon casks.

Acid Citric—Is firm at 1s. 4d. to 1s. 5d. per lb. for *crystals*, makers being unwilling to book any large forward contracts, even at the higher figure.

Acid Tartaric.—English spot, 1s. 1d. per lb.; foreign, 1s. 0¼d. per lb., *c.i.f.*

Alum.—Loose *lump* £5 7s. 6d. per ton, *ground* in bags £6 per ton, both ex-store.

Ammonia Compounds.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to packing, etc. *Iodide*: 14s. 3d. per lb. *Muriate*: Chemically pure small crystals 30s. to 32s. 6d. per cwt., white free from metals 25s. 6d. to 27s. 6d. per cwt. *Oxalate*: 5½d. per lb. *Sal ammoniac*: Crushed for batteries, firsts 37s., seconds 35s. per cwt., ditto sublimed firsts 35s., seconds 33s. per cwt. *Sulphate*: Weak and again lower. Grey prompt 24 per cent. London £10 3s. 9d. to £10 5s.; Hull prompt £10 2s. 6d.; Leith prompt £10 2s. 6d.; Beckton £10 3s. 9d., March-June £10; Beckton terms £10 2s. 6d. per ton. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb., according to quantity.

Antimony.—*Regulus*, spot £37 per ton. *Crude* (Black sulphide) £22 10s. landed, and £21 10s. to £21 15s. to arrive, *c.i.f.* It is stated that supplies are scarce and that the article is likely to advance in price.

Antipyrine Knorr—Is unchanged, while *Phenazone* is also without alteration in price.

Arsenic.—*Powder* is steady at 18s. per cwt.; *lump* at 34s. per cwt.

Asafetida.—A fair business has been done privately at 47s. 6d. per cwt. to 75s. per cwt. as to quality. The fine qualities are again scarce.

Atropine—Is firm at 15s. 6d. per oz. for the *Sulphate B.P.*, and 17s. 10d. per oz. for the *pure alkaloid*.

Bismuth—Unchanged at 5s. 8d. per lb. for the *Carbonate, B.P.*, and 5s. 1d. per lb. for the *Subnitrate, B.P.* The *metal* of the ordinary commercial quality being quoted 5s. per lb.

Bleaching Powder (Chloride of Lime).—*English* is quoted £6 per ton.

Borax.—*Crystals*, 16s. 6d.; *Powder*, 17s. per cwt.

Boracic Acid.—*Crystals*, 26s.; *Powder*, 28s. per cwt.

Bromide and Bromine—In fair demand, prices being without change.

Camphor.—*Crude* continues strong and in good demand, about 700 piculs having changed hands, chiefly February to April steamer shipment, at 120s. to 122s. per cwt. *c.i.f.* for China, and 127s. per cwt. *c.i.f.* for Japan. *Refined* is also very firm, German makers having advanced their price ¾d. per lb. to 1s. 6¾d. per lb. for *Bells* in ton lots, price of the English makors being ¼d. per lb. more, these latter having advanced their price 1d. per lb. on Friday last.

Cascara Sagrada—Continues in good demand, and for new bark 40s. per cwt. is said to have been paid, whilst for old bark 45s. per cwt. is asked. In the United States there is a scarcity of old bark, and consumers are calling for stock of at least two years old.

Castor Oil—Firm, Belgian first pressing spot, £27 10s. to £28 per ton; July-December, £26 10s.; second pressing, spot £25 10s. ex-wharf; Hull manufactured, £26 to £27 per ton in barrels, 3d. to 3⅛d. per lb. ex-wharf. London pressed, 29s. 6d. per cwt., in barrels; French, 27s. per cwt.

Chlorate of Potash.—*Crystals* 3¾d., *powder* 4d. per lb. spot London.

Cloves.—Privately *Zanibzar* have been quiet, closing sellers January-March at 3 1/32d., March-May and April-June at 3 3/32d. At auction, of 73 bales *Zanzibar* 33 bales sold, good bright at 3⅛d.; rather stalky, 3⅛d. Of 30 cases *Penang* 18 cases sold, without reserve, fair pale picked at 7⅛d., fair small picked at 6⅛d. Of 29 packages *Amboyna* 8 bags sold, good bright at 5¼d.

Coal Tar Distillation Products.—*Toluol*: Commercial 1s. per gallon, pure 1s. 3d. to 1s. 4d. per lb. *Benzole*: 50 per cent., 9d. per gallon; 90 per cent., 8d. per gallon. *Creosote*: 3¼d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 6d. per gallon; 90 per cent. at 160° C., 1s. 2d.; 90 per cent. at 190° C., 1s. 3d. per gallon. *Pitch*: 25s. per ton, *f.o.b.* *Tar*: Refined 12s. 6d. per barrel, 2⅛d. per gallon; crude 12s. per barrel, 2d. per gallon.

Coca Leaves—Are dearer, both kinds being very scarce. The nominal value of *Huanaco* is 1s. per lb., and of *Truxillo* 9d. per lb.

Cocaine—Makers are firm at 11s. to 12s. 3d. per oz. according to brand, while a further advance in price of the *crude*, combined with the scarcity and high price of *Coca Leaves*, renders it probable that a further advance in price of the *refined* article may become necessary ere long. Meanwhile the best brands are offering from secondhand at slightly below above figures.

Cocoa Butter.—At the monthly sales on Tuesday 750 cases (75 tons) passed the hammer at about 1/16d. per lb. below last sales, the average price working out at 1s. 2 5/16d. per lb. as against 1s. 2½d. per lb. in January.

Codeia—Is firm at 12s. 6d. per oz. down to 12s. 3d. per oz. for large quantity.

Cod Liver Oil.—New *Norwegian* oil has been done at 70s. to 75s. per barrel for best non-freezing quality, in tin-lined drums of 25 gallons, while 1898 oil is offering at 60s. to 65s. per barrel, according to brand.

Cream of Tartar.—First white crystals are quoted on the spot 72s. 6d. to 73s. per cwt., powder 75s. to 77s. per cwt.

Ergot of Rye—Is very quiet, prices being nominally 2s. 9d. for *Spanish* and 1s. to 1s. 4d. per lb. for *Russian*, according to quality.

Galls.—Market is quiet with practically nothing doing, prices being nominally unchanged.

Ginger.—At auction 806 bags *Cochin* offered, but met slow demand and all bought in, fair to good washed rough at 28s. to 31s. 126 cases cut kinds also all bought in; medium and bold, 55s. to 56s. 6d.; medium small and ends, 45s. 97 bags *African* sold at 19s. to 19s. 6d. No *Jamaica* offered.

Glycerin—Is quiet but fairly steady, prices of *Crude* being £20 to £25 per ton for the quality from soap lees, £26 for the quality obtained by distillation from candle making, and £29 to £30 for the quality obtained by saponification from candle making. *Refined* is steady at £50 to 52s. 6d. per cwt. for *English* and 52s. 6d. to 60s. per cwt. for *German* best white double distilled chemically pure 1260 quality in tins and cases.

Golden Seal Root (*Hydrastis canadensis*).—This article comes much firmer from New York, price on the spot 2s. 2d. to 2s. 5d. per lb., according to quantity.

Insect Flowers—Are firm, but with little business doing. Closed flowers are quoted 120s. cwt.; half open, 85s. cwt.; open, 70s. cwt.

Iodides and Iodine—Are steady at unchanged prices.

Ipecacuanha—Has been very quiet this week, and we hear of no actual business having being transacted. It would be possible to buy *Rio* at 13s. per lb., whilst for *Carthagena* 8s. 6d. per lb. is wanted.

Menthol.—Best dry *White Crystals* are quoted 7s. 9d. to 8s. per lb. in 5 lb. tins, 12 tins in a case.

Mercurials—Are firm at 2s. 10d. per lb. for *Calomel* (*Hydrarg. Chloride, B.P.*), and 2s. 6d. per lb. for *Corrosive Sublimate* (*Hydrarg. Bichloride, B.P.*), the other Quicksilver preparations being quoted in proportion.

Morphia—Is quiet but steady at 4s. 9d. per oz. for the *powdered* and 4s. 11d. for the *crystal salts*.

Nitrate of Soda.—Commercial £7 17s. 6d. per ton refined, £8 per ton on the spot.

Nux Vomica—Is dearer at 11s. to 15s. per cwt., as to quality. This article is very scarce.

Oils (Essential).—*Clove* is strong, but so far no advance has been annouuced. *Bergamot* is firmer at 8s. 6d. to 9s. per lb. *Lemon* is also firmer at 3s. 6d. to 4s. per lb. *Eucalyptus* in active demand at 1s. to 2s. 6d. per lb., as to quality. *Cinnamon*: The market is very firm, best heavy Ceylon being quoted 35s. per lb. *Cajeput*: Price of this is rather lower at 3s. 9d. per bottle. *Patchouly* is easier at 16s. per lb. *Cubeb* steady at 4s. 3d. per lb. for English. *Santal flav.*: English is quoted 12s. to 13s. per lb. as to quantity. *Sassafras* firm at 1s. 8d. to 2s. per lb. as to quantity. *Peppermint*: English is steady at 34s. per lb.; American, H.G.H., quiet at 5s. 6d. to 6s. per lb.; Wayne County, 3s. 3d. to 4s. per lb. *Star Aniseed* quiet at 6s. 1d. to 6s. 3d. per lb. *Cassia* quiet at 5s. 3d. to 5s. 6d. per lb. for 80 per cent., and 5s. to 5s. 3d. per lb. for 75 per cent. *Lemongrass* quiet at 2⅞d. to 3d. per oz. *Citronella* is easier; drums on the spot, 11½d. to 1s. per lb.; tins, 12½d. to 1s. 1d. per lb.

Oils (Fixed) and Spirits.—*Linseed Oil* is very firm; London spot pipes £17 7s. 6d. to £17 10s.; barrels, £17 15s. to £17 17s. 6d.; March-April, £17 17s. 6d.; May-August, £17 15s.; September-December, £17 10s. per ton. Hull spot, naked, £17; March-April, £16 17s. 6d.; May-August, £16 5s.; September-December, £16 5s. per ton. *Rape Oil*: flat, ordinary brown, £21; March-April, £21; refined spot, £22 10s.; Ravison naked, spot, March-April and May-August, £17 15s. per ton. *Cotton Oil* firm; London crude, spot, £14; May-August, £14 10s.; refined spot, £15 5s. to £15 15s., according to make. Hull refined, spot, naked, £13 15s.; March-April, £14; May-August, £14 7s. 6d.; *Crude*, spot, £12 12s. 6d.; March-April, £12 15s.; May-August, £13 5s. per ton. *Cocoanut Oil* steady; Ceylon spot, £25 10s., landed February-April, £24 5s. per ton *c.i.f.*; Cochin spot, £29 10s.; February-April, £26 5s. *c.i.f.* *Palm Oil*: Lagos spot, £23 10s. to £24 per ton. *Olive Oil*: Spanish, £28 10s. to £32; Levant and Mogador, £29 to £32 per ton. *Lubricating Oil*: Pale American spot, 5s. 6d. to 7s. per gallon; black, 4s. 9d. to 5s. 6d.; pale Russian, 7s. to 8s.; black, 4s. 6d. to 5s. per gallon. *Turpentine* firm: American spot, 31s. 3d. per cwt.; March-April, 31s. 7½d.; May-June, 30s. 3d.; July-December, 25s. 6d.; September-December, 25s. 4½d. per cwt. *Petroleum Oil* quiet; Russian spot, 5 5/16d. to 5⅜d. per gallon; American spot, 6⅛d. to 6¾d.; water white, 7¾d. to 7⅝d. per gallon. *Petroleum Spirit*: American, 8d.; deodorised, 8½d. per gallon.

Opium—Has been in some demand at steady prices, while holders in *Smyrna* are also firm in their views and are holding out for 2d. to 3d. per lb. advance on the prices paid there at the end of January. Quotations here are, fine *Druggists'* 10s. 9d. to 11s. 9d. per lb., good seconds ditto, and manufacturing, 10s. 6d.; good to fine soft shipping, 12s. 6d. to 13s. 9d.; seconds, 10s. 6d. to 10s. 9d. per lb. *Persian*, 10s. 6d. to 11s. per lb.

Oxalic Acid—Is quoted 3d. to 3¼d. per lb, free delivered, London.

Paraffin Wax.—*Crude* 1¾d. to 2d. per lb.; *refined* 2¾d. to 3½d. per lb.

Permanganate of Potash—Is decidedly firmer, and for large contract; lowest price would now be 50s. per cwt. for small crystals in 1 cwt. kegs.

Phenacetin—Is quiet at 3s. 9d. to 4s. 3d. per lb., according to quantity, for *crystals* or *powder*.

Pitch.—8s. to 9s. per lb.

Potash Compounds.—*Bicarbonate*, 30s. to 35s. per cwt., according to make, etc. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10½d. per lb. *Chlorate*, crystals, 3¾d. per lb., powder, 4d. per lb. *Iodide*, 10s. 6d. per lb. *Oxalate*, neutral, 5½d. to 5¾d. per lb.

Permanganate, 52s. 6d. per cwt. for small crystals in 1 cwt. kegs, large crystals costing 5s. per cwt. more. *Prussiate*, English, *yellow*, 7½d. to 7¾d. per lb.; *red*, 1s. 1d. to 1s. 2d. per lb., according to quantity and packing.

Quicksilver—Firm, at £8 5s. per bottle from the importer and £8 4s. from secondhand.

Quinine.—Maker's price for the best brands of German *Sulphate* in 100 oz. tins, and for 1000 oz. lots is nominally 1s. to 1s. 0½d. per oz., according to brand, but they decline to book orders at this or in fact at any price, stating that they are sold out and have none to offer at the moment. From second hand sales have been made at 1s. 0½d. to 1s. 0¾d. per oz. for spot, and 1s. 1d. per oz. for later delivery; a further advance in price is confidently anticipated by many people, some of whom at least, might be fairly considered to be likely to be correct in their views.

Rosin.—Strained is quoted 4s. 3d. per cwt. ex-wharf on the spot and 4s. per cwt. *c.i.f.* for May to July and August to October shipment by sailing vessel.

Saffron.—A considerable business has been done this week and the market is very strong, higher prices being expected to rule shortly. Finest new *Valencia* is quoted 45s. per lb., whilst old can be got at some 3s. below this figure. *Alicante* is firm at 26s. per lb.

Senna.—The high prices asked for *Tinnevelly* leaf of fair colour restricts business, consumers not realising now the short supply of this article. Holders are, however, very firm in view of the pinch which they feel sure will be felt before the new crop arrives in August.

Soda Compounds.—*Crystals*: 52s. 6d. per ton in bags, and 55s. per ton in barrels, ex ship London. *Ash*: £5 to £5 10s. per ton, according to strength, packing, etc. *Bicarbonate*: 97 per cent., £7 10s. to £8 10s. per ton, while price of the fully bicarbonated is 18s. 6d. to 20s. per cwt. *Bichromate*: 2¾d. per lb. *Bromide*: 2s. 1½d. per lb. *Caustic*: White, 70 per cent, £7 10s.; 60 per cent., £1 per ton less. *Hyposulphite* (*Antichlor.*): 6s. 6d. to 8s. 6d. per cwt., according to quantity, packing, and make. *Iodide*: 11s. 10d. per lb. *Nitrate*: Commercial, £7 12s. 6d. to £7 15s. per ton; refined, £8.

Soda Crystals.—52s. 6d. per ton bags, 55s. barrels ex-ship Thames.

Spices (Various).—*Black Pepper* quiet but firm, 497 bags Singapore were bought in and 1062 bags Penang withdrawn. *White Pepper* steady; of 493 bags Singapore 121 bags sold, fair at 8¾d. to 8⅞d.; of 173 bags Penang 20 bags sold, fair at 7¾d. to 7 d. *Chillies* quiet; of 45 packages Japan 5 bales sold at 40s. *Cinnamin Chips*: Of 594 bags only 59 sold at 3¾d. to 4d. *Cassia Lignea*: The large supply of 1000 cases met a slow demand, and only 200 cases sold, without reserve, 1897 import, false packed at 38s. *Cassia Vera*: 60 bales bought in, coarse quill part broken at 38s. *Cassia Buds*: 10 boxes sold, without reserve, at 128s. *Mace* quiet; only 2 cases Penang sold, good pickings at 1s. 3d. *Nutmegs* dull; only 8 cases Penang sold, 109's at 1s. 3d.; the remainder bought in, 65's at 2s. 5d., 92's at 1s. 7d., 101's at 1s. 4d. *Pimento* quiet but steady; 108 bags sold at 4⅜d. to 4½d.

Sulphate of Copper.—£23 to £23 10s. per ton on the spot.

Sulphonal.—Makers are firm at 17s. per lb. for both *crystals* and *powder*, with a reduction for 4-cwt. contracts, while from second hand there is a limited quantity offering at 15s. to 15s. 6d. per lb., according to quantity and make.

Sulphur—Continues firm. *English* roll 7s. 6d. to 8s per cwt.; *flowers*, 10s. per cwt. *Foreign* roll, 6s. 6d. per cwt.; *flowers*, 7s. per cwt.

Tar.—*Stockholm*, 26s. per cwt.; *Archangel*, 18s. 6d. to 19s. per cwt.

Thymol—Is firm at 8s. to 8s. 6d. per lb., according to quantity and packing.

Turmeric—Quiet, but steady, with but little business passing. *Bengal*, 19s. per cwt.; *Madras*, fine finger, 37s. 6d. *Cochin*, finger, scarce; *China*, finger, 22s.; mixed finger and bulbs, 19s. to 20s. per cwt.

Vanilla.—The whole of the offerings of *Tahiti* quality in last sale, for which not a single bid had been made, has been since cleared at 9s. per lb., and there are further buyers thereat.

Vermilion.—Makers have advanced prices 1d. per lb. to 2s. 2d. to 2s. 4½d. per lb., according to quantity.

Liverpool Market Report.

February 8, 1899.

Ammonia Salts.—*Sulphate* is weaker; £10 8s. 9d. per ton.

Beeswax.—5 sacks of Peruvian sold at conclusion of auction, but price was not published.

Canaryseed—Is still quiet; sales of Turkish have been effected at 27s. and 26s. 9d. per 464 lbs., and Spanish at 33s. to 34s.

Carnauba Wax.—50 bags of grey have found buyers at recent rates.

Chillies.—24 bags of Sierra Leone sold ex quay on private terms.

Copper Sulphate—Is dearer; £23 10s. to £24 per ton.

Honey.—Pile X Peruvian made 23s. per cwt., and pile X Chilian 30s. per cwt.

Kola Nuts.—44 bags of dried brought 2d. per lb.

Linseed—Is very firm and nothing is offering on the spot 36s. per 416 lbs. is asked for River Plate February and March shipments.

Oils (Fixed) and Spirits.—*Castor* has become very quiet, but rates are firmly maintained, especially as regards French oils. On the spot, Calcutta "good seconds" is quoted at 3⅛d. per lb., and French 1st pressure at 3d. per lb. Of Madras there is none offering. *Olive* sells at last week's rates, but in view of reduced shipment rates for Spanish and Candia oils, lower prices may be expected shortly. *Linseed* of Liverpool make is very firm at the advanced rate of 18s. 9d. to 19s. per cwt. *Cottonseed* is firm at 15s. 9d. to 16s. per cwt. *Spirits of Turpentine* is considerably easier and quiet at 32s. per cwt.

Potash Salts.—*Pearlashes* are slack at 33s. to 34s. per cwt. *Potashes*, 24s. 6d. per cwt. *Cream of Tartar* is firmer, but price is still 71s. to 75s. per cwt.

Quillaya Bark.—6 tons of Chilian went at auction for £16 to £16 2s. 6d.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton; 70 per cent., £7. *Crystals*, £3 per ton. *Nitrate* is easy and in moderate demand at 7s. 6d. to 7s. 9d. per cwt.

Manchester Chemical Report.

February 8, 1899.

The return of exports just published are on the whole satisfactory, especially in view of the continuous decrease of the past few months, with the exception alone of January. Indeed, Bleaching Powder shows a fairly satisfactory return, inasmuch as it is about 11 per cent. of an increase. This, no doubt, accounts for the firm position of this article in regard to home consumption. Caustic Soda is weaker, and there are reports of sales at figures much under current quoted rates. Soda Crystals are unchanged, but Bicarbonate is dull and in some cases lower. Sulphate of Copper is firm at £24 per ton, but Sulphate of Ammonia remains depressed. Brown Acetate is steady at £5 5s. to £5 10s. for Welsh and American, *c.i.f.*, and landed Manchester. Yellow Prussiate is again higher, and may be quoted 7¼d. to 7½d. Benzols are dull, as usual, but Naphthas are unchanged. Pitch is firm, as usual at this time of the year, and shipments are continuing satisfactory by the Manchester Ship Canal. Epsom and Glauber Salts are unchanged. Alum is dull, but there is no alteration in price. Tin and Zinc Salts continue to increase in price.

Newcastle Chemical Report.

February 7, 1899.

This market keeps on the steady side, with requirements fully to the season's average. Quotations are:—Bleaching Powder, according to market, £5 to £5 10s. Soda Crystals, basis price, 45s. to 47s. 6d. Caustic Soda, 70 per cent, basis price, £7. Soda Ash, 52 per cent., £4 5s. Alkali, £5 5s. Sulphur, £4 15s. to £5 per ton.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

James Brigstocke, Chemist, 25, King Street, Carmarthen.

Alfred H. Parker, Medical Practitioner, 142, Grove Road, Bow.

EXCHANGE.

OFFERED.

Magic Lanterns, second-hand; triples and biunials: oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Overstocked.—2½ × 10 lb. Coppers nice superfine Oil of Lemon, 22s. 6d. copper, sample pound 2s. 6d., carriage and package free; all cash with order.—Moss, 34, Avondale Road, Chorley.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

1¾ cwt. Robbins' (Shrewsbury) Cattle Food, in 14lb. boxes, 30s. cash, carriage forward.—Jones, Chemist, St. Asaph.

50,000 Choicest Microscopical Objects of every variety. Catalogues free. New and secondhand Microscopes by all leading makers. Cabinets, Mounting Materials, etc.—Suter, 10, Highweek Road, Tottenham, Middlesex.

What Offers for 100 ounces Howard's or Whiffen's Quinine, original tins?—Z., 'Pharm. Journal' Office, 5, Serle Street, W.C.

Overstocked.—Holloway's Wines. Liberal discount off cost price.—Balchin, Gosport.

For Disposal.—Best cash offers, 100-oz. original tin Howard's quinine.—Endle, Chemist, Boscombe.

Fletcher's Blowpipe, with foot bellows and small detachable furnace. What offers? Cash or exchange. Good condition.—"Volumetric," 59, Deardengate, Haslingden.

WANTED.

Erasmic Soap, Daisy Powders, and Frog in the Throat. Send quantities and prices.—Eastman, Forest Lane, Stratford.

Principals only treated with. Will any chemist overstocked with any saleable patents write to Eastman, Forest Lane, Stratford?

Cheap Set of Microscopical Slides for Minor.—Ashford, 13, Mervan Road, Brixon.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Advertisements.

(Received too late for Classification).

CHEMIST'S and Extractor's Drug Business (genuine) for sale. Established very many years. Good reasons for disposal. Proprietor very old and infirm, therefore neglected. Young man and general good stock do capital business. Most populous neighbourhood. Good, cheap house, with garden, on lease. Price reasonable. Rent only £40. Apply by letter, Mr. Wilson, 785, Old Kent Rd., London.

NEW Shop to Let.—Exceptional opportunity for Chemist and Druggist to at once acquire a good business in rapidly increasing London suburb. Large Shop, fitted with handsome front and with good domestic accommodation. Moderate rent and liberal terms to commence. Apply, C. F. Day, 93, Church St, Stoke Newington, N.

LADY Pharmacist wanted, Qualified, to superintend in the packing department, handling of preparations containing poisons. Applicants will please state age, experience, and salary required, to Poison, c/o Messrs. Street & Co., 30, Cornhill, E.C.

WANTED, energetic Assistant for Retail and Compounding Department. Rooms and attendance provided. Apply, giving full references, enclose photograph, and state salary expected. Kiloh, Cork.

ENGAGEMENT Wanted. Part-time Qualified Excellent references. London experience. Ythium, 5, Serle St., W.C.

ENGAGEMENT Wanted. Analyst's Assistant seeks berth in public or private Laboratory. Age 22. A year's experience with Public Analyst. Highest references. Analyst, 5, Serle St, W.C.

AS Assistant. Unqualified. Age 23. 8 years' experience, Wholesale and Retail. Out-door preferred. Apply, W. H., care of Hayward, 5, Devonshire Rd., Forest Hill, Kent.

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PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

The Condition in which the (Victorian) Poisons Act Amendment Bill emerged from the Legislative Assembly, rendering it necessary that several important amendments should be moved during its passage through the Legislative Council, it was considered, on account of the short period left before the prorogation, inadvisable to proceed further with the measure this session, and it has accordingly been abandoned for the present. The Dentists' Law Amendment Bill, on the other hand, which got through the Legislative Council with only a few minor amendments, was committed in the Assembly on December 13, and passed through all its remaining stages without opposition.

Of Eighteen Candidates presenting themselves at the recent examinations of the Dental Board of Victoria five were ladies, all of whom proved successful.

Should the Proposed New South Wales Medical Practitioners' Amendment Bill pass the Legislature, advertising specialists in that colony will have anything but easy times of it. Section 3 runs as follows :—

3. (1) Any person who states in an advertisement or notification that he treats disease, injury, or ailment, or that disease, injury, or ailment is treated in any house therein referred to, shall in every such advertisement or notification as aforesaid, state his Christian name and surname in full, and shall place and maintain the said names upon any house (if any) referred to in the said advertisement or notification.

(2) Any person who fails to comply with the requirements above mentioned or any of them shall be liable to a penalty of twenty pounds, and in the case of a continuing offence to a further penalty of five pounds for each day from the time when the said offence was first committed, or shall be liable to imprisonment for a term not exceeding six months.

(3) Any person purporting to be but not being the person whose name is stated in any advertisement or notification as aforesaid, who treats disease, injury, or ailment at any house referred to in any advertisement or notification as aforesaid, shall be liable to a penalty of twenty pounds, or shall be liable to imprisonment for a term not exceeding six months. In any proceedings under this subsection, the burden of proving that he is the person whose name is stated in the advertisement or notification shall lie on the person charged.

Another Proposed Measure, described as "A Bill to Provide for the Registration of Dentists Qualified to Practise in New South Wales," is very much on all fours with the Victorian Act. The sections providing for the qualification necessary for registration are as follows :—

11. Any person who—(*a*) is registered in the United Kingdom in accordance with the laws for the time being in force therein as a dentist or medical practitioner ; or (*b*) is entitled as hereinafter mentioned to be registered under this Act as a dentist ; or (*c*) has for a period of six months before the commencement of this Act been *bona fide* engaged in New South Wales in the practice of dentistry, either separately or in conjunction with the practice of medicine, surgery, or pharmacy, and who has made application for registration to the Board within one year from the commencement of this Act; or (*d*) has attained the age of twenty-one years and has been engaged during a period of not less than four years in the acquirement of professional knowledge in dentistry, and has passed an examination before the Board according to the prescribed regulations ; or (*e*) has attained the age of twenty-one years, and shall have been a pupil or apprentice of a registered dentist for a period of two years, and shall have been such pupil or apprentice for a period of six months before the commencement of this Act ; or (*f*) has obtained a diploma or degree in dentistry from a University in Australia ; shall be entitled to be registered as a dentist under this Act.

12. Any person who has practised dentistry for not less than twelve months elsewhere than in New South Wales, and who holds some recognised certificate as hereinafter defined, and who proves to the satisfaction of the Board that he is of good character, shall be entitled, upon the payment of the prescribed registration fees, and without examination, to be registered as a dentist under this Act. The term "recognised certificate" means a certificate, diploma, membership, degree, licence, letters, testimonial, or other title, status, or document granted by some university, college, or other public institution in a British possession or foreign country, and which is recognised by the Board as entitling the holder thereof to practise dentistry in such possession or country, and as furnishing sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practise of dentistry.

The Board for the first three years is to be appointed by the Government ; after this to be elected by the dentists.

A Strong Effort is Being Made by Mr. Bellemy and other leading pharmacists of New South Wales, who express dissatisfaction with the method in which the affairs of the Pharmaceutical Society of New South Wales are at present conducted, to organise a new association to be called the Registered Pharmacists' Society of New South Wales. It is alleged that the Pharmaceutical Society has caused a great deal of dissatisfaction amongst the craft by debarring men who had been registered according to the provisions of the Pharmacy Act from becoming members. Rules and regulations have been drafted by a sub-committee, and will be submitted to a general meeting during January. All chemists and druggists registered under the Pharmacy Act, 1897, are eligible for membership, the subscription being fixed at £1 per annum, and it is proposed that suitable chambers, having a central situation in Sydney, should be taken and kept open daily for the use of members, where they can meet on terms of equality for mutual benefit, business affairs, correspondence, etc. Mr. Bellemy estimates that he can rely on a membership roll of over five hundred.

The Pharmacy Board of South Australia has adopted a recommendation of its Educational Committee, "that students of the Pharmaceutical Society who present pass certificates from the Adelaide University in the subjects of inorganic chemistry, organic chemistry, and botany, be credited with a pass in these subjects when presenting themselves for the final examination."

For the New Zealand Pharmacy Board recently elected under the new Act the following were the seven successful candidates, viz., Mr. Graves Aickin, Auckland, 177 ; Mr. Geo. Mee, Wellington, 176 ; Mr. Thomas Johnstone, Dunedin, 141 ; Mr. Geo. Bonnington, Christchurch, 148 ; Mr. Emil Skog, Christchurch, 127 ; Mr. Frank Renshaw, Christchurch, 118 ; Mr. C. M. Brooke, Christchurch, 108. The four unsuccessful candidates were :—Mr. R. Bagley (Dunedin), and Messrs. W. Barnett, H. J. Hobden, and J. C. Sopp (Christchurch).

A Curious Libel Action has been instituted in the Victorian Courts, in which the plaintiff (Owen) alleges that one of the defendants (White) published in a newspaper called the *Richmond Australian*, and the other defendant (Fullford), described as agent for Dr. Williams' Pink Pills, procured White to so publish a "testimonial," purporting to be given by the plaintiff in which it was stated that he had been cured of kidney and liver troubles by taking the pills in question. The plaintiff further alleges that he had never suffered from kidney and liver troubles, and that the publication of the "testimonial" had held him up to ridicule. The conclusion of the case is awaited with considerable interest by Victorian pharmacists.

An Action in which the well-known Melbourne firm of wholesale druggists and manufacturing chemists, Messrs. Rocke, Tompsitt and Co., were sued by the Amherst Tailings and Goldmining Company, was concluded in the Melbourne County Court on December 8, after a prostrated hearing of seven days. The plaintiff company alleged that in June last they purchased from defendant a case of cyanide of potassium, and that a box was sent by rail to their works at Amherst. They used the contents for the treatment of 240 tons of their tailings, and subsequently discovered that cyanide of sodium had been supplied instead of potassium, the result being that there was a loss in the quantity of gold recovered, and a number of workmen had been unnecessarily employed. Defendants' answer was that they sent up a case of cyanide of potassium, and that if it was cyanide of sodium they were ignorant of it, as they forwarded it in the same condition as they received it from Messrs. Noyes Bros., of Queen Street, who were made third parties to the action. Even if it was cyanide of sodium, they urged, that was equally good for the purpose. On the second day of the trial, Messrs. Noyes Bros., who had appeared under protest, urged that the court had no jurisdiction as far as they were concerned, and were dismissed from the case. At the conclusion, Judge Chomley found that the defendants did not deliver 98 per cent. of cyanide of potassium, as ordered ; that they knew the purposes for which it was required ; that the contents of the box as delivered did not consist of even ordinary commercial cyanide of sodium, and were not reasonably fit, when delivered, for the purposes for which they were required, when used by a reasonably qualified person who believed them to be commercial cyanide of potassium ; and that the plaintiffs were not aware of the true nature of the substance when it was used. He held that plaintiffs had suffered damage to the extent of £22, and gave judgment for plaintiffs for that amount, with costs to be taxed.

IRISH NEWS.

Irish Pharmacists' Assistants' Association.—At Dublin, on the 9th inst., the annual dance in connection with this Association was given in the Ancient Concert Rooms, Great Brunswick Street. Dancing commenced at 9 p.m., and lasted until about 4 o'clock the following morning. About sixty couples were present, and the arrangements made for the comfort and enjoyment of the visitors were unexceptionable. The decorations were supplied by Messrs. Pim Brothers and Co., and the catering was in charge of Messrs. O'Neill, Lower Baggot Street. The Committee is to be congratulated on the success which has attended their efforts.

Pharmaceutical Society of Ireland.—At Dublin, on Monday evening last, the usual fortnightly meeting for the discussion of scientific subjects was held at 67, Lower Mount Street. Dr. J. A. Walsh, M.C.P.S.I., presided, in the absence, through illness, of the President, Mr. R. J. Downes. Mr. J. A. Ray, reporter in chemistry to the evening meetings, submitted a communication on some experiments had been recently carried out on the decomposition of chloral by means of various salts, and Mr. George Brown read a paper on compressed tablets.

FRENCH NEWS.

[*From our Paris Correspondent.*]

The Suppression of the Specialty in France.—In a previous issue of the Journal readers were informed of what may be called "a feeler" of the important movement recently set on foot in France having for its object the suppression of specialties. French pharmaciens, recognising the folly of handling other people's specialties at little or no profit, owing to the ridiculous reductions or discounts offered by many of their *confrères* as a "bait" to increase their *clientèle*, voted in conference on November 18, 1898, the suppression of all specialties. Since, however, this project may require a considerable lapse of time before being realised, they are willing to content themselves in the meantime with an arrangement whereby all agree to retail all specialties at marked or full prices. Such an attempt was made a few weeks ago, but did not amount to anything, due probably to a lack of organisation. Nevertheless, a society of pharmaciens has just been founded under the title of "Les Grandes Marques Françaises," having a capital of 500,000 francs, divided into 5000 shares of 100 francs each. The bureau or "siége social" of the Society is in connection with the establishment of the President of the Committee of Organisation, Monsieur Fievet, Pharmacien, 53, Rue Reáumur, Paris. The object of the Society is to buy out and group together all the principal French specialties, and in the case where any cannot be bought out entirely, to make such terms with the makers as will be equivalent to having a monopoly of the article. Having, then, the principal makes completely in their own hands, they propose to distribute them only to such pharmaciens or intermediaries who engage to honestly sell at prices agreed upon by the Society, the pharmacists in all cases to sell at full marked prices. The sale is regulated as follows: taking for example an article the selling price of which is marked at 5 f., the price would be :—

To the Society	2 f. 50 centimes.
For Shareholders	3 f. 75 ,,
,, Commission Agents.....	4 f. 50 ,,
,, Non-adherent Pharmaciens	4 f. 75 ,,
,, The Public	5 f. 00 ,,

From the net profits will be deducted (1) a sum sufficient to ensure shareholders an interest of 5 per cent.; (2) 5 per cent. for the legal reserve as specified by law; (3) 10 per cent. for directorship; (4) 15 per cent. for the founders. The surplus to be disposed of in the following manner: 50 per cent. towards the ordinary shares; 50 per cent. towards preference shares. Thus it will be seen at a glance that it is indisputably to the advantage of every pharmacien to become a member or shareholder. The Society, now being well organised, has every prospect of success, and has been already assured of the sympathy and help of the principal makers of French specialties, and, moreover, the adhesion of no less than 5200 pharmaciens who have already signed for the regulation of that bugbear, "the specialty." Naturally there will be a scramble for shares, as the applicants outnumber the quantity of shares for disposal. If such a scheme were feasible in England, no doubt much might be done to achieve what French pharmacists now have every prospect of accomplishing.

Surely the French Budget must be in a frightfully dry state when a Deputy of the Chamber conceives the happy idea of refreshing it, even in this wet weather, with a tax of 10 centimes per bottle levied upon all mineral waters, natural or artificial, sold, imported, or exported. Fortunately, the suggestion has not been too favourably received. Apart from the fact of the great consumption of mineral waters in this country being a means of lessening the tendency to too free libations of wine and alcohol, it is necessary that the public have the waters cheap, or be otherwise obliged to take to town water of doubtful purity, and run the risk of serious consequences. If this suggestion were put in force, the public would have no alternative but to increase their consumption of wine or take to mineral waters almost as expensive as the wine. If instead of taxing these waters as luxuries the Government did something towards lessening the cost of their transport, and thereby did aid their diffusion; or, on the other hand, expend a large amount of money in plant for assuring a plentiful supply of pure and wholesome tap water, their efforts would be highly appreciated by the people, and reflect creditably upon themselves.

Cheap Drugs.—Happily it is not often that one hears of qualified pharmaciens descending so low as to gain their livelihood by dishonest means. The second case within the last six months has just been brought before the Tribunal of the Seine, and the means employed by the pharmacien in this case resemble somewhat those resorted to in the last. Monsieur Flovy, Juge d'Instruction, gave the order for the arrest of this dishonest Parisian pharmacist, owing to numerous complaints reaching him from various quarters. It was proved beyond doubt that he substituted one medicament for another when prescriptions were brought to him, not because he had not the prescribed drug in stock, but to enable him to do his dispensing cheaper than his *confrères*, and thereby rob them of their *clientèle*. Monsieur Villieux, the expert employed by the magistrate upon this case, has just made known the result of his analysis. Where antipyrine was proscribed, soda bicarb. was sometimes used; instead of dispensing glycerophosphates, phosphates would be used, and similarly creosote whe e carbonate of guaiacol was prescribed. Also a solution of emetine instead of syrup of ipecacuanha; and so on, *ad infinitum*. Mr. Villieux pointed out the danger to the public health which such conduct entailed, saying "It is two-fold, first the substitution sometimes of perhaps inoffensive drugs to those prescribed, or drugs not easily digested, as naphthol in lieu of benzonaphthol; secondly, in grave cases, where the physician prescribed an active drug, when such were confided to the caro of such an unscrupulous chemist it is easy to imagine the consequences of his substitution or dilution." The laboratory *garçon* gave information to the effect that he was principally employed in substituting fictitious mineral waters made on the premises for the more expensive mineral waters in demand by their extensive *clientèle*. The pharmacien's defence was that he was utterly ignorant of the wholesale substitution which was being conducted by an assistant on his premises; and when instances in which he had been proved to have erred were brought home to him, his excuse was that he had carried out the wishes of his clients, who considered the medicaments prescribed by the doctor too dear. Judgment has been postponed for a week to enable the judge and jury to consider the best form of punishment to mete out to such an offender.

A Statue of Pasteur is to be unveilod at Lille, on Sunday, April 9, and a Pasteur Institute is to be inaugurated there on the same date. A number of ministers and the Pasteur family, as also a crowd of Pasteur's pupils and prominent persons in the scientfic world, are to be prosent.

The French Journal *La Petite Republique* gives an account of a somewhat unpleasant adventure which has fallen to the lot of Professor Huchard, member of the Academy of Medicine, while on a professional visit to Odessa. Professor Huchard put up at one of the best hotels in the place, and when his consultation was over prepared to return to Paris. He rang for his bill, but no *garçon* came. He continued ringing, in fear lest he should miss his train, and finally a *garçon* appeared and, in great confusion, announced that the police were coming to arrest him. It was a fact, too. In another moment an officer appeared and demanded the professor's name. When the latter had given it, after a natural protest against such treatment, the officer replied, "You are not Professor

Huchard at all. You are the anarchist Suchard, and we have got precisc information about you. Your companion is also an anarchist, though we do not know his name." Again the professor protested, declaring that his travelling companion was merely his *chef de clinique*, but it was all in vain. The police were convinced that they had two dangerous anarchists under their thumbs, and did not mean to let them escape. All that could be gained was the permission to telegraph to Paris through the French Consul. That was accordingly done, and after a detention of twenty-four hours the two gentlemen were released, an exchange of telegrams having proved their identity.

SCOTTISH NEWS.

Edinburgh Chemists', Assistants', and Apprentices' Association.—The twenty-first annual reunion of this Association takes place at 9 o'clock in the Imperial Hotel, Market Street, in the form of a supper, on Friday, March 3. This being the majority year of the Association the Committee are making an effort to make it as large and representative a gathering as possible. A special menu card is being prepared, and the musical programme promises to be worthy of the occasion. Tickets, 4s., can be had from the Honorary Secretary, Mr. David Harley, 4, North Bridge, Edinburgh.

ENGLISH NEWS.

Special Notice.—The *Pharmaceutical Journal* of Saturday next, February 25, will have a circulation greatly exceeding that of any other journal addressing chemists and druggists, as it will be sent to every registered chemist in Great Britain, and the number of copies circulated will be more than 17,000. Reports, correspondence, and items of news intended for the special issue should reach the Editor's office, 17, Bloomsbury Square, London, W.C., not later than Wednesday next, February 22.

The New Poison Regulations have been the subject of some correspondence in the *Western Morning News* (see page 152), and one who signs himself a "Pharmaceutical Chemist" points out that the regulations recently adopted by the Pharmaceutical Society have existed in the form of "recommendations" since 1871, and have appeared regularly in the Calendar of the Pharmaceutical Society since that date. Those recommendations have been voluntarily observed by chemists throughout the country since that time. He further points out that the Pharmaceutical Society regards technical education and special training as the best safeguards to the public in the handling of poisons, but at the same time does not ignore the importance of mechanical and physical safeguards in addition, especially when poisons are passing into the possession of the public or persons who have not been so specially trained.——Another correspondent writes as follows:—"As one not in the business I certainly think that chemists are deserving of great praise for voluntarily placing restrictions in order to provide for the greater safety of the public. It must be borne in mind, however, that these safeguards apply to chemists only. Would it not, therefore, be well if Parliament enforced similar regulations on all hospitals, surgeries, and dispensaries, in which only too frequently neither the special training nor the mechanical precautions mentioned by your correspondent exist. This has been painfully illustrated by a recent poisoning case in the North of England."

Football.—The Metropolitan College of Pharmacy F.C. and Kensington Rangers (Reserves) met for their return match at Wormholt Farm, Shepherd's Bush, on Saturday last, the game resulting in a win for the "Metros." by 4 goals to *nil*. The following scored for the "Metros.": Johnson (2), Lucas, Negus. The game played last term by the above teams ended in a draw—3 all.

Midland Pharmaceutical Association.—A successful and enjoyable "smoker" was organised by this Society at the Great Western Hotel, Birmingham, on the 9th inst. The President of the Association (Mr. Jeffrey Poole) presided over a large gathering. The artistes included the Moseley Quartette party (Messrs. Luker, Law, Stoddard, and Halliley), Mr. Willis (reciter), Mr. Reeve (flute), Mr. Wilson (tenor), Mr. C. J. Longmore (comic), and Mr. James (pianoforte).

Exeter Pharmacy Classes.—At a meeting of the Exeter City Council last week, Mr. A. W. Clayden (Principal of the Exeter Technical and University Extension College) presented his annual report on the work of the College for the previous year, in the course of which he said "The great importance of examination results as a test of efficiency makes it a matter of great regret that so many of our students leave at Easter and cannot be collected again for the May examinations. This is especially true of the classes in chemistry and botany, which are mainly attended by pharmaceutical students who live in Exeter for a year or two and then move away to more lucrative appointments elsewhere. Thus, in 1897 the practical chemistry classes contained thirty-five students, of whom only fourteen appeared to be examined. Last year only eight out of twenty-five submitted to the test. This is the more disappointing because the absentees consist chiefly of those who have been promoted, and who are, therefore, the best students." A report on the University Extension Department stated that "The course on plant life, given in the autumn of 1896, was supplemented by a special class in practical botany, which was attended by twenty students."

Midland Chemists' Assistants' Association.—The annual dinner was held at the Exchange Rooms, Birmingham, on the 8th inst., and was well attended. The President, Mr. J. Selby, occupied the chair, and the vice-chair was taken by Mr. Osborn. After the loyal toasts the President proposed "The Pharmaceutical Society," and the toast was responded to by Mr. T. Wakefield, who offered his congratulations upon the fact that the Pharmacy Act and the Poisons Act had received the sanction of the Privy Council. On Mr. Wakefield's suggestion those present agreed to telegraph their congratulations to the President of the Pharmaceutical Society. "The Midland Pharmaceutical Association" was submitted by Mr. Osborne, and replied to by Mr. Jeffrey Poole. In the absence of Mr. F. H. Alcock, Mr. Wakefield gave "The Midland Chemists' Assistants' Association," and Mr. W. F. Cox (Hon. Secretary) returned thanks. A capital musical programme had been arranged to fill up the intervals between the speeches, and the company spent a very pleasant evening.

Sheffield Chemists' Ball.—The second annual ball of the Sheffield Pharmaceutical and Chemical Society was held at the Masonic Hall, Sheffield, on Thursday, Feb. 9. From both members and friends of the Society it received a measure of support gratifying to the promoters, and was a very successful and enjoyable affair. There were about 120 guests, and dancing was kept up until about two o'clock in the morning to the excellent music of Mr. E. Percival's band. The M.C.'s were Mr. A. R. Fox and Mr. C. F. Carr; and the stewards, Messrs. G. Squire, G. T. W. Newsholme, E. C. Exell, and J. B. Pater, Mr. Shelton provided the refreshments.

Cambridge Pharmaceutical Association.—A conversazione and dance were held at the Liberal Club on Friday, February 10, under the auspices of this Association, when the success which has attended the functions previously organised by the Association was certainly maintained, if not excelled. About eighty persons accepted invitations, and the arrangements were in every respect complete, a fact which reflects the highest credit upon all the officers, and especially the energetic Hon. Secretary, Mr. Bernard S. Campkin. Amongst those present were the President (Mr. Alderman Deck, F.C.S.), Messrs. A. Sidney Campkin, J.P., E. Saville Peck, B.A., F. Harris, G. McAvoy, W. Spencer Turner, W. E. White (Committee), Mr. H. F. Cook (Treasurer), Messrs. Collin, T. Watts, Crisp, O. F. Pink, H. Flanders, and many others. An excellent programme had been arranged and was admirably carried out. A dance afterwards took place, the music being kindly provided by Miss Gower, and the proceedings closed shortly after 1.30 a.m. with "Auld Lang Syne," and cheers for the President and Secretary. In a room adjoining that in which the dance took place botanical specimens were on view, exhibited by Mr. A. Shrubbs, and during the evening Mr. W. H. Hayles gave an exhibition of the Röntgen rays. The decoration of the room was carried out by Messrs. O. F. Pink and P. S. Campkin.

"OF IMMEDIATE IMPORTANCE."—Such was the heading of an advertisement that appeared in most of the London morning papers on Wednesday last, as follows :—

> WILL the gentleman who purchased at the Apothecaries Hall some Ipecacuanha Wine last evening, about six o'clock, communicate immediately with the Superintendent, Apothecaries' Hall, E.C.?

This announcement caused quite a stir in the evening newspaper offices, and numerous reporters were at once sent to the Apothecaries' Hall for accurate information, to be published "for the safety of the public," *i.e.*, the individual who was in possession of the so-called ipecacuanha wine. Strange to say all information was at first refused, but one enterprising lady journalist determining "in the public interest" to get by guile what could not be obtained in a straightforward manner, represented herself as a governess in the employ of a lady whose husband had the previous evening taken home a bottle with something in it which was supposed to have come from the Apothecaries' Hall. She claims to have been told that when the gentleman purchased the wine, there were two bottles in readiness, both labelled ipecacuanha wine and both full. One contained the wine, but the other did not. A mistake had been made and the contents of the second bottle were not ipecacuanha wine as labelled, but something else of a character which in a large dose might cause injury. In the assistant's hurry one of these bottles was sold to the customer, but which one was not known, for by some means the other bottle had mysteriously disappeared and it was feared the customer had taken the wrong bottle. No other information could be elicited, so the lady journalist, evading an offer made by the officials to send an assistant back with her to "her mistress," returned to the office and reported to her chief.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.—A very successful "social" was held on Wednesday, February 8, at the Clarendon Hotel, Clayton Street, Newcastle-on-Tyne, about 140 members and friends being present. The President, Mr. F. E. Schofield, commenced the proceedings by calling upon Mr. L. Williamson for an exhibition of lantern slides. These covered a wide area, representing scenes at the mouth of the Tyne, East Coast, Tynemouth to Seaton Delaval, Mitford, Rothbury, Workworth-on-the-Tyne, Bywell, Stocksfield Burn, Devilswater; views on the Allen; glimpses of Cumberland scenery: Corby, Wetheral, Naworth, Brougham Castle, Brougham Hall, Eden Hall, Lowther Castle, Ulleswater, Derwentwater; Yorkshire: Fountains' Abbey; Durham: view on the Greta, Durham Cathedral, Finchall Abbey. They were further supplemented by some charming "Flower Studies," and also by some "Choice Bits of Irish Scenery." The slides, which throughout were excellent, and for the most part made by Mr. Williamson from his own negatives, were thoroughly enjoyed by those present. A hearty vote of thanks was accorded to Mr. Williamson, and also to his friend, Mr. Baird, who ably discharged the duties of lanternist, proposed by the President, and seconded by Mr. T. Maltby Clague. Light refreshments were then provided, and the remainder of the evening was devoted to songs, recitations, etc. A vote of thanks to the "artistes" was ably proposed by Mr. Geo. Duncan, seconded by Mr. Chas. Ridley, and was suitably acknowledged by Mr. W. Whitehead. Mr. G. F. Merson proposed "The Lady Visitors," which was seconded by the Secretary, Mr. F. Gilderdale. Mr. T. Maltby Clague proposed a hearty vote of thanks to the President, Mr. F. E. Schofield, of Morpeth, for presiding, which was seconded by Mr. R. Wright.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION.—In connection with the above Association a farewell supper to Mr. J. R. Johnson, Ph.C., R.N., who is leaving the Naval Hospital for a situation in Jamaica, was held on Wednesday, February 8, at the Liberal Club, Plymouth, when a most enjoyable social evening was spent by a company numbering about thirty. During the course of the evening Mr. C. J. Park (President) presented Mr. Johnson with a handsome set of books, as a slight memento from the members of the Association. He (Mr. Park) testified to the amount of work which Mr. Johnson had got through on behalf of the Association, both as secretary of the Educational Committee and teacher of the various classes. He was sure every one regretted his departure, but wished him every success in his new venture. Mr. J. Barge also spoke, and referred to the work Mr. Johnson had done in connection with the Juniors of the Association. Mr. Johnson suitably responded.

SCHOOL OF PHARMACY DINNER.—Those intending to be present are reminded that the dinner is fixed for Wednesday next, February 22, at 7 p.m., in the Caledonian Room, Holborn Restaurant. There will not be many speeches, and the few gentlemen who will speak have all expressed their intention of being brief. The musical programme will be bright and varied. There will be only one more of these annual dinners in the present century; it is therefore hoped that all who possibly can come will write without delay to Mr. F. A. Upsher Smith, Hon. Sec., of the Dinner Committee, 17, Bloomsbury, Square, W.C., for tickets and for further information. It is requested that all who have not yet signified their intention of being present will send in their names not later than Monday next.

MANCHESTER COLLEGE OF PHARMACY.—On Saturday, February 11, Mr. and Mrs. Charles Turner entertained at the Manchester College of Pharmacy a numerous gathering of students and their friends at a conversazione and musical evening. The students and several members of the Manchester Microscopical Society gave a most interesting exhibition of botanical specimens, drugs, spectra of various descriptions, polarimetry and microscopic slides. The cases of Lepidoptera, illustrating mimicry, also included several "stick" and "leaf" insects, which were greatly admired. A first-class concert was given from 7.30 p.m. to 9 p.m., then followed refreshments, and an impromptu concert and variety entertainment rendered by the students wound up one of the most successful soirées held at the Manchester College of Pharmacy.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—On Tuesday, February 14, the members of this Association were entertained to a musical evening by a party under the direction of Mr. Severs. A most enjoyable time was spent. Miss Severs gave a pleasing rendering of "When the Heart is Young," as well as other songs. Mr. Severs gave banjo sketches as though to the manner born, and Mr. Wallbank delighted the audience with his recitations. A cordial vote of thanks was passed at the close of the evening to Mr. Severs and his party.

Publications Received.

COMMERCIAL ORGANIC ANALYSIS. By A. H. ALLEN, F.I.C., F.C.S. Third edition, illustrated, with revisions and addenda by the author and Henry Leffmann, M.A., M.D. Vol. II., Part I. Pp. x. + 387. Price 14s. London: J. and A. Churchill. 1899. From the Publishers.

ENGLISH-FRENCH DICTIONARY OF MEDICAL TERMS. By H. DE MÉRIC, M.R.C.S., etc. Pp. viii. + 396, double columns. Price 5s. net. London: Baillière, Tindall and Cox. 1899. From the Publishers.

THE THERMAL WATERS OF BATH. By GILBERT A. BANNATYNE, M.D., M.R.C.P. Pp. 87. Price 2s. Bristol: John Wright and Co. 1899. From the Publishers.

STREET'S NEWSPAPER DIRECTORY FOR 1899 FOR GREAT BRITAIN AND IRELAND. Pp. 348. London: British, Foreign, and Colonial Advertising Offices, 5, Serle Street, W.C. From the Publishers.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By ELIAS H. BARTLEY, B.S., M.D., Ph.G. Fifth edition, revised and enlarged. Pp. xiv. + 738, with 96 illustrations. Price 10s. 6d. net. London: H. Kimpton, 82, High Holborn, W.C. 1899. From the Publisher.

BANKS AND THEIR CUSTOMERS. By the Author of 'The Banks and the Public.' Pp. 77. Price 1s. London: Effingham Wilson, Royal Exchange, E.C. 1899. From the Publisher.

THE TUTORIAL DYNAMICS. By W. BRIGGS, M.A., F.C.S., F.R.A.S., and G. H. BRYAN, Sc.D., F.R.S. Pp. vi. + 312. Price 3s. 6d. London: W. B. Clive, 13, Booksellers' Row, Strand, W.C. 1899. From the University Correspondence College Press.

MATRICULATION DIRECTORY, No. XXV., January, 1899. With articles on the special subjects for June, 1899, and January, 1900, Pp. 139. Price 1s. net. London: W. B. Clive, 12, Booksellers' Row, Strand, W.C. 1899. From the Publisher.

THE ATLANTIC CABLE DIRECTORY OF REGISTERED ADDRESSES, AND DIRECTORY CODE. Compiled by C. P. Bruch. Pp. 658. London: Commercial Cable Co. New York: The Atlantic Cable Directory and Code Co. 1898.

MARKET REPORT

The quotations here given are in all cases the lowest cash rices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

February 16.

Chief matter of interest during past week has been quinine, which has steadily and almost without relapse continued its upward course, and to-day, after the present market report was completed, the news of the result of the Amsterdam Bark Sale reaches us to the effect that prices realised showed about 40 per cent. advance on the prices of the previous sale. It is stated that the German makers have put up their price to 1s. 2d. per oz., while there have been considerable sales effected from second hand at this price for April and May delivery, there being still buyers at this price, with but few sellers, the idea being that the advance in value of the article has by no means yet run its course. Camphor is again dearer. Turpentine also rather higher, while Sulphate of Ammonia is again weak and somewhat lower in price. Other articles of interest are practically without change, the following being the particulars of prices actually ruling :—

Acetanilide—remains without change.

Acid Carbolic—Is unchanged from last week.

Acid Citric—Firm at nominally 1s. 4d. per lb. for *crystals*, there being sellers from second hand at a trifle below this figure.

Acid Oxalic.—Without change at 3d. to 3¼d. per lb., delivered in London.

Acid Tartaric.—*English* is quoted 1s. 1d. per lb. on the spot, *foreign* 1s. 0¼d. per lb.

Alum.—Loose *lump*, £5 7s. 6d. to £5 10s. per ton; *powder*, in bags, £6 to £6 2s. 6d. per ton.

Ammonia Compounds.—The only change to report is the weakness of *Sulphate* at £10 2s. 6d. per ton, February-June being quoted £10.

Antipyrine. — *Knorr's* is unchanged, while *phenazone* is also steady at 6s. 6d. to 7s. 6d. per lb., according to brand, quantity, and packing.

Bleaching Powder (Chloride of Lime).—*English*, £6 per ton.

Borax and Acid Boracic—Are steady, without change in price.

Bromides and Bromine—Without change.

Camphor.—*Crude* remains quiet, but firm. For arrival 200 piculs *China* have been sold at 127s. 6d. per cwt. *c.i.f.*, Feb.-April steamer shipment, while *Japan* is quoted 132s. 6d. per cwt. *c.i.f.* Makers again advanced their price for *refined* ½d. per lb., and *English* is now quoted 1s. 7½d. per lb. for *bells* and *flowers*, while *German* is ¼d. cheaper at 1s. 7¼d. per lb.

Caustic Soda—unchanged.

Cloves.—Privately *Zanzibar* quiet but steady. Sales of fair on spot at 3 3/16d. to 3 1/16d. for delivery, buyers of March-May at 3 5/16d., and of January-March at 3 1/16d. At auction of 11 cases picked *Penang*, 8 cases sold, good bright at 8d.; 5 packages *Seychelles* sold, good picked at 4¾d., fair at 3¾d.; 7 bags ditto, stems slightly mouldy, sold at 1⅞d.

Coal Tar Distillation Products.—There are no changes of any importance to record.

Codeia—Firm at 12s. 6d. per oz. for the *pure* and 1s. per oz. less for the *salts*.

Cocaine.—Makers' prices vary from 11s. to 12s. 3d. per oz., while from second hand it is possible to buy best brands, such as *B & S*, at 11s. per oz. for 100 oz. lots in 25 oz. tins. Price of *crude* is firm and rising, and makers of *refined* appear to consider it probable that they will have to again advance their price before very long.

Cod Liver Oil—Very quiet; market is, however, a trifle firmer, partly probably in consequence of late tempestuous weather.

Cream of Tartar—Dearer at 74s. per cwt. for first white *crystals* on the spot. *Powder*, 76s. to 78s. per cwt.

Ginger.—At auction the moderate supply of 360 packages *Cochin* was offered, chiefly new crop, which met a good demand, and about 250 packages sold, cut kinds at extreme prices, other descriptions being steady. Good bold cut and scraped at 85s., medium and bold 70s. 6d., medium and small 50s., small 38s., small rough cut and ends, wormy, at 25s. 6d. to 27s. Of 44 bags limed *Japan* 24 bags sold at 18s. 315 packages *Jamaica* met a good demand, and 250 packages sold, chiefly new, low, and common lean dark *Rhatoon* at 55s. to 67s. 6d.

Glycerine—Quiet, but steady, at late rates, both for *crude* and *refined*.

Hydrastis Canadensis.—The price of this has to-day been advanced to 2s. 9d. per lb. on the spot, as a result of advices from New York that both there and in the country districts there is very little available stock.

Iodides and Iodine.—No change in values to report.

Mercurials—Are without change from last week.

Morphia—Quiet and unchanged at 4s. 9d. per oz., for the *Hydrochlorate powder*.

Oils (Fixed) and Spirits—Are practically unchanged from last week, with the exception that *Turpentine* is higher at 31s. 9d. to 31s. 10½d. per cwt. for American on the spot, other positions being proportionally higher.

Opium—Is quiet but fairly steady on the spot, while in *Smyrna* there has been some demand for manufacturing kinds, for which full to slightly dearer rates have been paid.

Phenacetin.—Quiet at 3s. 9d. to 4s. 3d. per lb. according to quantity for both *crystals* and *powder*. *Bayer's* is still quoted 5s. 6d. per lb., and *Riedel's* 5s. 5d. per lb. in original 1 lb. packing.

Potash Compounds. — There are no alterations in prices to report.

Quicksilver.—£8 10s. from first hand and £8 8s. 6d. per bottle from second hand.

Quinine.—Early in the week there was considerable excitement in this article, and while makers' prices remained nominally 1s. to 1s. 1d. per oz., they not being free sellers at this, or, in fact, at any price, sales were made from secondhand up to 1s. 2d. per oz. for best brands of German *Sulphate* for forward delivery. Yesterday there were, however, sellers on the spot at 1s. 1½d. per oz. Everything now appears to hinge upon the result of to-day's bark sale in Amsterdam, and the consequent action of the manufacturers; the opinion, however, of those who are generally well informed as to such matters remains that it is more than probable that we shall see higher prices in the near future.

Soda Compounds—Are without change, as quoted in our last.

Spices (Various).—*Black Pepper* firm; only 30 bags Singapore offered, and a few bags damaged sold at 5½d. *White Pepper* quiet; 228 bags Singapore bought in, fair to good at 9d. to 10d. *Chillies*: Of 63 packages Japan 33 packages sold, partly without reserve, at 36s. to 40s. 6d.; 4 bags African sold, fair bright at 43s. 6d. *Capsicums*: 10 bags Natal were bought in at 30s. *Cinnamon* quiet; 39 bales Tellicherry bought in at 1s. *Cinnamon chips*; 199 bags Ceylon bought in at 3d. to 3½d. *Mace* dull; 26 cases Penang bought in, good pale 1s. 8d. to 1s. 10d. *Nutmegs*: 42 cases Penang bought in, 65's at 2s. 5d, 90's at 1s. 7d., 101's at 1s. 4d.; 3 cases Bombay sold, slightly wormy, 82's at 1s. 7d., 98's at 1s. 2d.; 4 packages West Indian sold, 121's at 8d. to 11d. *Pimento* quiet; of 357 bags only 92 bags sold, fair at 4½d.

Sulphate of Copper—Is firm at £23 10s. to £25 per ton for spot delivery.

Sulphonal.—Makers' price remains at 17s. per lb, while the quantity obtainable from second hand at rather less money is now quite limited.

To-day's drug auctions passed off very quietly, a considerable number of the lots offered failing to find buyers; only feature of importance being an advance of about 2d. in price of Cardamons. The following are the particulars :—

Aloes.—4 casks dark liquid *Socotrine* sold at 22s. per cwt., subject to approval, 19 good kegs part selling at 75s.; ditto

in old brandy boxes being held for 70s. ; 548 gourds *Curacoa*, the bulk, unsplit, were taken out.

Ambergris.—7 tins chiefly bought in at 55s. to 65s. for fair grey down to 20s. for black pitchy. 1 tin, about 20 ozs., dark grey, of weak flavour, selling at 39s. per oz.

Anatto Seeds.—1 barrel of very common quality taken out, price required being 1½d. per lb., a bid of 1d. was refused.

Antimony.—20 cases crude *Japan* bought in at £24 per ton.

Argol.—41 bags pale *Cape* bought in at 50s. per cwt.

Arraroba.—12 packages were held for 1s. 4d. per lb. for good yellow.

Balsam Copaiba.—1 cask bought in at 1s. 8½d. per lb., 2 cases of lower quality selling at 1s. 4d. per lb.

Buchu Leaves.—7 bales good green rounds sold at 6d. per lb.

Calabar Beans.—10 bags good round bold were bought in at 3d. per lb.

Camphor.—50 cases *Japan refined* were held for 1s. 8d. per lb. for ¼-oz. and ½ oz. tablets.

Canada Balsam.—6 casks were taken out at 1s. 1d. per lb.

Canella Alba.—40 bales of good quality were held for 27s. per cwt.

Cardamoms.—Nearly 300 cases were offered, the bulk selling readily at an advance of from 2d. to 3d. per lb. Fine bold pale *Ceylon-Mysores* realised 4s. 4d. per lb. ; second size, 3s. 11d. per lb. ; fair pale, 2s. 10d. to 3s. 6d. per lb. ; seeds, 2s. 7d. to 2s. 8d. per lb. Good *Malabars* held for 2s. 8d. per lb. ; brown ditto, 2s. 5d. per lb.

Cascara Sagrada.—96 bags new bark of fair quality were held for 40s. per cwt. ; 16 bags of 1895 import being also held for same figure.

Cascarilla Bark.—30 barrels part sold at 25s. per cwt. for siftings ; 5 barrels ditto at 24s. 6d.

Cassia Fistula.—8 bags, part slightly mouldy, held for 12s. per cwt.

Castor Oil.—30 cases good *Italian* part sold at 4d. per lb. 30 cases *French* held for 3⅝d. per lb. 20 cases fair firsts *East Indian* for 3¾d. per lb.

Chiretta.—21 bales of stalky and inferior quality were bought in, there being no bid.

Cinchona Bark.—15 cases *Java* good quills sold cheaply at 5d. per lb. ; 8 cases good mossy *East Indian* quill realised same figure ; 9 serons yellow *Carthayena* sold at 10½d. per lb.

Coca Leaves.—8 bales broken *Truxillo* bought in at 6d. per lb.

Colocynth.—2 cases *Turkey*, small to medium, dullish apple bought in at 1s. per lb.

Cod-Liver Oil.—50 barrels *Norwegian* of 1898 import, of fair quality, but slightly dark in colour, were bought in at 70s. per barrel, 10 barrels of not so good quality being held for 60s.

Colombo Root.—10 bags of medium quality taken out at 32s. 6d. per cwt. 17 bags good washed at 45s.

Croton Seed.—1 bag of low quality held for 45s. per cwt. 62 bags fair bright for 60s. to 70s. per cwt.

Cubebs.—40 bags medium but stalky were held for 24s. per cwt. Good quality for 26s.

Cummin Seed.—20 bags fair *Malta* sold cheaply at 20s. 6d. per cwt., 23 bags sold without reserve at 11s. per cwt.

Cuttlefish Bone.—3 cases fair, part broken, bought in at 5d. per lb.

Dill Seed.—36 bags fair bought in at 12s. per cwt.

Dragon's Blood.—The demand was slow. For 1 caso very dull slabs a bid of 95s. per cwt. was made, but £5 5s. being the price, it was withdrawn. For 1 case good bright but drossy and damp, £12 per cwt. was paid, and a smaller case of the same quality sold at £11 12s. 6d. per cwt. Fair bright, also damp, was held for £11 per cwt. 5 bales of very dull drop were withdrawn.

Ergot of Rye.—15 bags medium *Russian*, somewhat wormy, were bought in at 1s. per lb. ; 10 bales ditto, very weevily, were also held for 1s. 1b.

Essential Oils.—10 cases each 12 by 22 oz. bottles *Lemongrass* held for 2⅞d. per oz. 9 cases *J. B. Horner's Oil of Cloves* for 2s. 5d. per lb. 10 cases fair dementholised *Japan Oil of Peppermint* bought in at 3s. 7½d. per lb. 4 cases good ditto, guaranteed to contain about 40 per cent. of menthol, at 5s. per lb. 4 cases *Eucalyptus Globulus Platypus brand* at 2s. 3d. per lb. 1 tin *Essence Petitgrain* at 1s. 4½d. per oz. 1 tin *Essence Patchouli* at 15s. per lb. 1 tin *French oil Eucalyptus* at 1s. 8d. per lb. 6 cases *Cinnamon Leaf* bought in at 2½d. per oz. 22 bottles *Ylang Ylang* held for 3s. 6d. per oz. 4 cases *Bay oil* for 5s. 6d. per lb. 3 cases distilled *West Indian Lime oil* for 3s. per lb. 4 coppers *Oil of Lemon* of rather doubtful quality sold cheaply at 1s. 6d. per lb. 5 coppers *Essence of Bergamot* at 1s. per lb., subject to approval.

Galls.—11 bags Turkey were bought in at 60s. per cwt.

Fenugreek Seed.—40 bags *Morocco* were bought in at 7s. 6d. per cwt.

Gamboge.—4 cases of good bright pipe were held for £8 10s. per cwt., and 10 cases good bright but soft and slight drossy sold cheaply at £7 per cwt.

Gentian Root.—15 bales split root bought in at 17s. per cwt., while for 14 bales chumpy there was no bid ; 20 bales fair whole root taken out at 17s. 6d. per cwt.

Guaza.—49 robbins, fair green, but stalky, were bought in at 6d. per lb.

Guinea Grains.—11 bags of fair quality were taken out at 60s. per cwt.

Gum Accroides.—15 bags block taken out at 12s. 6d. per cwt.

Gum Ammoniacum.—8 cases bought in at 30s. for small free part blocky, down to 20s. per cwt. for blocky.

Gum Arabic.—10 cases medium to fair *grain* bought in at £6 10s. per cwt., siftings at 65s. ; 20 serons good soft part sold at 80s. per cwt.

Gum Asafetida.—In all 94 cases were shown ; a lot of 52 cases was taken out at various prices, the bulk being very heavy dark block, the weight of the cases—448 lbs. to 532 lbs. each—testifying to the quality of the so-called gum. A lot of 31 cases from Paris sold practically without reserve at from 24s. to 39s. per cwt., the bulk being very dry greyish almondy block, but much made up.

Gum Benzoin.—*Palembang* : 36 cases of this scarce variety were held for 48s. per cwt. *Sumatra* was in moderate supply only, yet the demand was not stimulated, and practically nothing sold. 4 cases ordinary seconds sold at £5 5s. per cwt., other qualities being held at up to £10 for good seconds. *Siam* : All lots bought in. *Penang* : 20 cases held for 65s. per cwt.

Gum Kino.—1 case genuine *Cochin* taken out at 10s. per lb. 2 cases ditto held for 8s. 1 case *African* for 4s. per lb.

Gum Mastic.—3 cases pale taken out at 2s. per lb.

Gum Myrrh.—7 casks good pale sorts, half-picked, were held for 100s. per cwt., 2 cases good sorts for 80s. down to 40s. for siftings, 1 case very common siftings sold at 12s. per cwt.

Gum Thus.—13 barrels of fair quality bought in at 15s. per cwt.

Honey.—3 casks medium *Jamaica* were bought in at 23s. per cwt. ; 9 packages ditto of better quality at 28s. ; 20 cases *Italian* at 35s. and 200 cases white *Californian* at 35s. per cwt.

Ipecacuanha.—Whilst *Rio* remains as scarce as before, yet buyers do not readily respond to the high values now put upon this grade. 5 bales which were advertised were sold just previous to the auctions, and to judge from the attempts of the broker to obtain a bid of 12s. 6d. per lb. for the few he had left, this would probably be the price last paid. Other brokers asked 13s. to 13s. 6d. per lb. For *Carthagena* 8s. 6d. was generally required but for a new lot there was some pressure to sell, but only 1 bale, second class damaged, passed the hammer at 8s. per lb., which marks a decline.

Jalap.—8 bags fair *Vera Cruz* were held for 6½d. per lb.

Kola Nuts.—3 bags of fair quality but small sold at 2½d. per lb. ; 4 bags good held for 5d. per lb. ; 5 bags, the genuineness of which more than doubtful, realised 1d per lb.

Mace Paste.—2 cases taken out at 2½d. per oz.

Menthol.—5 cases fair dry crystals were held for 7s. 6d. per lb.

Musk.—2 tins unworked small to bold grey and blue pods were held for 50s. per oz.

Nux Vomica.—57 pockets small dull, mixed with myrabolanes and stones, sold after the sale at 5s. per cwt. 62 bags shelly and out of condition realised 5s. 3d. to 5s. 6d. per cwt.

Orange Peel.—21 cases good new thin cut, taken out at 8d. per lb.

Orris Root.—32 bags medium to fair *Florentine* were bought in at 35s. per cwt. ; 21 bags *Verona* at 30s. ; 3 bags *Moyador*, small and of inferior quality, sold without reserve at 12s. per cwt.

Quinine.—4 cases new sulphate of the make of the Amsterdam factory were held for 1s. 1d per oz.

Rhubarb.—Privately a good business has been done this week in common rough high dried at 6d. per lb. for shipment. It is said some 70 to 80 cases have been sold in all. The deliveries, too, have been good of all grades. Very little, however, sold at the auctions. Small flat high dried sold at 11d. per lb., and 4 cases small flat *Canton* sold at 1s. per lb., subject to the approval of the owners.

Rose Oil.—12 pots brought in at 5d. per oz., 8 bottles, settlings, selling at 1½d. per oz.

Saffron.—13 tins *Valencia*, quality of which was not quite all that could be desired, sold at 35s. down to 32s. per lb., subject to approval.

Sarsaparilla.—29 bales *Lima* held for 1s. 1d. per lb. 2 bales *2CCD* selling at 1s. 4 serons *Honduras* held for 1s. 6d. per lb. 2 bales *Jamaica* taken out at 1s. 8d. per lb. and 2 bales red and grey native at 1s. 3d.

Senna.—A fair business has been done in *Tinnevelly* privately this week, mainly in small spotty and brownish leaves at 2¼d. to 2¾d. per lb. At the sales only secondhand lots were offered, which sold at ¾d. to 1¼d. for low false packed, 2d. for brown small leaf. The steamer "Caledonia," due here on Saturday, brings about 120 bales only. In *Alexandrian* leaves there is nothing doing, the quality available being poor. Siftings realise 2½d. to 2¾d. per lb. in a small way, and pods 4d. to 4½d. per lb.

Squills.—11 bags of medium to fair quality were held for 3d. per lb.

Strophanthus Seed.—3 bags brown Kombé taken out at 3s. 3d. per lb.

Tonquin Beans.—10 casks fair *Angostura*, but slightly dampish, were taken out at 2s. 10d. per lb.; 1 case black *Para*, part mouldy, was bought in.

Tragacanth.—8 cases bought in at £7 down to 85s. per cwt. for very low and inferior.

Turmeric.—60 bags fair *Bengal*, held for 19s. per cwt.

Vanilla.—In view of the very large offerings which will be made this day fortnight only 50 tins were catalogued, and of these about one-tenth only sold at 20s. to 21s. 6d. for Bourbons, according to length and condition. Fine beans of 6 to 7½ inches were held for 25s. per lb.

Wax.—Of 5 bags fair *Jamaica* 2 barrels sold at £7 10s. per cwt., remaining 3 casks being held for same figure. 1 cask inferior ditto realised £6 10s. per cwt. 12 cases white *Calcutta* bought in at £7 to £7 5s. per cwt. 80 pockets *Madagascar* held for £6 10s. per cwt. 9 cases *Italian* bought in at £6 15s. 6 casks *Mogador* at 90s. 2 cases fair *Australian* sold at £6 10s. and £6 12s. 6d. Fair *Bombay* bought in at £6, and white ditto at £8 10s. per cwt. 29 cases fair *Japan* were held for 32s. per cwt.

Liverpool Market Report.

February 15, 1899.

Quotations are only slightly altered since last report. Castor Oils, after the recent busy time, have become slow of sale, and the price is easier in consequence. Linseed Oil has advanced, and closes very firm. In seeds there has only been a retail amount done, including sales of Turkish Canaryseed at recent rates. Good sales of Carnauba Wax, Chillies, African Ginger, and Chilian Honey have been made at fair prices. The chief alterations in the chemical market are easier terms for Ammonia Sulphate and an advance in Prussiate of Potash.

Ammonia Salts.—*Carbonate* is dearer, 3d. per lb. *Sal ammoniac* 33s. to 35s. per cwt. *Sulphate* is cheaper, £10 6s. 3d. to £10 12s. 6d. per ton.

Canaryseed—Is steady but quiet; sales of 400 bags Turkish are reported at 26s. 6d. per 464 lbs. for fair average quality.

Carnauba Wax.—3 tons of grey changed hands at 34s. 6d. per cwt.

Chillies.—38 bags of Sierra Leone sold at previous prices.

Copperas.—39s. per ton Lancashire; Welsh 37s.

Copper Sulphate—Is steady and firm at £25 10s. to £23 15s. per ton.

Ginger.—220 bags of old-crop Sierra Leone went for 19s. 6d. to 20s. per cwt. ex store.

Honey.—83 barrels of Chilian Pile 3 made 20s. 6d. per cwt.

Linseed—Is firm and fully 3d. per 416 lbs. above the figure buyers are inclined to give; 200 tons of Calcutta 4 per cent. sold, "to arrive," January and February shipment, at 38s. 3d. per 416 lbs.

Oils (Fixed) and Spirits.—*Castor* of all kinds are very quiet, Calcutta is quoted at 2 15/16d. to 3d. per lb. French 1st pressure at 2⅞d. per lb. 100 cases of Calcutta went for 2 15/16d. per lb. ex quay. *Olive* is firmly held at steady rates, but the amount of business done has been only retail Seville has sold for £31 per ton, and Malaga at £31 10s. *Linseed* of Liverpool pressure has risen to 19s. 6d. per cwt., and is steady. *Cottonseed*: Liverpool refined in export barrels still offers at 15s. 9d. to 16s. per cwt. *Spirits of Turpentine* have risen to a slight extent and command a steady inquiry and fair sale at 32s. 3d. per cwt.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate*, 3½d. to 3¾d. per lb. *Cream of Tartar* is in slow demand at 71s. to 75s. per cwt. *Pearlashes*, 33s. to 34s. per cwt. *Potashes*, 24s. 6d. *Saltpetre*, 22s. per cwt *Prussiate* (Yellow), 7¼d. to 7½d. per lb.

Quillaya Bark—Has been selling at £16 to £16 10s. per ton for *Chilian*.

Manchester Chemical Report.

February 15, 1899.

There is some improvement to be noted in the home demand for heavy chemicals over last week, especially in Bleaching Powder, and, notwithstanding the rumours of over-production in the trade, operations have been commenced this week for the erection of extensive works near Middlewich for the manufacture of Alkali by the electrolytic process. The supply of brine is said to be satisfactory, and there are excellent railway and canal facilities. Whether the operation will be a financial success remains to be seen, as prices of both bleach and Alkali were probably never lower in the history of the trade. 77 to 78 per cent. White Caustic Soda is quoted as low as £7 10s. for 10-ton lots. Bicarbonate of Soda is fairly steady at £6 12s. 6d. per ton, in 1-cwt. kegs, on rails. Salt Cake has improved somewhat, and is quoted 30s. per ton in bulk, on rails. Sulphate of Copper ranges from £24 to £25 per ton, according to brand, delivered Manchester, with little offering in first hands. Brown Acetate of Lime is easier at £5 5s. to £5 10s. Yellow Prussiate is quoted 7¾d. to 7¾d. for best Lancashire make. Carbolic Acid steady. There is no change in Glycerine, but makers are pushing sales somewhat and the tendency is easier. White Powdered Arsenic is dull at £16 10s. to £16 15s. per ton, ex ship, Garston. Anilines are in fair request for the time of the year, but Aniline Oil and Salt are almost stagnant at 4¾d. and 4¼d. respectively. The arrivals of American and Russian Oil at this port continue to steadily increase.

Newcastle Chemical Report.

February 15, 1899.

The principal feature at the moment is the better tone in heavy goods. Bleaching Powder in particular is firm at quotations, with Soda Crystals following in the wake. The higher prices asked for Coal, Salt, etc., are lifting values up. Quotations are: Bleaching Powder, £5 5s. to £5 10s., according to markets. Soda Crystals, 45s. to 47s. 6d. Soda Ash, 52 per cent., £4 5s. Caustic Soda, 70 per cent., basis price, £7. Alkali, 52 per cent., £5. Sulphur, £4 15s. to £5 per ton.

Trade Notes.

Mr. John C. Hewlett, of the firm of C. J. Hewlett and Son, Charlotte Street, E.C., is leaving London next week on a tour through South Africa. Letters may be addressed to him, care of Messrs. Ralling and Co., Kloof Street, Cape Town.

Mr. E. J. Reid, of 11, Dunedin House, Basinghall Street, E.C., referring to our reply to an inquiry regarding phenalgin in a recent issue of the Journal, asks us to mention that he is the sole British agent for phenalgin. and that samples and any particulars may be had upon application to the above address.

Marriages.

Grimble—Manton.—On February 7, 1899, at the Wesleyan Centenary Chapel, Boston, by the Rev. T. H. Bailey, Albert, youngest son of the late Ebenezer Grimble, formerly of Swineshead, to Hannah Mary, eldest daughter of the late Thomas Manton, formerly of Shirbeck Quarter. Mr. Grimble is connected with the firm of Grimble and Kent, chemists, of Boston.

Pratt—Bignell.—On February 8, at the Parish Church, Saltash, by the Rev. A. Preedy, Vicar, assisted by the Rev. W. Robinson, Vicar of St. Matthews, Stonehouse, Charles A. Pratt, chemist and Druggist, Saltash, to Minnie, eldest daughter of Mr. G. C. Bignell, The Ferns, Saltash.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal' Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns, second-hand; triples and biunials; oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

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Pure English Honey in 28 and 30 lb. tins, 5½d. per lb., sample 2d.—Heath, Hertford House, Clarence Road, Teddington.

Dental Goods.—Dia teeth, rubbers, compo., vulcanisers, flasks, lathes, presses, tool-cabinets, pair female heads advertising-blocks, chemist's pestle-mortar.—101, Queen Street, Newton Abbot.

Etherised Lavender Water with otto, guaranteed exquisite fragrance, triple strength, 2s.—Alldridge, 11, Esher Street, Westminster, S.W.

Kramerine, a superior liquid dentifrice for cleaning and whitening the teeth, removing tartar film, imparting an agreeable freshness to the mouth, with directions, 2s. 6d.—Alldridge, 11, Esher Street, Westminster, S.W.

Excellent Microscope in mahogany case, coarse and fine adjustments, 1, ½, ¼-in. objectives, with accessories, 30s. Dental Forceps, 3s. 6d. each. Southall's E Collection, perfect, 3s.—Morris, Winchmore Hill, N.

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Advertisements.

(Received too late for Classification).

ASSISTANT-CHEMIST wanted in Laboratory in Dublin. Must have had experience in manufacture and analysis of pharmacopœia preparations. Apply, Office of this Paper.

LONDON, S.E.—Wanted immediately, young Qualified Assistant, used to quick cash trade. Must be smart and reliable, good appearance. Salary and commission. One full day a week off, no Sunday duty. Manns, 45, Rye Lane, Peckham.

Calendar for the Week.

Sunday, Feb. 19. 1st in Lent. Sun rises 7.9; sets 5.20.

Monday, February 20. Sun rises 7.7; sets 5.22.

Tuesday, February 21. Sun rises 7.5: sets 5.23.

Bradford and District Chemists' Association, County Restaurant.—The Vice-President of the Pharmaceutical Society, Mr. G. T. W. Newsholme, will deliver an address on "The Improvement of Local Organisation."

Dewsbury and District Chemists' Association.—Annual Dinner.

Edinburgh District Chemists' Trade Association, 36, York Place.—Discussion on the best way to carry out the new Poison Regulations.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—Prof. E. R. Lankester on the "Morphology of the Mollusca."

Royal Photographic Society, 12, Hanover Square, W., at 8 p.m.—Demonstration with violet electric waves for actuating photographic apparatus and for photographing lightning in daylight, by F. H. Glen.

Wednesday, February 22. Sun rises 7.3; sets 5.25.

Edinburgh Chemists,' Assistants,' and Apprentices' Association, 36, York Place, at 9.15 p.m.—Communication by George Senter.

Thursday, February 23. Sun rises 7.1; sets 5.27.

Chemists' Assistants' Association, 73, Newman Street, W., at 9 p.m.—A paper will be read on "Dairy Produce" by A. H. M. Muter.

Leicester Chemists' Social Union, Dover Street School, at 8 15 p.m.—Limelight lecture by S. F. Burford on the Rhine, and the Bernese Alps; also vocal and instrumental music. Chemists' assistants and ladies are invited.

Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—Dr. Allan Macfadyen on "Toxins and Antitoxins."

Friday, February 24. Sun rises 6.59; sets 5.29.

Aberdeen Junior Chemists' Association.—Annual Ball.

Saturday, February 25. ○ 2.16 A. Sun rises 6.57; sets 5 31.

Royal Institution, Albemarle Street, Piccadilly, W., at 9 p.m.—Lord Rayleigh on "The Mechanical Properties of Bodies."

Partnerships Dissolved.

(From the London Gazette.)

C. A. Swaine and Shaw Haigh (trading as W. P. England and Co.) Drysalters, Chancery Lane, Huddersfield.

G. A. Jefferson and John Bird (trading as Jefferson and Co.), Mineral Water Manufacturers, Victoria Works, Rhyl. Debts will be received and paid by G. A. Jefferson.

J. C. Arnold and Jacques Flax, Surgeon Dentists, 53B, Terminus Road, Eastbourne. Debts will be received and paid by Jacques Flax.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Arkle, Ashwin, Bartlett, Bell, Bowdler, Brisley, Brown, Browton, Bushby, Campkin, Chapman, Davies, Ellinor, Foustanos, Gilderdale, Goodess, Harris, Harrison, Henderson, Hill, Keen, Kent, Kobert, Lawrence, Lenton, Lister, Matcham, Merck, Millard, Mitchell, Pearson, Pond, Pratt, Rees, Reynolds, Roberts, Shippam, Spenge, Turner, Weddell Whitworth, Willcocks.

Rectification of the Register

In Accordance with the Pharmacy Act, 1868.*

IN exercise of the authority conferred by Section X. of the Pharmacy Act, 1868, the Registrar appointed under that Act proposes to take the necessary steps for removing from the Register the names of those persons whose correct addresses have not been notified to him. Notice is hereby given that the persons named in the following list have not communicated their addresses to the Registrar, and the special attention of chemists and druggists throughout Great Britain is directed to this list in the hope that the persons named therein may notify their whereabouts. The help of chemists and druggists in maintaining the accuracy of the Register will be highly appreciated.

Richard Bremridge, *Registrar*.
17, Bloomsbury Square, W.C.

Those marked * are Pharmaceutical Chemists.

Abbott, Joseph	125, Neville Road, Upton Park, London, E.
Abraham, William	3, Blurton Road, Fenton, Staffs.
Adams, Hugh	74, Meadow Street, Weston-super-Mare.
Alexander, Adam	68, Holburn Street, Aberdeen.
Alexander, Ernest Glover	Opposite Carlisle Hotel, Manningham, Bradford.
Ambrosse, John David Long	873, Ontario Street, Montreal, Canada.
Anderson, Edward Ellice	183, High Street, Battersea, London, S.W.
*Appleton, Robert	Hawthorn, near Melbourne, Victoria.
Ashford, Francis	Deptford High Street, London, S.E.
*Ashmead, John Stubbings	75, Cotham Brow, Bristol.
*Ashton, Frederick William	155, High Street, Winchester.
Aspinall, William	109, Scholes, Wigan.
Atkinson, George John	1, Baxter Gate, Doncaster.
Atkinson, Robert John	45, Harcourt Street, Newcastle-on-Tyne.
Attwater, Thomas Chipping	Bampton, Devon.
*Austin, Alfred	5, Rolyrood Terrace, Great Malvern.
Bailey, Henry	43, Markot Place, Warminster.
Baillie, Janet	Tr.nent, Haddingtonshire.
Baines, Joseph Charles	55, Blackman Street, Borough, London, S.E.
Baldwin, George William	130, Powis Street, Woolwich, London, S.E.
Banfield, Harold	26, Urswick Road. London, N.E.
Barrett, Allan Liftou	10, Brecon Road, Hay, Breconshire.
Batchelor, William J	29, Stand Lane, Radcliffe.
Bates, Edward	23. Fairford Grove, Kennington, London, S.E.
*Baxter, Robert	Huntingdon.
Beaven, Alfred George	Pretoria, S. Africa.
*Beckwith, Arthur Frederick	High Street, Stourbridge.
Beesley, Thomas	203, Clapham Road, London, S.W.
Belcher, Robert Brown	6, St. Peter's Street, Stapenhill, Burton-on-Trent,
Bentley, Charles Saville	136, Hanover Street, Sheffield.
Bentley, John Schofield	Rose Hill Terrace, Rawcliffe Bridge, R.S.O.
Beynon, Benjamin	125, High Street, Swansea.
Bland, Henry	93, Falsgrave Road, Scarborough.
Booth, William Smith	Hoyland Nether, near Barnsley. Yorks.
Botterill, Frederick William	20, High Road, Kilburn, London, N.W.
Bowden, Ambrose	13, Charles Street, St. James's, London, S.W.
Bowie, David	32, Great Western Road, Hillhead, Glasgow.
Bridger, Thomas	Middletown, New York.
Brook, Robert, jun.	11, Silver Street, Halifax, Yorks.
Brook, William	11, Silver Street, Halifax, Yorks.
Brown, John	166, Mill Street, Manchester.
Brown, Thomas	62, Church Street, Seaham Harbour.
Buck, Charles Burton	8, Lower Brook Street, Ipswich.
Burland, Walter Vincent	The Haymarket, York.
Burnage, William Arthur	Hale Farm, near Farnham.
Burnett, George	42, Ackers Street Manchester.
Burnham, Charles John, jun.	11, Axe Street, Barking.
Bush, George	High Street Chelmsford.
Campbell, Alfred	13, Lordship Lane, Dulwich, London, S.E.
*Carmichael, Lauchlan	Brisbane, Queensland.
*Carr. Tom Wormald	The Grange, Minskip, Boroughbridge.
Carrel, Henry Charles	Firs Cottage, Fitzwilliam Rd., Clapham, London. S.W.
Casey, Edward	55, Little Lever Ctreet, Manchester.
Chadwick, Arthur Geoffrey	10, Upper Borough Walls, Bath.
Challis. Frank	66, Lowth R ad, Denmark Hill, London, S.E.
Chamberlain, William	349, Collyhurst Road, Manchester.
*Chapman, Joseph George	P.O., Boston, U.S.A.
Childs, Charles John	11, Dale End, Birmingham.
Clark, John	17, Bryantwood Road, Holloway, London, N.
Clark, John Jeffery	34, The Triangle, Bournemouth.
Clews, Edwin Joseph	46, Claremont Road, Handsworth, Birmingham.
Clue, George May	312, Fratton Road, Portsmouth.
Coates, Harold Kinsella	42, Hicks Road, Seaforth, Liverpool.
Cockerill, Thomas	81, North Street, Ripon.
Cocking, Frederick John	The Hawthorns, Alvingham, Near Lough.
Coleman, Friend	44, Wood Vale, Lordship Lane, London. S.E.
Collett, Charles Benjamin	120, Ferndale Road, Clapham, London, S.W.
Cooke, Lewis Ernest	9, Victoria Crescent, Barnsley.
Cookson, Joseph	115, Bridge Street, Bradford, Yorks.
Coombs, William Thomas	Brentford, Middlesex.
Cooper, Edwin	Bracebridge, Simco, Canada.
*Cornish, William, jun.	101, Hoddle St., Collingwood, Melbourne, Australia.
*Cox, Joseph	14. Russell Street, Calcutta.
Craig, Henry Riddell	527, W. 125th Street, New York.
Crawley, William Pashler	223, Bay Street, Port Melbourne, Victoria.
Crompton, Benjamin	2, Fern Bank, Moston Lane, near Manchester
Cross, Robert	15, Drake Street, Rochdale.
Crossland, George	63, Kenworthy Street, Stalybridge.
*Cuff, George Henry	25, College Green, Bristol.
*Cule, Talesin	Dynevor House, Pontypridd, Glamorganshire.
Dalby, Robert Eastham	21, Howick Street, Monkwearmouth, Sunderland.
Davidson, Samuel Riddel	Deskford Street, Cullen, Banffs.
Davies, Daniel Evan	34, Oxford Street, Mountain Ash, S. Wales.
Davies, Samuel	187, Kensington, Liverpool.
Denton, Henry Thomas John	128, Exeter Street, Plymouth.
Devereux, Arthur James	Penn, Amersham, Bucks.
Dickinson, William	1, Queen's Gardens, Bayswater, London, W.
Dillon, Charles Linder	420, Main Street, Buffalo, New York State.
Dismorr, Henry	42, Windmill Street, Gravesend.
Dixon, Ernest Rowlatt	38, Carlton Street, Moss Side, Manchester.
Dodds, John Henderson	West Gordon, Berwickshire.
Dodridge, Thomas Mitchell	57, Stormont Road, Lavender Hill, London, S.W.
Drabble, Frederick Pearson	Clifton Lane, Rotherham.
Drummond, John Alexander	9, Corn Market, Belfast.
Duckenfield, Joseph	Winnipeg, Manitoba, Canada.
Duncan, Charles Tocher	24, Cotton Road, Dundee.
Dunn, Daniel	129, Belle Vue Road, Leeds.
Earce, Edwin Thomas	High Street, South Croydon.
*Edwards, William	Pleasley Hill, Mansfield, Notts.
Elliott, George Henry	11, Ilbert Street, Plymouth.
Ellisson, Charles	Aire Street, Knottingley, Yorks.
Endall, Edward Albert	5, Southwater Road, St. Leonards.
Errington, William	10, Oakwood Street, Whetley Hill, Manningham, Yorks.
Evans, Barrow	Curzon Street, Derby.
Evans, Thomas	22, Brunswick Street, Swansea.
Ewing, James	51, Albert Street, Edinburgh.
Fenton, William	16, Union Square, Borough, London, S.E.
Filmer, John Honeywood	26, King Street, Plymouth.
Fletcher, Isaac Brackstone	Totton, near Southampton.
Fletcher, William	Todmorden.
*Fowler, William Ratcliffe	122, Queen Street, Portsea.
Fowles, Frederick William	94, Edinburgh Road, Liverpool.
Franciosi Eugéne, Auguste de	11, Rue d'Armaille, Paris.
Francis, George	Market Place, Romsey, Hants.
Franks, Frank Richards	Manor Farm, Rowde, Devizes.
Freeman, John	88, Hoe Street, Walthamstow.
Furnivall, William Heber Gunning	29, Splot Road, Cardiff.
Gandy, William Seymour	Gee Cross, Cheshire.
Gant, Robert Boddy	39, Artillery Place, Woolwich.
Gard, John	Camelford. Cornwall.
Garrett, John	22, Essex Road, Acton, London, W.
*Garrett, John Henry	8, Torrington Place, London, W.C.
George, Enos Davies	Llangadock, Carmarthen.
Gibson, George Pittendrigh	33, Cathcart Street, Greenock.
Gibson, James Edward	107, London Street, Reading.
Gibson, Mary	Redcar, Yorks.
Godfrey, Henry	34, Adderley Street, Cape Town.
Gordon, Robert	Kimberley Hospital, Kimberley, S. Africa.
Gosden, James	Abergavenny, Mon.
*Goss, George	62, Tweedy Road, Bromley, Kent.
*Goucher, John	21, Beaconsfield Villas, Brighton.
Grant, John	West Street, D'Urban, Natal, South Africa.
Grant, John Ashlin	120, Hainton Street, Great Grimsby.
Gray, Adam	6, Merchiston Place, Edinburgh.
Green, John	16, New Heath Street, Hampstead, London, N.W.
Green, Robert	23, Hare Street, Woolwich, London. S.E.
Green, Sidney Herbert	61, Trinity Square, Boro', London, S.E.
Grey, John Elston	St. Michael's Villa, Purbeck Rd., Bournemouth W.
Griffiths, Henry William	Merthyr Tydvil.
Haddon, John	Stockdale Street, Kimberley, South Africa.

* X.—"It shall be the duty of the Registrar to make and keep a correct Register, in accordance with the provisions of this Act, of all persons who shall be entitled to be registered under this Act, and to erase the names of all registered persons who shall have died, and from time to time to make the necessary alterations in the addresses of the persons registered under this Act; to enable the Registrar duly to fulfil the duties imposed upon him, it shall be lawful for the Registrar to write a letter to any registered person, addressed to him according to his address on the Register, to inquire whether he has ceased to carry on business or has changed his residence,—such letter to be forwarded by post as a registered letter, according to the Post Office regulations for the time being; and if no answer shall be returned to such letter within the period of six months from the sending of the letter, a second, of similar purport, shall be sent in like manner; and if no answer be given thereto within three months from the date thereof, it shall be lawful to erase the name of such person from the Register, provided always that the same may be restored by direction of the Council of the Pharmaceutical Society, should they think fit to make an order to that effect."

Ham, William	176, High Street, Hounslow.
Hames, Harry Munkman	Bridge Street, Thrapstone.
Hamilton, John	81, Oxford Street, London, W.
Hanbury, William	84, Westgreen Road, S. Tottenham.
Hancock, Edward Newton	3, South View Cottage, Torr's Park, Ilfracombe.
Hancock, Fred.	1, Edward Street, Sheffield.
Hanna, George Henry	27, East Preston Street, Edinburgh.
Harper, James	Wilderspool, Warrington.
Harper, Joshua Henry	Uitenhage, Cape Colony.
Harrison, Thomas Henry	29, Causeyside, Paisley.
Harrison, William Dale	Perth, Western Australia.
Harston, John Frederick	228, High Street, Lincoln.
Hart, Thomas	27, South Bridge, Airdrie.
Hayes, Frederick	Duckworth Street, Over Darwen, Lancs.
Haynes, Alexander	25, Park Street, Derby.
*Heald, Benjamin	Sleaford.
Henderson, John George	11, Promenade, Lordship Lane, East Dulwich, London, S.E.
Hewitt, Joseph Frederick	35, Market Place, Burslem.
Hill, Robert Bryden	15, West Richmond Street, Edinburgh.
Hindle, John	Oulton Broad, near Lowestoft.
Hitt, Thomas Gabriel	Fairlight, Breedon Street, Long Eaton, Derbys.
Hodgkiss, William	61, Horseley Fields, Wolverhampton.
Holden, Robert Adrian	144, Alexandra Road, Manchester.
Hollingworth, John Lawson	21, New Street, Barnsley.
Holme, William Assheton	21, Drapery, Norhampton.
Holt, John	83, Clowes Street, West Gorton, Manchester.
Holt, Robert Dickinson	25, Liverpool Road, Stoke-on-Trent.
*Hornby, Alfred	96, Chetwynd Road, London, N.W.
*Horne, John	133, Wakehurst Rd., New Wandsworth, London.
Howard, Henry	Colkirk, Norfolk.
Hudson, James	5, Victoria Street Grimsby.
Hughes, George	50, Paddington, Liverpool.
Hughes, Henry John	2, Tennyson Buildings, Ashley Road, Upper Parkstone.
Hughes, John Edward	12, Medway Street, Westminster, London, S.W.
Hughes, William Charles	151, Hoxton Street, London, N.
*Hume, John Gordon	Planetree Cottage, Gatehouse.
Huntley, George Frederick	The Square, Wimborne, Dorset.
Jackson, Henry Frederick	1369, St. Catherine Street, Montreal.
James, Henry	197, Trafalgar Road, Greenwich, London, S.E.
James, John	35, Trinity Square, London, S.E.
Jeffery, Elias	94, Richmond Road, Barnsbury, London, N.
Jeffries, Benjamin	2, Heaton Place, Peckham Rye, London, S.E.
Jeffries, Gilbart	89, Victoria Road, Peckham. London, S.E.
Jelley, Stephen John	26, Ogle Street, Fitzroy Square, London, W.
Johnson, Frederick	142, Kingsland Road, London, E.
Johnstone, James	218, Kentish Town Road, London, N.W.
Jones, Charles Edward	14, Makin Street, Walton, Liverpool.
Jones, Matthias	Brynhyfryd, Swansea.
Jones, Thomas	Accra, West Coast of Africa.
*Jones, William	The White House, Lyth Hill, near Shrewsbury.
Jones, William James	Mitcham, Surrey.
Jones, William Nathanael	62, Albion Road, Stoke Newington, London, N.
Kay, Hildreth	8, Upton Place, Commercial Road, London, E.
Kay, John	Corner of Workman Street and Hawkins Street East, Los Angeles, South California.
Kelly, Francis Charles	12, Granville Road, Stroud Green, London, N.
Kenward, Robert	63, Arundel Street, Landport.
Kerr, George Jobling	Derby Road, Huyton, near Liverpool.
Kilkenny, Andrew	1, Well Street, Wellclose Square, London, E.
*King, Arthur	8, West Parade, Norwich.
Knaggs, Aaron	High Street, Loftus, Yorks.
Lacy, Arthur Edward	4, King Edward Road, Hackney, London, N.E.
*Lacy, Henry	4, Heslington Terrace, York.
Laidlaw, Walter	Church Street, Romsey.
Laing, John Stewart	9, Parkhurst Road, Tufnell Park, London, N.
Lakeman, Jasper James	Opposite the Church, Leytonstone, London, E.
*Lance, Henry	West Street, Durban, S. Africa.
Lander, Henry	3, High Street, Rugby.
Lansdale, John Anstey	Queen Square, High Wycombe.
*Leake, Thomas Whaplate	151, Uxbridge Road, London, W.
Lee, Thomas	116A, Mottram Read, Hyde, Cheshire.
Leslie, George	101, St. Mary's Road, Sheffield.
Lester, Theodore Christopher	Skipsea, Hull.
Lewis, Edward Prosser	Sydney, New South Wales.
Lewis, William Spencer	Castle View, Castle Street, Kendal.
Lightfoot, John	43, Strand Street, Cape Town, South Africa.
Lindley, Henry	57, South Street, Moor, Sheffield.
Lingard, Joseph	Cheadle, Cheshire.
Lockhart, John	23, Regent Place, Shawlands, Glasgow.
Lodge, Arthur William	8, St. George's Road, Hull.
Lomas, Charles Benjamin	Bogantan, Queensland.
Lunn, Arthur	13, Onslow Road, Richmond, Surrey.
McBeath, John William	Exeter Street, West Hartlepool.
Mackanass, Charles	1, Stratford Villas, Camden Square, London, N.W.
McMillan, James	69, Dombey Street, Toxteth Park, Liverpool.
McMillan, James Laker	Calcutta.
McNicol, John	362, Hamilton Place, Partick, N.B.
MacRae, John Gregor	Mosstodloch, Fochabers, N.B.
Maddock, Herbert	The Elms, Walmer Road, Birkdale, Nr. Southport.
Maitland. Samuel	11, Radnor Place, Plymouth.
Malcolm, Alexander	125, Victoria Road, Dundee.
Mangnall, Thomas	Park View, Phillips Pk. Rd., Bradford, Manchester.
Mansergh, William	451, Stockport Road, Manchester.
Marrett, Charles Ayton	Norwich Rd., Wisbech.
Marshall, Alexander James	High Street, Linlithgow.
Mason, David	6, Swanswell Street, Coventry.
Mason, Henry Humble	65, Old Street, London, E.C.
Maugham, Thomas	Tribune Street, South Brisbane, Queensland.
May, John	Garden Wharf, Battersea, London, S.W.
Melhuish, Thomas Boucher	King William Street, Sydney, N.S.W.
Mellin, Charles Jeremiah	High Street, Eltham.
Melvin, James	111, Causeway End, Aberdeen.
Messer, Frederic	49, Berners Street, London, W.
*Millar, James Herd	121, Almack Road, Clapton, London, N.E.
Moffet, William Emslie	52, Mount Pleasant, Barrow-in-Furness.
Moody, William Morton	6, Queen Street, Louth.
Moore, John Ernest	69, Queen Street, Auckland, N.Z.
*Morgan, William Ellis	Normanhurst, Llandudno
Murray Donald Sutherland	4, Bernard Terrace, Edinburgh.
Murray, George Balfour	Cullen, Banffshire.
Naish, Robert Elwell	Glasgow University.
Napper, Ernest Henry	The Hollies, Vicarage Lane, Bowdon.
Nayler, Joseph	56, Jefferson Avenue, Jersey City, U.S.A.
Neeson, Horace John	136, Mitcham Road, Croydon.
*Neville, Thomas Crofts	4, Victoria Terrace, West Brighton.
Newton, John Titus	202, Moseley Road, Birmingham.
Nicholls, Arthur Lindley	4, Victoria Street, Ventnor.
Nicholson, Charles	Bootham, York.
Nicholson, John Head	Poplar House, Flimby, Maryport.
Nicholson, Walter Joseph	29, Congreve Street, Birmingham.
Nicholson, William Ostler	13, Granville Square, London, W.C.
Niven, William Robert	Cape Town, Cape Colony.
Norfolk, Henry	Bilton Grange, Tockwith, near York.
North, Samuel James	39, Lord Street, Grimsby.
Norton, Anthony	Longnor, Stafford hire.
Ockenden, James	149, High Street, Notting Hill, London, W.
Ockenden, Joseph Kent	Toronto, Canada.
Ogilvie, William Ogilvie	Myna Tal, India.
Oldfield, Herbert	71, New Square, Chesterfield.
Oliver, John	2, Osborne Road. Tue Brook, Liverpool.
*Olliver, George Edward	Shillington, Hitchin.
Onion, Hannah Maria	Poyntington, West Hill Road, Bournemouth.
Osmond, George Mattingley	50, Redcliff Hill, Bristol.
Osmond, Henry Lincoln	Castle Cottage, Totnes.
Padley, William	170, Clarendon Street, South Melbourne, Australia.
Paine, Alfrod	164, Station Street, Burton-on-Trent.
Parker, Benjamin	28, Price Street, Burslem.
*Parker, Charles	Melbourne, Victoria.
Parker, Charles	Main Street, Kirkby Lonsdale.
Parker, Henry George	Dalkeith Place, Kettering.
Parker, James Herbert	Market Place, Middleton, Lancs.
*Parker, William Henry	Bucklersbury, Hitchin.
Patrick, Herbert Waring	High Street, Rusnden.
*Peacock, William Henry	52, Ivanhoe Road, Denmark Park, London, S.E.
Pearce, Alfred John	54, East Hill, Wandsworth, London, S.W.
Pearce, Edward Edwin	2, Mary Street, Southwick, Durham.
Peters, John	2, Newland, Northampton.
Petter, Walter	Ebberly Lawn, Barnstaple.
Phillips, Frank Leslie	6, Victoria Buildings, Temple Row, Birmingham.
Phillips, George Henry	5, The Pavement, Merton Road, Merton.
Pick, Alfred	Chester-le-Street.
Pickard, James	Leeds Road, Bradford, Yorks.
Pinckney, Charles Edward	4, Thayer Street, London, W.
Pirie, James Mather	17, Buccleuch Street, Glasgow.
Pool, George	5, Honor Oak Rise, London, S.E.
*Postans, Arthur William	32, Bettridge Road, Hurlingham Park, London.
Potter, Herbert Mills	37, Market Hill, Sudbury, Suffolk.
Pratt, Francis	39, Alexandra Road, Selhurst, London, S.E.
Preston, William	152 James Street, Burnley.
Price, Charles John	42, High Street, Putney, London, S.W.
Price, Thomas Ulock	1, King David Lane, Shadwell, London, E.
Pridgeon, Henry Pacey	151, Grove Green Road, Leytonstone, London, N.E.
Priestley, John Andrew	Napier Street, Bradford, Yorks.
Priestley, William	Poonah, India.
Pring, Charles Herbert	41, High Street, Bristol.
Radford, Thomas Charles	Ferrybridge, Yorks.
Ray, Frederick James	5, Peckham Rye, London, S.E.
Read, Robert Elimelech	86, Whistler Street. Drayton Park, London, N.
Reboul, Anthony Percy	60, Liverpool Road, London, N.
Reed, William	3, Mary Street, Westgate Road, Newcastle-on-Tyne.
Reedman, William Henry	404, Monument Road, Birmingham.
Rees, Llewellyn Vosper	11, Woodwell Crescent, St. George's Road, Bristol.
*Richards, Thomas	Station Road, Porth, Glam.
Rickerby, Thomas	10, Cleveland Square, Liverpool.
Rishworth, Henry	Aberford, Yorks.
Robbie, Charles Thain	7, Corn Market, Belfast.
Roberts, Frederick Lancelot	224, Sebert Road, Forest Gate, London, E.
Robertson, Alexander Hamilton	458, Shields Road, Pollokshields, Glasgow.
Robertson, George Farrie	134, Montgomery Street, Edinburgh.
Robins, John	Framlingham, Suffolk.
Robinson, Charles Montague	Church Street, Attleborough, Norfolk.
Robotham, George Henry	54, Dale End, Birmingham.
Roper, Albert Charles	15, Withington Road, Manchester.
Rose, Alexander Skene	21, Noble Place, Leith.
Rowe, John Bullen	13, Garden Crescent, West Hoe, Plymouth.
Sampson, Nicholas Mackey	18, Pomona Place, Walham Green, London, S.W.
Sanders, Basil Stanley	63, Stow Hill, Newport, Mon.
Sanderson, James Boyer	Barnack, Northamptonshire.
Saunders, William John	34, Surrey Square, London, S.E.
Savege, Ernest	50, George Street, Croydon.

Schofield, Harry	3, High Park Road, Southport.
Scholefield, Herbert	Regent Street, Belle Vue, Wakefield.
Schuller, Walter Joseph	7, Carisbrooke Road, Walthamstow.
Sclater, John George	15, Livingstone Place, Edinburgh.
Scott, Malcolm	45, South Clerk Street, Edinburgh.
Scruton, Frederick William	The Grange, Minskip, Boro'bridge.
Seanor, Samuel Exley	26, Springfield Place, Leeds.
Seward, George Halifax	St. Marylebone Infirmary, Rackam Street, London.
*Sharp, David Blakey	Tavistock Place, Borough Road, Sunderland.
Shipman, Ernest William	"Rylstone," West Hill Road, Bournemouth.
Silverwood, Joseph	Elm House, Shelley, near Huddersfield.
Sime, William	21, Cathcart Place, Edinburgh.
Simpson, Bertram	Grassington, Skipton.
Simpson, Thomas	3, Park Cottages, Brighton Road, Croydon.
Simpson, William	85, Collins Street East, Melbourne, Australia.
Skeates, Frank	14, Shaftesbury Avenue, Lower Weston, Bath.
Skellon, William	33, Renshaw Street, Greenheys, Manchester.
Smale, Frederick Thomas	Darjeeling, India.
Smith, Alfred	Johannesburg, South Africa.
Smith, Charles	81, Bishopsgate Street, London, E.C.
Smith, David A.	Bristol, Quebec Province, Canada.
Smith, Joseph	3, Kingsmead Terrace, Bath.
Smith, William Davidson	13, James Street, Harrogate.
Smyrk, Frank Alfred	City House, Lichfield.
*Snell, Charles Henry	Campinas, Sao Paulo, Brazil.
Snell, Charles Henry	East House, Church St., Stoke Newington, London.
Snoxell, Samuel	18½, High Street, Guildford.
Sollitt, Arthur	Shipton Street, Clifton, York.
Southam, Stanley	92, Upper Lloyd Street, Moss Side, Manchester.
Southern, Joseph	139, Strangeways, Manchester.
Stamford, Frederick	Manor House, Skidby, Hull.
Stanfield, Francis Parkin	Sheffield.
Stephens, Thomas Fowle	49, Wells Street, Oxford Street, London, W.
Stephenson, Francis	Market Place, Kirkby Moorside, Yorks.
Steven, David	12, Lansdowne Gardens, Edinburgh.
Stewart, Robert	Rangoon, British Burmah.
Stewart, William	Melbourne, Australia.
Strachan, Binny	63, White Post Lane. Manor Park, Essex.
Stubbs, Thomas Shaw	22, Nicholas Street, Bristol.
Sutton, Allan	80, Holt Road, Liverpool.
Tabberer, William Frederick	1, Fieldslea, Lower Poole Road, Parkstone, Dorset.
Tarry, William Ambrose	53, Fleet Street, Derby.
Taylor, Charles Edward	Sedbergh, Yorks.
Taylor, Henry Pearson	Shawdon Lodge, Alnwick.
Taylor, Philip Neville	Charters Towers, Queensland, Australia.
Taylor, Thomas Ernest	St. John's Theological College, Highbury, London.
Taylor, William Cottle	Packington Street, Kew, Near Melbourne.
Thacker, Henry Ransley	164, St. Ann's Well Road, Nottingham.
Thomas, Frederick William	5, Fitzhugh Place, Southampton.
Thomson, George William	Brighton, near Melbourne, Victoria.
Thornhill, Ernest	3, The Promenade, Ealing Dean.
Tilsley, Thomas	7, Berriew Street, Welshpool, Montgomeryshire.
Timms, William Henry	Bimdaburgh, Queensland.
Tomlinson, George	Waddingham, Lincolnshire.
Towers, William Londesborough	3, Queen Square, Leeds.
*Trask, Thomas	1, Vernon Chambers, London, W.C.
Tucker, William Tyley	Byculla, Bombay.
Tupholme, John James	De Beers Road, Kimberley, South Africa.
Turner, John Arthur	1, Argyle Street, Bedford.
Turner, Joseph Kitchen	Madelia, Watonwan Country, Minnesota, U.S.A.
Turner, Thomas	24, Park Terrace, Whitby, Yorks.
Venables, George	14, Ordnance Place, The Hard, Portsea.
Waddy, Ernest Alfred	Dover.
Wadsworth, Edgar	Birk House, Dalton, Huddersfield.
Walker, George	Athol House, Milward Road, Hastings.
Walker, John	34, Conduit Street, Bond Street, London, W.
Wallis, John	"Collingbourne," Christchurch Road, Boscombe.
Wallis, William	Little Ouseburn, York.
Watson, Robert	Murray Street, Hobart, Tasmania.
Watson, Thomas Bell	West Street, New Alresford, Hants.
Weir, James Anthony	2, Heaton Terrace, Heaton.
West, Arthur Thomas Taylor	High Street, Barrow-on-Humber.
Wheeldon, Edwin	1, Summerhill Terrace, Warrington.
Wheeldon, William Henry	42, Crompton Street, Derby.
Wheeler, Alfred	23, Hartington Road, Brighton.
White, Frederick Ernest	141, Pear Tree Road, Derby.
White, John Alexander	23, Livingstone Place, Edinburgh.
Whitehead, William	2, York Terrace, Wash Lane, Bury.
Whitewood, John	127, Algernon Road, Lewisham, London, S.E.
Whyte, James	33, Rosemount Viaduct, Aberdeen.
Wickham, William	509, New Cross Road, London, S.E.
Wilkinson, Samuel	35, Watson Street, Birkenhead.
Williams, Leonard Augustus	Brynmawr House, Bettws, near Bridgend.
Williams, William	9, Whitefield Road, Everton, Liverpool.
Williamson, Joseph Edwd.	19, Broughton Street, Cheetham Road, Manchester.
Wilson, John Hart	54, Hudleston Street, Cullercoats.
Wine, John Alfred	Hospital for the Insane, Yarra Bend, Melbourne, Victoria.
Wood, Henry	56, Moorgate, Bury.
Wood, Warwick	56, Moorgate, Bury, Lancs.
*Wood, William	126, Northumberland Street, Newcastle-on-Tyne.
Wright, Alexander	Rothes, Elginshire.
Wright, William Robinson	High Street, Chatteris, Cambs.
Yeo, John Henry	Cape Town.
Young, Horatio Thomas Barmby	29, Paradise Street, Liverpool.

MEDICAL JOTTINGS.

A Scheme for the Adoption of the open-air treatment for consumption is being considered at the Brompton Hospital for Consumption. A proposal to establish a sanatorium in the country in connection with the hospital is also under consideration.

The Prince of Wales was present at the Royal College of Surgeons in Lincoln's Inn Fields, when Sir William MacCormac delivered this year's Hunterian oration. This is the third occasion on which H.R.H., who, by-the-bye, is an honorary Fellow of the Royal College of Physicians, has been present at this great annual function. His presence this year was no doubt partly due to the fact that the orator was the surgeon in charge of the Prince after his recent accident.

The Death is Announced of Mr. Thomas Cooke, M.D. (Paris), F.R.C.S. Eng., at the comparative early age of fifty-eight. In 1870 Mr. Cooke founded the London School of Anatomy and Physiology, which he thenceforth conducted up to the time of his death, which took place without a moment's warning whilst he was actually engaged in demonstrating to his class at Brunswick Square, W.C. Starting in a very small way, by his perseverance, energy, and untiring application to work he ultimately built up a sort of extra-mural college, which occupied an altogether unique position in the world of medical teaching, and though it was usual to speak of him as a "grinder," inasmuch as he prepared men for examinations, he was regarded as one of the best teachers of human anatomy, and hundreds of men are under deep obligation to him for the real knowledge he imparted in his pleasantest manner in his quadrilateral building of corrugated iron in a disused cemetery. His was the only private medical school recognised by the examining boards, and he was able to "sign up" his pupils for the Universities of London and Durham, the Colleges of Physicians and Surgeons, and the Society of Apothecaries.

Mr. Henry Jones, a member of the medical profession, but known to all the world as "Cavendish," is dead. He was sixty-eight years of age. The eldest son of a well-known practitioner in Soho Square, he was educated at King's College and St. Bartholomew's Hospital, and became M.R.C.S. and L.S.A. in 1852, and was in general practice from 1852 to 1869, when he ceased to practise, but kept up his connection with his old profession by becoming one of the Court of the Apothecaries' Company. His father was fond of whist and enjoyed his nightly rubber, and the son early became an able player. He then wrote, anonymously, a small treatise on the subject, which was published by Messrs. De la Rue and Co., and "Cavendish" became the authority to which his father appealed when disputes arose on some point of practice, without, says the *Times*, the least idea as to the identity of the author. In addition, "Cavendish" wrote on piquet, ecarté, billiards, lawn tennis, and croquet. He was editor of the card department of the *Field* and of the pastime department of the *Queen*.

The Widow of the Late Mr. Henry Lee, F.R.C.S., who was Consulting Surgeon to St. George's Hospital, has presented the portrait of her late husband, by Mr. James Sant, R.A., to the Royal College of Surgeons. Mr. Lee was formerly Member of Council and Lecturer on Pathology and Surgery to the College.

The New Professor in Pathology, in Cambridge University, is Dr. G. Sims Woodhead, who has been elected to fill the vacancy caused by the premature and lamented death of Dr. Kanthack. Dr. Woodhead's literary work and his successful tenure during the eight years of the post of Director of the Laboratories of the Conjoint Board of the Royal Colleges in London are amongst his many qualifications for this post.

The Death is Announced, in his seventy-second year, of Mr. Charles Bader, M.R.C.S., the Consulting Ophthalmic Surgeon to Guy's Hospital.

The Practical Boycott to which the Army Medical Department was subjected by the medical profession at large has entirely disappeared now that the officers of the Royal Army Medical Corps have had conceded to them the military rank for which they so long agitated. A few months ago there were not enough

candidates to fill the vacancies in the Corps, but at the next examination there will be fifty-four candidates for twenty-four vacancies. The great medical schools are now making constant applications to the Director-General for nominations for specially qualified and selected men. These the department is very glad to welcome, as they have generally been house surgeons in hospitals or have otherwise acquired most valuable experience.

DR. W. J. COLLINS, the late Chairman of the London County Council and surgeon to the London Temperance Hospital, has been appointed by the President of the Board of Agriculture a member of the Departmental Committee to inquire into the Diseases of Animals Act.

IRISH NEWS.

[*From our Local Correspondents.*]

MR. J. BUTLER, CORK, has been awarded by Her Majesty's Commissioners of the Exhibition of 1881 a Research Scholarship of £150 for one year, renewable at the discretion of the Commissioners. He will study botany at the Godrell Laboratory, Kew, continuing there the researches of the foreign organisms associated with the roots of plants generally.

MR. T. W. ROBINSON, M.P.S.I. (Hayes, Conyngham, & Robinson, Ltd., Dublin) has been elected a member of the Committee of the South City Loyalist Registration Association.

AT CLONTARF PETTY SESSIONS, on Friday last, a man named Moran was prosecuted for having broken a sheet of glass in Messrs. Hayes, Conyngham & Robinson's branch pharmacy at Fairview. The accused deliberately walked up to the shop and hurled an immense stone through the window, destroying, in addition to the plate-glass, a large quantity of stock bottles inside. He was sent for trial, bail being refused.

MESSRS. LESLIE & Co., chemists, Dublin, have sent to one of the Munster Boards of Guardians a dignified protest against the system of advertising for tenders for the supply of drugs and medicines, and then rejecting the lowest in favour of more highly invoiced ones. They describe the advertisements in such cases as a farce, and very properly decline to compete under such conditions.

IN THE BANKRUPTCY COURT, DUBLIN, on the 17th inst., before Mr. Justice Boyd, the case of Charles H. Roche came on for hearing. The bankrupt was the proprietor of the Medical Hall, Mallow, and possessed some property in Cork. A Mr. Hegarty had advanced the bankrupt £700 on foot of a mortgage executed on that property. Mr. Hegarty stated that he also advanced £250 to Mr. Roche in various sums. The witness was advised by the assignee to forego his claim to the £250, which was not covered by security, and not to throw good money away by seeking to establish that which was bad in law. The examination was adjourned.

A TRADER NAMED CONWAY has been prosecuted at Pallaskenry for selling impure linseed meal. The analysis showed that the article was ground linseed cake from which nearly all the oil had been extracted. The purchase was made as a medicine. Defendant pleaded that the linseed meal was sold as it came from the wholesale chemists. A fine of 5s. and costs was imposed.

THE LOCAL GOVERNMENT BOARD has decided upon revising the existing lists of medicines and medical appliances in use by the various poor law unions throughout the country. A re-issue of the forms may be expected shortly.

DR. MEREDITH ROWNTREE WHITLA, M.P.S.I., Examiner to the Pharmaceutical Society of Ireland, has been elected Vice-Chairman of the Monaghan County Council.

PROFESSOR LAURIE, M.A., has delivered, at Limerick, an exhaustive lecture on the Röntgen rays, in the course of which he demonstrated their use to chemists as a profitable extra. He explained the production of the X rays and showed numerous photographs in connection. His illustrations of the practical everyday use of rays were viewed with much interest.

MESSRS. JAMES MCDONNELL & SONS' drug and chemical concern, Portaferry, has been destroyed by fire, the damage being estimated at £1000. The firm, with their characteristic enterprise, are already building new premises.

AT LONDONDERRY LAST WEEK a fire broke out on the pharmaceutical concerns of Messrs. McCaul and Co., Ferry Quay Street. The outbreak was subdued by the assistants, and when the fire brigade arrived their services were not required. The damage done is inconsiderable.

THE DISPENSARY OFFICERS OF THE CORK DISTRICT have resolved to invite the Irish Medical Association to hold its next annual meeting in Cork, instead of as in Dublin as heretofore. They also want the entrance to dispensary appointments to be made by examination as in the army and navy, compulsory pensions, annual holidays, allowances for incidental expenditure and promotion by merit and seniority.

THE ARKLOW CORDITE FACTORY (Kynoch & Co.), which was recently closed as a drastic method of awakening the local authorities to a sense of their duty in providing proper harbour accommodation for cargoes of explosives, is about to be re-opened, the lesson having proved effective.

DR. W. C. TOWNSEND, L.A.H., a fine specimen of the old-time apothecary, has just died at Queenstown, close on ninety years of age. He had a long and successful career, and took a keen interest in the Irish Poor Law service, with which he was connected for over a quarter of a century. Much regret is expressed at his demise.

THE MEMBERS OF THE DUBLIN FIELD AND BOTANIC CLUB met last week in the Royal Irish Academy. Mr. R. Praeger gave an interesting account of a three years' study of ferns, etc., and illustrated his subject by numerous specimens. Subsequently Dr. T. Johnson, F.L.S., gave a lecture on "The Highland Type Plants of the New Cybele Hibernica," and the plants shown were stated to be prepared for exhibition in the botanical rooms of the Science and Art Museum, and would be very useful to teachers of botany and their classes.

THE SUM OF ONE SHILLING, the smallest fee ever tendered to a doctor in Ireland, has been passed by the Caherciveen Board of Guardians as remuneration for the services of Dr. S. Walker, while acting as *locum tenens* for the regular dispensary officer. This is explained by the fact that while the guardians are compelled to pay the substitute for an absent medical officer, they are allowed to fix the amount themselves.

PROFESSOR ARMSTRONG, lecturing last week at the Royal Dublin Society on "Science Teaching as a Means of Intellectual Development," said that science had hitherto been taught without enthusiasm. The young should be shown the method of discovery, and encouraged to make experiments for themselves. The introduction of chemistry into schools was most essential, as, after all, chemistry was the dominant science of humanity.

CHARLES MCMULLEN, an employé of the Eglinton Chemical Company, Glenarm, has been killed by a large stone falling on him while at work.

BELFAST HAS GONE AHEAD OF GLASGOW in regard to botanical supplies and specimens. The Govan Board of Governors in stocking their greenhouse could only get the necessary plants and flowers from local horticulturists. The Glasgow nurserymen, however, have been given an opportunity to retrieve the defeat—a difficult task with the Newtonards florist in the field.

THE BELFAST CITY ANALYST reported that the practice of adulterating linseed oil was on the increase, and as when used for medicinal purposes, its sophistication was attended with danger, instructions were given to the inspector to that effect.

THE FASCINATIONS OF TOXICOLOGY have impelled some persons in the South of Ireland to poison a number of valuable hunting hounds. For the sake also of catching a few dozen fish, thousands of immature salmon have been poisoned by throwing sacks of spurge weed into the Southern rivers.

Mr. James A. Doyle, L.P.S.I., Belfast, has been giving cinematographic exhibitions lately which, needless to say, were completely successful in attracting large audiences, and winning their appreciation and applause.

The Belfast Corporation has allowed the Ulster Chemists, Ltd., £1 15s. for malicious injuries to glass in Mill Street Branch, and Mr. Robert Barron £1 for show-bottles and stock. The amounts claimed were £9 18s. 4d. and £7 19s. respectively.

The Irish University Question is still in a nebulous stage. Some desire the retention of the Royal but with vastly increased resources, making it a teaching as well as an examining body. The abolishment of the R.U.I. degree, which now has a commanding influence anywhere in the United Kingdom, would be a national loss. But that this will result unless the Irish Hierarchy (that is, supposing their demands must be conceded) withdraw their ultimatum for separate treatment is certain. The corporate body of the Q.C.B., in anticipation, have formulated their views, they suggest the re-habilitation of the Old Queen's University in Belfast "with adequate endowment."

Trade Notes.

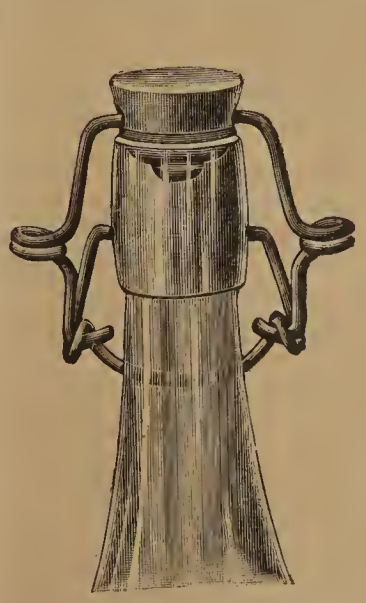
Messrs. Cresswell Brothers & Schmitz, of 18 and 19, Red Lion Square, the well-known sponge merchants, have recently introduced a new series of assorted sponges in specially designed boxes for window or counter display. The prices range from 1s. 6d. for a box containing twenty-four sponges to 4s. 6d. per box

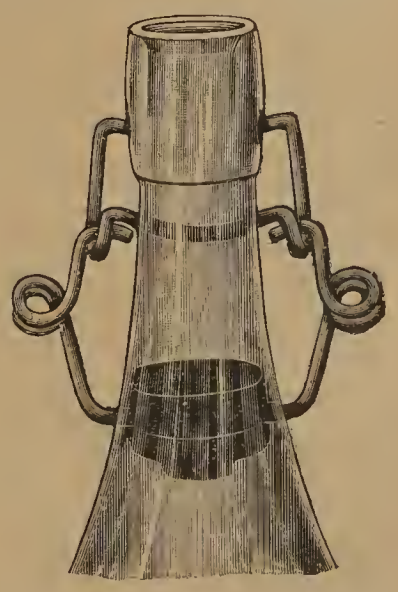
of twelve sponges. It will be remembered that last year this firm sent out on loan to purchasers of their sponges a number of attractive and original figures covered with sponge for window display. The best known is the "Sponge Diver," 3 feet 8 inches high. These figures are again available this season, and particulars will be forwarded by Messrs. Cresswell on application.

Messrs. G. Nelson, Dale & Co., Ltd., 14, Dowgate Hill, London, E.C., are offering a pure mutton essence ("Hipi" brand), which has been proved to present the following proximate composition: Moisture, 35·20 per cent.; organic matter, 56·38 per cent.; mineral matter, 8·42 per cent. According to the *Lancet* analysis the composition of the organic matters was as follows: Total proteids, 38·22 per cent.; meat bases, 16·60 per cent.; fat, 1·56 per cent. The proteid matters insoluble in cold water amounted to 7·72 per cent., while the proteid matter thrown down on boiling and after the addition of a few drops of acetic acid was 1·21 per cent. It is well known that mutton is more digestible than beef on account of its fibre being smaller and more tender, but, on the other hand, the fat of mutton is harder and probably less digestible. Practically all the fat, however, is separated during the preparation of the extract, the residue only amounting to 1·56 per cent., and the nutrient value of the extract appears to be established. Its flavour is also good, and the preparation compares, from a dietetic point of view, very favourably with similar beef derivatives. It also makes an excellent soup and is retailed in 4-oz. tins at 1s. each.

Messrs. L. Lumley & Co., 1, America Square, Minories, E.C., have submitted for examination a patent domestic steriliser—the "Gnom"—which is as simple in use and gives as satisfactory results as the most exacting person could desire. The great feature of this process of sterilisation is that immediately the milk or other liquid is placed in the bottle the stopper is closed, and remains so during the sterilising process, thus rendering the operation practically automatic. This is achieved by an ingenious

patent stopper, the spring of which rises to release the pressure during sterilisation, and automatically closes immediately the pressure is relieved. The illustrations clearly show the construction of the apparatus and the working of the patent stopper. The outer vessel is enamelled, and the wire cage containing the bottles can be removed bodily. The smallest form of the apparatus





contains 4 half-pint bottles and is retailed at 12s. 6d., complete. Larger sizes can be obtained, holding 6 or 10 half-pints; 4, 6, or 12 pints; and 4 or 8 quarts, the prices being equally moderate throughout. To chemists and druggists such an apparatus should prove invaluable.

Calvert's Surgeons' Soap is a new carbolic soap prepared by Messrs. F. C. Calvert & Co., of Manchester, for cleansing the hands of surgeons and the skin of patients previous to operations. It is also adapted to various other uses which will commend them-

selves to those engaged in obstetrical, pathological, and anatomical work, etc. Public vaccinators will find it a necessary adjunct under the new regulations for public vaccination. As there is no danger in its use, it will be found preferable to mercurial soaps. It may also be usefully employed as a soap during desquamation after scarlet fever, as it disinfects and renders harmless the particles of cuticle removed.

Messrs. J. Raphael & Co., 51, Clerkenwell Road, E.C., have recently published an illustrated catalogue and price-list of opticians' requisites, which is invaluable to chemists interested in the optical trade. It contains 262 pages, is printed on good paper, and is as complete a guide to the optician's business as could be desired. Altogether it is a credit to the firm, and no chemist interested in the business can well afford to be without a copy, especially as Messrs. Raphael make a specialty of chemists' orders.

Messrs. Beaufoy & Co., of South Lambeth, S.W., have long been noted for the excellent quality of their acetic acid, vinegars, and orange wine, nothing better of the kind being obtainable. In addition, they are now specially offering a series of medicated wines, which will well repay attention. The coca wine only requires to be tasted to be appreciated, and does not partake too much of the nature of a medicine. The extract of meat and malt wine is prepared from Liebig's extract of meat, and as palatable as it is possible for such a combination to be. The quinine wine, of course, is fully up to the B.P. standard, and of first-class quality. All the wines are put up in tastefully finished bottles, and chemists who have not already done so should hasten to send their trade cards with applications for samples and prices.

The Natural Food Company, Ltd., 70, Long Lane, S.E., proprietors of Dr. Allinson's Natural Food Specialties, have formulated a system by which a mutual interest may be firmly established between manufacturer and distributor. The Company proposes to appoint agents under an agreement. The agent undertakes to purchase not less than 5*s.* worth of goods weekly at trade list prices in £1 lots, and agrees not to sell the goods under specified protected prices. The Company, in consideration of these terms, agrees to supply the agent with any of its articles at the lowest trade prices and conditions; at the expiration of a year to give the agent a £1 share in the Company, with dividend thereon; also a bonus of £5 each year, and to increase the bonus *pro rata* upon amount of purchases. A profit of 20 to 30 per cent. is guaranteed upon the goods, according to amount of each purchase, when goods are sold at face value. If goods are bought in £5 lots, the agent gets the best terms. The Company also undertakes not to supply its goods to anyone who sells them below minimum fixed prices. This system has been favourably commented upon by the Secretary of the P.A.T.A., and it certainly appears to be as good a scheme as has ever been devised whereby the retailer secures to himself a profit and permanent advantages.

Mr. C. Shippam, Chichester, sends a sample of benzoated lard (adeps benzoatus, B.P.), which is a very satisfactory preparation, having a good colour, the proper consistency, and the true balsamic odour of benzoin. It is free from starch, membranous matter, etc., as indicated by its entire solubility in ether, and those who have not the conveniences for economically preparing this product may know where to place their orders to advantage.

Messrs. Goodall, Backhouse & Co., of Leeds, are offering fine medicinal cod-liver oil, known as the Hardy Norseman brand, which is as near tasteless as any. Though the slight fishy odour, as mentioned in the Pharmacopœia, is there, it is unmixed with the least suspicion of that rancidity which renders many oils that are sold so disgusting to the patient. It bears prolonged exposure to a low temperature remarkably well, without any solid fat becoming separated. This article is put up in well-dried panelled bottles; the oil is therefore clear and bright. The bottles are capped and the attractive labels bear the picture of a hardy Norse fisherman.

Flexible Gelatin Capsules.—Messrs. John Richardson and Co., Ltd., Leicester, make a special line of their flexible gelatin capsules, which should command a ready sale and prove a convenience at the dispensing counter for those who do not fill their own capsules. They are made in various shapes, oval, pear-shaped, and round (perles). They are readily soluble in water at the temperature of the body. Among the many varieties kept in stock may be mentioned: Ext. cascaræ, ℥xxx.; ol. santal. ang., ℥x.; syr. Eastonii, ℥xxx.; sulphonal, grs. v.; pil. Blaudii, grs. v.; creosote in oil, ℥i.; ol. jecoris aselli, ℥xv.; ol. terebinth. rect., ℥x.; morrhuol c. creosote; potassii bichromas, gr. 1/10; hæmoglobin co.; colchicinæ salicylas co.; guaiacol in oil, ℥v.; pepsin porci, grs. ii. The perles include creosote, ℥i.; chloroform, ℥v.; turpentine, ℥v.; apiol, ℥v. The appearance of these capsules is elegant in the extreme, perfect finish being supplemented by a varied colouring of the gelatin basis, among the colours employed being different shades of yellow and red.

Messrs. Wilkinson & Simpson, Ltd., Newcastle-on-Tyne, have sent a sample of cod-liver oil, which is bright and clear, and without unpleasant odour. No separation of stearin or other solid fat is observable on exposing the oil for some hours at the freezing point.

Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C., submit a specimen of their "Soloid" carbolic acid, gr. 60. The introduction of this preparation has been prompted by a consideration of the constantly increasing use of carbolic acid as an antiseptic and the great difficulty of carrying the usual bulky solutions of this chemical. "Soloid" carbolic acid, gr. 60, enables the practitioner to carry, either in his hand-bag or in his pocket, a convenient quantity of ready weighed and quickly soluble antiseptic for the preparation of solutions of any desired strength at the moment, and in the place where they are required to be used. A harmless artificial colouring agent has been added to "Soloid" carbolic acid, and this colour distinguishes it from compressed drugs intended for internal use. The colouring is communicated to the water in which solution is effected, thus rendering it unlike any other liquid in customary use at the operating table or in the sick room. A distinctive shape provides an additional safeguard. The preparation is issued in tubes containing six in each. So many directions in which "Soloid" carbolic soap, gr. 60, may be used will at once occur, that it seems unnecessary to enumerate them. It may be mentioned, however, that one dissolved in three-quarters of a pint of water yields approximately a 1 per cent. solution. One dissolved in 3 pints of water yields a solution suitable for use as a mild disinfectant, or as an antiseptic spray for the mucous membranes of the mouth, pharynx, larynx, and nose. "Soloid" carbolic acid is also prepared of gr. 20 strength.

Messrs. J. L. Hatrick and Co., Ltd., of 82, Turnmill Street, E.C., have been appointed sole agents in this country for Stoddart's veneered aseptic surgical splints. The series consists of sixty-six varieties, each moulded to fit some part of the body, and suitable for every kind of fracture or dislocation. It is claimed that they are stronger, lighter, and cheaper than any other splint on the market, and that they weigh only half as much as others, and are equally strong. They become elastic and pliable by heating, and require little or no padding, and, as they are waterproof, will not warp. Single splints are sold, or assorted sets of thirty to forty pieces are also supplied. These can be recommended to ambulance associations and the accident ward sof local hospitals.

The York Glass Company, Ltd., directs attention to the metric glass measures made by the firm. One set comprises eight instruments, seven having the capacities 1000, 500, 250, 100, 50, 25, and 10 C.c., and being of the usual cylindrical form, provided with foot, while the eighth to complete the set has the form of a 5 C.c. pipette. Price of the whole set is 15s. 7d. Another set having the familiar conical form are graduated on one side in minims, drachms, and ounces, and on the other in C.c. This set comprises six instruments, ranging from 4 ounces and 120 C.c. to 1 drachm and 5 C.c., and costs 8s. 6d. For a slight additional cost the measures are provided with two spouts, so that one spout is always available, whichever graduation or hand be used. In addition, the Company are also introducing a list of standard metric measures, several sets of which have been already supplied to various local authorities, including the London County Council and the Corporation of the City of York. These standard measures are of novel form, having a bulb or globe at the foot. The advantages claimed for this form are:—(*a*) The measure, especially in the larger sizes, is reduced in height to a more convenient size for handling, and this without increasing the diameter of that part of the measure on which the graduations are shown.

(*b*) The diameter of that part of the measure on which the graduations are shown is less than in the old style, whereby finer and more correct readings are obtained. (*c*) The graduated portion is brought considerably nearer the base of the measure and from this a greater convenience in working results. (*d*) The stability of the measure, when stood on its base, is greater than in the old style. (*e*) The measures may be packed in less space, and this constitutes a decided advantage, especially when the measures have to be taken out of the office for inspections on other premises. The set is supplied in a velvet-lined mahogany box and is in other respects in accordance with the Board of Trade regulations. A set of these measures can be seen at the office of the Standards Department, 7, Old Palace Yard, Westminster, S.W.

Messrs. Hearns, Ltd., send a specimen poison bottle (patent No. 6324), the unique shape of which should certainly render it next to impossible for accidents to happen, which frequently occur when bottles of the ordinary shape are used. It is made of dark blueglass, with the word "poison" on both sides, and is contracted in the middle. It is made in sizes from 1 to 40 ozs., and samples and prices can be obtained on application to any of the wholesale drug or druggists' sundry houses.

Messrs. Geo. Houghton and Son, 88 and 89, High Holborn, W.C., are offering several special cheap lines in cameras at the commencement of the new season. Their "Holborn" camera, sold at one guinea, now carries twelve instead of six quarter-plates, has a capital achromatic lens, an Ever-set time and instantaneous shutter, two reliable finders, and a simple changing arrangement which cannot get out of order. The "Vict" camera set is now retailed at £3 10s. for the half-plate size, and £5 10s. for the whole-plate size; the "Sanderson Popular" set, a very fine outfit, is also offered at an extremely low price, a complete half-plate set being offered for £5 5s. No better cameras than these are on the market, and chemists requiring goods in this line should apply for complete descriptive pamphlets, which will be sent free on application.

The North of Ireland Chemical Company, Belfast, whose agent is Mr. Archibald Hamilton, 106, Elliot Street, Glasgow, has been engaged in the manufacture of the different forms of dipping mixtures—powder, paste and liquid—for about a quarter of a century, and has recently added another valuable preparation to its productions, under the name of "The Belfast Foot-rot Ointment." Personal examination of this ointment and the firm's liquid antiseptic dip shows that they are both beautifully-compounded preparations, their condition bearing evidence of careful and skilful admixture. The latter is a perfectly miscible preparation, diffusing readily in either hot or cold water. Farmers and flock-masters will appreciate this ease of mixing the dip, the regular composition of the article and its parasiticide properties. The ointment is easily applied, will not immediately wash off in the rain, thoroughly excluding air, a point which is so essential in healing the sores. Pharmacists in agricultural districts will find these saleable articles.

Messrs. Geo. Phillips and Co., 49, Clerkenwell Road, E.C., submit a sample of a pure orange wine which is particularly suitable for pharmaceutical purposes. It has a very fine flavour and makes excellent quinine wine.

Messrs. James Woolley, Sons, and Co., Ltd., Manchester, are offering a novel safety stopper band or poison guard, consisting of an indiarubber ring, which fits round the neck of the bottle, and has attached to it an indiarubber band, which passes over the top of the stopper. When the bottle is required for use the band is moved aside, the stopper withdrawn, and the band springs back into position; this allows sufficient space for liquid or powder to be withdrawn, yet acts as a check or indicator as to the nature of the contents of the bottle. In replacing the stopper the band is moved aside, then lifted over the top of the stopper. The ring is never removed from the top of the bottle, except for cleaning purposes. The stopper band is easily adjusted, does not interfere with the dusting of the bottle, is not unsightly in appearance, is adapted for wide or narrow mouth bottles, fitted either with corks or with glass stoppers. The prices of the various sizes range from 1s. 6d. to 5s. per dozen.

The York Glass Company, Limited, is prepared, in view of the new poison regulations, to supply special series of bottles, distinctive in colour, shape and manufacture, suitable for storing and for dispensing poisonous medicines. The stoppered shop rounds are made of green and white glass, all fluted, with wide or narrow necks, and labelled in the usual way. The bottles in the dispensing series are varied and useful. For lotions and liniments, the ordinary fluted bottles, hexagons, and flats are made in two colours, green and amber-tinted, and bearing the legend, "Not to be taken." A special line is a wide-mouth, glass-stoppered, green fluted bottle for the poison cupboard, which is made in various sizes to hold ½, 1, 1½, and 2 ounces. There is no reason why this should not also prove a serviceable bottle for dispensing thick liquids of the nature of paints for different parts of the body, *e.g.*, glycerin of tannin and glycerin of belladonna.

Mr. William R. Warner, of the well-known Philadelphia firm of wholesale druggists, has recently contributed to the local press an account of his last year's trip to Europe, with a narrative of his fourth visit to Pompeii and a description of recent discoveries which have been made there.

Messrs. Major and Co., Ltd., of Hull, have submitted samples of their new disinfectant, Eucryl, in both fluid and powder form. It is a combination of carbolic and cresylic acids, with eucalyptus and pine products. Amongst the advantages claimed are that it is freely soluble in water, hot or cold, and when diluted down to a 6 per cent. solution can be conveniently and safely stored without those risks which have hitherto attended the storage of carbolic and cresylic acids. It has a pleasant odour and with water yields a clean milky solution which will not stain. Bath Eucryl is a special preparation which softens the water, and is antiseptic, emollient and pleasant to use. The manufacturers are offering chemists billheads and advertising matter with their names printed on, and undertake to help the sale by those firms who stock their goods.

Messrs. Francis Newbery & Sons, of King Edward St., E.C., are constantly introducing novelties in sundries and perfumes. Amongst those recently brought to our notice are new celluloid combs at 4s. 6d. per dozen, showing a pretty watered silk grain. Six of these are placed on cards of assorted colours, and in the same styles are 1s. rakes and dressing combs. A useful and saleable article is the 6d. breast exhauster, each packed separately in cardboard box and supplied at 3s. 9d. per dozen. Amongst the St. Paul's perfumes, white violets is growing in favour with the public, and promises to rival the Parma, Russian and Riviera violets in the same series. With these can be obtained handsome show cards tastefully lithographed in colours. Messrs. Newbery also show a new range of perfumes styled the C series at 9s. per dozen in stoppered bottles of various shapes.

Messrs. Burgoyne, Burbidges and Co., 16, Coleman Street, London, E.C., advise us that by arrangement with the Vasogenfabrik, Pearson and Co., Hamburg, they have transferred the agency for the Vasogen preparations to Mr. E. J. Reid, of 11, Dunedin House, Basinghall Street, E.C., as they find that some of the Vasogen compounds are likely to conflict with the interests of the preparations of one of their older Continental agencies.

The Sponge Trade.—There is abundant evidence to prove that the sponge fishing grounds of the Mediterranean are gradually being exhausted. The result is most serious to an important branch of trade in this country. On the one hand, the yield from the sponge beds is gradually lessening through over-fishing, while the prices obtained by the fishermen, though higher than formerly, often but barely cover their actual expenses, leaving little or no margin to reward them for their perilous and arduous work. On the other hand, the use of sponges has increased enormously, in proportion to the extension of civilisation and the knowledge of the laws of health. This has led to increased competition amongst the buyers at the sponge fisheries, and, a consequence, sponges that would have found their way to the London market this season have been sent to other parts of Europe, where higher prices rule. In order to cope with the difficulties arising from this situation and for the consideration of the best steps which can be taken to secure a sufficiency for the United Kingdom, the British Colonies, and those countries which draw their supplies largely from Great Britain—for London enjoys a preponderating share of the world's sponge trade—a Sponge Trade Association has been formed. The

firms representing the largest interests in the trade and the London agents of the local buyers in the islands which form the principal centres of the Mediterranean sponge-fishing industry have all joined the Association. Various arrangements necessary to the furtherance of co-operative efforts have been entered into, so that it is hoped that the desired end will be attained. The aims of the Association include the bringing about of the enactment of much-desired and very necessary regulations, whereby there may be close seasons for sponge fishing in various parts of the Mediterranean. Rumours that have been spread that a monopoly in some form is contemplated have not the slightest foundation. At all the meetings of the Association an important feature has been the unanimous deprecation of the slightest attempt at monopoly or any movement at all likely to prove injurious to individuals or the community at large.

When Our Representative called this week at Messrs. Maw, Son and Thompson's in Aldersgate Street, and asked to be shown anything new, the reply in most of the departments was, "Well, really, I think there is nothing you did not see when here a few weeks ago." Nevertheless, closer investigation proved the contrary. There was a novel English cut perfume bottle, with silver collar and spring lock, and a unique line of handsome Japanese metal puff-boxes, with curiously worked ornamentation—gold-coloured birds on silver background, and a compass let in at the top, with puffs, at 21s. 6d. per dozen; also a cheap line of *papier-maché* boxes (assorted colours), with puffs, at 4s. 6d. per dozen. There was a variety of celluloid boxes, and amongst these an oval box (various colours) for carrying a sponge when travelling. Another new 6d. toilet article is "Pumisette" for the hands and nails; it has a pumice base, with plaster of Paris top. The Aymard patent milk sterilisers and "The Dawn" night-light food warmer, which heats the milk without causing a scum to form, although not new, have had their sale greatly stimulated by the recent crusade against tubercolosis, and as they bear protected prices, are worth stocking. The glass department is busy getting out bottles to conform to the new poison regulations. Although nothing particularly new was to be seen in the sponge department, it may be mentioned that the firm claims to hold a larger stock, especially of the finer grades, than any other sundries house, and in the showroom is exhibited what is regarded by the authorities at South Kensington and the British Museum as one of the largest and most perfect sponges ever brought to England. The original cases of Turkey honeycombs are sorted and made up in cases containing from fifty to 150 pieces, in sizes suited for chemists' trade, to retail from 1s. to 10s. There is also a fine assortment of Turkey cups. The surgical instrument department would require a lengthy article to describe recent improvements. The latest is Maw's Aseptic Vaccination Case (price, complete, 24s.), specially constructed to fulfil the regulations of the Local Government Board. It is of a size convenient for the coat pocket, and contains all necessary appliances for the public vaccinator. This case was exhibited at a recent meeting of the Association of Public Vaccinators, and special attention was drawn to it by the Secretary in a circular. Maw's registered "Vacci-net" Dressing, an aseptic pad for use after vaccination, complete with tapes, in metal box containing two dozen, at 2s. 9d. per box, is a good selling article, also Maw's Aseptic Vaccination Wafers at 8d. per gross. There is a new dressing cabinet for bandages, lint, wool, etc., and metal cabinets for instruments at prices from three guineas. A recent introduction is an electrical apparatus for applying pure ozonised hot air in cases of neuralgia, etc. Steel instruments are all solid forged, with fluted handles, instead of the old chequered style, so that they clean more easily. Syringes are sent out in metal cases, to enable the whole to be sterilised. Tongue depressors for fever and diphtheria are made of solid rolled aluminium or glass; rubber catheters have solid ends, so that they may be kept cleaner, and more easily introduced; while instrument cases are lined with washable glazed leather. Chemists who do a veterinary business are specially catered for; there are inseminators for cattle, "rinderpest" syringes in metal cases, clinical thermometers, veterinary operating tables, a simple contrivance made of chain for crib-biting horses, which does not interfere with the breathing or injure in any way. A special line for chemist opticians is a pearl opera-glass at 12s. each. The following items taken from he firm's stock sheets will probably give a slight idea of their enormous home trade. They show that last year the sales of clinical thermometers amounted to 30,000, enemas, 70,000, and cathethers, 60,000. Such facts speak volumes.

ENGLISH NEWS.

As an Epigrammatic Statement of the situation in regard to the so-called "widow's clause," a respected correspondent—who is disposed to sympathise with the exempting provision, but recognises its incompatibility with the claim that none but legally qualified persons should keep open shop as a chemist and druggist—writes to say that "If the Pharmacy Act has had its eyes scratched out by the widow's claws, it is certainly time she had her nails cut."

Chemists Who Handle Optical Goods are reminded that the last of the Modified examinations of the Worshipful Company of Spectacle Makers will take place early next July, and those who intend to enter for it are strongly advised to commence preparation at once. In connection with this subject Mr. Lionel Laurance announces that he has arranged to commence a class in Manchester about the latter part of March, for the special benefit of chemists and others living in the north who may desire to obtain the needful knowledge in visual optics for the above-mentioned examinations.

Leeds College of Pharmacy.—On Saturday, February 11, the first smoker was held in connection with this College. The large lecture room was suitably decorated, whilst the dispensary of the College was temporarily transferred into a *café chantant*. The evening's entertainment was commenced at 7 p m. by C. A. Critchley, Ph.C., taking the chair. Mr. Critchley was supported by the Principal of the College, and also Messrs. Shaw, Garland, Smith, and Crawford. The programme was long and varied, including songs, recitations, and various instrumental solos, the piano being ably presided over by Mr. H. West. During the evening the usual toasts were given, several with musical honours, a most enjoyable evening being terminated by the singing of the National Anthem just before midnight.

Football.—The following Association teams played their second return match at Wormholt Farm, Shepherd's Bush, on Saturday last: Metropolitan College of Pharmacy and Westminster College of Pharmacy. At the interval the scores were even, 1—1; on crossing over the "Metros." added 5 more to their number, thus winning by 6 goals to 1. The following scored for the "Metros.": Negus 2, Lucas, Johnson, Bryan, and Marshall, and for Westminster, Futty.

Mr. J. H. Hill, Chemist and Druggist, 42, High Street, Oxford, has disposed of his business, owing to ill-health, to Mr. Herbert C. Gunstone, Chemist and Druggist, for some years with Messrs. Savory and Moore, New Bond Street, London.

Storage of Petroleum.—George H. Chambers, oilman, of Stamford Hill, was summoned for storing a quantity of petroleum (benzoline) contrary to the provisions of the Explosives Act.—The London County Council, represented by Mr. Godfrey, prosecuted. —Inspector Nunan said he found half a gallon of petroleum on the defendant's premises. There was no licence in force, though the defendant had applied for one.—The defendant said he was not aware that a licence was needed for so small a quantity of petroleum. As a fact, he did not store it. He got it from his brother to serve two customers. It was important that petroleum should be properly stored.—The defendant was fined £5.

The Scarborough Chemists' Association held a meeting in the Albemarle Hotel on Thursday, the 16th inst. Mr. H. Chapman, Vice-President of the Association, occupied the chair. Resolutions were unanimously carried expressing approval of the Poison Regulations, and that all registered chemists should become Members of the Pharmaceutical Society. A long discussion took place on the suggestions for a draft Pharmacy Bill. The first Clause was unanimously agreed to, no discussion taking place. Clause 2 was considered to demand too much. The meaning of the word "medicines" was held to be too indefinite. It was finally agreed to support the following resolution, proposed by Mr. R. Gilchrist, seconded by Mr. George Whitfield:—"That

Clause 2 be sub-divided to read (*a*) A third part shall be added to the Poison Schedule of 1898 which shall include such medicines or chemicals not necessarily poisonous, but sufficiently strong or dangerous to demand special knowledge and care in their handling and sale (*e.g.*, antipyrine, colocynth, amyl nitrite, trinitrine, paraldehyde, creosote, iodoform, sodium, phosphorus, etc.); and (*b*) That the selling, dispensing, and compounding of all substances or preparations specified in parts 1, 2, and 3 of the Poisons Schedule, and the dispensing or compounding of all prescriptions written by medical or veterinary practitioners be restricted to pharmaceutical chemists and chemists and druggists." In regard to Clause 5, Mr. R. M. Hill moved and Mr. T. W. Longdin seconded that the Association considers that no sufficient reasons exist for departing from the Act of 1868." The meeting was also of opinion that all medical men dispensing their own medicines should employ a properly qualified dispenser.

Football.—Owens College Pharmaceuticals *versus* Clayton's Northern College of Pharmacy, played on the ground of the latter on February 16. The first half of the game was fairly evenly contested, each team scoring 2 goals. Owens exhibited fine form in the second half, and completely outplayed their opponents, the final of a pleasant game being Owens, 9 goals; Clayton's, 3. Teams—Owens: Drummond, goal; Woolley, Oldfield, backs; Moon, Carter, Walmsley, half-backs; Patchett, Barber, Ryder (captain), Duckworth, Kerfoot, forwards. Clayton's: Milestone, goal; Billington, McIntyre, backs; Hyde, Quarmby, Scott, half backs; McAlister, Crook, Hadfield, Worthington, Phillips, forwards.

Hypophosphites and the B.P. Permanganate Test.—Messrs. Typke and King ask us to insert the following:—"Having received several complaints to the effect that our sodium hypophosphite does not stand the B.P. permanganate test, we carefully examined one parcel which was returned to us and, greatly to our surprise, found that such was really the case, the filtrate having an intense coloration. A sample of *pure* sodium hypophosphite was therefore prepared by recrystallisation from alcohol, and the crystals, which were obtained in the form of long glassy needles, submitted, after complete drying, to the same test, but with no better result. On recalculating the proportions given for the test, viz., 1·15 Gms. pot. permanganate for ·5 Gm. sodium hypophosphite, it was found that this quantity of permanganate is largely in excess of the weight required to oxidise the sodium hypophosphite. 1 mol. sodium hypophosphite (=88) requires 2 atoms of oxygen (=32) for complete oxidation. $KMnO_4$ (=158) can part with $2\frac{1}{2}$ atoms oxygen (=40). Then

Sodium Hypoph. Oxygen.

88 : ·5 :: 32 : x = ·1818 Oxygen.

Oxygen Pot. Permang.

40 : ·1818 :: 158 : x = ·72 Pot. Permang.

The correct proportions are therefore:— ·50 Gms. sodium hypophosphite, ·72 Gms. potassium permanganate, and the filtrate from this, treated with one drop permanganate solution, acquires a good lasting pink coloration, proving the oxidation to be complete. The proportions given for testing the calcium hypophosphite, viz, ·25 Gms. calcium hypophosphite, ·60 Gms. potassium permanganate are also incorrect, and should be:—·25 Gms. calcium hypophosphite, ·37 Gms. potassium permanganate."

Poison Regulations, 1899.—Messrs. Herbert Jenkins and F. Horace Johnson write as follows:—"When the above became operative, we observed that in the middle class and especially poorer class districts, it would be impossible for a chemist (except at great loss to himself) to change his customers' cheap bottles for costly poison bottles. We have brought out a device (for which the Patent Office has granted provisional protection) which claims amongst other things to allow chemists to conform with the new regulations at a very small expense. Particulars will be ready for a later issue of your valuable Journal."

Photographing Lightning.—Mr. F. H. Glew, chemist, explained to the Royal Photographic Society on Tuesday that a discharge of lightning is, perhaps, the simplest illustration that can be given of the dissemination of those long electric waves which Hertz showed could be caught, reflected and refracted by a suitable receiver, just as waves of light or waves of sound can be. The use of these Hertzian waves for the purpose of signalling is usually spoken of as "wireless telegraphy," and in this sense the invention of Mr. Glew may be described as the utilisation of wireless telegraphy for the purpose of photography. Without going too far into the theory of the Hertzian waves one may compare the method in which they can be transmitted and received to an experiment which is sometimes made with two tuning forks. If two tuning forks of exactly the same pitch are placed near one another, and the first is set into vibration the second will presently begin to vibrate responsively. In the same way one can construct an electric circuit which will respond to the vibrations emanating from a Hertzian centre of disturbance. By the use of what is called a coherer, one can contrive that the current set up in this "syntonised" circuit shall give evidence of its existence by (say) ringing a bell; and it is in this way, roughly speaking, that wireless telegraphy operates. Now, as already has been said, a discharge of lightning is a centre of disturbance; and at the same time that the ordinary observer sees the flash, the circuit foels it and rings its electric bell accordingly. A thunderstorm can be felt by a Hertzian wave "receiver" long before it has come upon the horizon of the human observer. But the "receiver" circuit can do other things besides ring electric bells. It can move the revolving shutter of a photographic lens; and the first part of Mr. Glew's invention consists in having constructed a shutter which will move with sufficient rapidity—that is to say, which is of sufficiently small inertia to move within the one-seventieth part of a second after the impulse has been applied to it. In this way a lightning flash can be made to photograph itself, for a flash does not consist of one spark, but of several down the same path. By another ingenious device, which is not necessary to describe, Mr. Glew ascertained the compound nature of lightning flashes, and also the period of duration of each spark. In a lightning flash lasting one-nineteenth of a second, he discovered three component sparks. The first of these sparks, being in the nature of a Hertzian discharge, opened the shutter by "wireless telegraphy," and the shutter, moving in the one-seventeenth part of a second, was therefore well in time for the second spark, because more than one-seventieth part of a second elapses between the beginning of the first spark and the appearance of the second. Thus the first spark put the shutter in motion for the second; and this method of wireless telegraphy, in Mr. Glew's words, as reported in the *Daily Graphic*, is an example of setting a spark to catch a spark.

The Homocea Committee of Investigation has issued a report in which many very serious allegations are made. The company, it would seem, was from the beginning hampered by want of working capital, and, in point of fact, the £20,000 which, according to the prospectus, was to be reserved for this purpose was not. The accountant's report in the prospectus among other things stated: "The whole net profits for 1896 are greater than for 1895." The committee now find that instead of there being a net profit, there was a loss of over £11,000 in 1895. It will be interesting to shareholders to hear what explanation can be given of this serious allegation. Reference is made to the disputes which have been going on between the board and the managing director; but whether there is a new board elected or not, we trust that, in the interests of shareholders, the lavish and wasteful expenditure on advertising will not be continued.

Inland Revenue Case.—At the Mansion House Police Court on February 20, James John Bissett Hay, trading as the International Drug Company, Queen Victoria Street, was summoned for having, on November 7, 1898, sold a bottle of medicament known as Dr. Bond's Pink Mixture without the paper, wrapper, or covering provided by the Inland Revenue to denote that stamp duty had been paid.—The defendant pleaded guilty.—Mr. Hawkins, who appeared for the prosecution, said the defendant had traded as Sydney and Co., Elm Place, Fulham. On November 7 a bottle of mixture was bought from him through the post by an officer of Inland Revenue owing to certain information having reached the authorities. The bottle was unstamped.—Mr. Barrett, on behalf of the defendant, said he did an extensive business, and the bottle in question was inadvertently sent out unstamped.—Alderman Truscott imposed a fine of £5, with 4 guineas costs.

A Surgical, Medical, and Hygienic Exhibition has been fixed to take place from May 23 to 26 at the Queen's Hall, Langham Place, W. The object of this exhibition is to show the

progress made in all branches of medical science as far as new instruments, drugs, and kindred preparations are made. Mr. Henry Blau, 29, New Bridge Street, London, E.C., is the Hon. Secretary.

Carbolic Acid Again.—An inquest was held on February 21 at Barnsley, touching the death of Arabella Stringer, aged 22 years, daughter of Geo. Stringer, of Pogmoor, who died from the effects of poisoning on Sunday morning last. The mother of deceased stated that the girl had been healthy and cheerful until she met with an accident by falling out of the bedroom window about eleven weeks ago, when she sprained her ankle. Dr. Rowley attended her, and she appeared to recover from the accident, though she had been very low-spirited since then, refusing to go out, and some days she appeared to be miserable, and scarcely spoke to anybody. Deceased had said she thought people would be talking about her. Witness had kept watch over her, as she was afraid she might do herself some harm, but she never threatened to take her life. Just about Saturday midnight deceased went into the yard, and after a few minutes witness called out to her, and she replied "All right." Deceased did not come, and witness called again, when deceased met her in the yard, and said, "Oh, mother, I have taken some stuff." Witness asked "What sort?" and hurried her into the house. She gave her milk and coffee, and saw that she was suffering a great deal. Deceased's brother found the bottle, produced, which was labelled "Carbolic acid (poison)." The bottle was 6 oz. size, and nearly one-half of the quantity had evidently been taken. She sent for Dr. Rowley. They gave her coffee and milk, but she knocked it out of her hand, saying it was burning. She soon became unconscious, and died about an hour later. Witness explained that the deceased returned from Silkstone on Wednesday last after a visit, and went out again on Thursday, and she thought deceased must have got the poison then. Witness was not aware that the girl had any poison in the house. She had no other trouble, and had no sweetheart. Deceased had been subject to fainting fits before the accident, and was in the act of cleaning the window when she fell.—Dr. O. F. Rowley stated that he was called to the deceased, whom he found insensible, and in a state of collapse. He administered emetics, but without effect. He noticed the effects of the acid on the skin, lips, and mouth. The girl had seemed to be depressed, but he did not consider there had been any neglect by the parents. One-third of the carbolic acid would have proved fatal. He believed the fall would cause a severe shock to her mind.—The jury returned a verdict of "Committed suicide whilst of unsound mind."

Banknotes and History.—How many people, the *Daily News* wonders, have ever examined a bank-note carefully enough to learn the history it teaches? The Governor of the Bank of England, in his speech to the Italian Chamber of Commerce, remarked that "Italy was the first instructor of Europe in banking." The fact is brought home to us every day of our lives not only in "Lombard" Street, but also in "£ s. d.," which originally stood, of course, for *Libri, solidi*, and *denarii*. What, however, is probably not so well known is the curious piece of Italian that lingers on the face of every banknote. It escaped the notice even of the compiler of McCulloch's 'Dictionary,' who professes to give an accurate description of the lettering of a banknote, and makes the signature run: "For the Govr. and Compy." But it is not Compy, it is Compa.—an abbreviation for the Italian *compagnia*.

Schoolboy's Strange Death.—At the Battersea Coroner's Court on February 21, Mr. W. Schroder, the deputh coroner, held an inquiry upon the body of William James Scott, aged 7 years, son of a cabdriver, residing at 36, Shirley Grove, Battersea, who died after a brief illness on Wednesday last.—It appeared from the evidence that the deceased came home on Monday evening and complained of being sick. Hs soon afterwards had a fit and was very sick. A doctor was called in and he prescribed, but as the medicine did not appear to soothe the child, the mother gave it some chlorodyne. The deceased died suddenly on Wednesday morning.—The deputy-coroner was surprised at the mother giving the child chlorodyne after the doctor's medicine. One drug on the top of the other might have been serious.—Dr. E. J. Penny, who had made a post-mortem examination, said there were no marks of violence on the body. The brain was abnormally heavy, being nearly double the ordinary weight, and congested. Death was due to heart failure, induced by the vomiting, which was set up by cerebral congestion. It was very injudicious to have given the deceased chlorodyne.—The jury returned a verdict in accordance with the medical evidence.

Cambridge Pharmaceutical Association.—In connection with this Association a conversazione and dance took place at the Assembly Rooms, St. Andrew's Street, last week. A capital programme of music was carried out in the earlier part of the evening, and an exhibition of botanical specimens and of the Röntgen rays also contributed to the entertainment of the company. Mr. W. H. Hayles kindly demonstrated the use of the rays. The music was provided by the Misses Field, S. A. Johnson, Lilian Beale, Gresty, Legerton, and Messrs. E. A. Shrubbs, E. H. Church, H. E. Phillips, A. Scales, Harry Spencer, S. C. Coulson, and J. Wiles. Dancing commenced at 11 o'clock and was continued for some hours. Messrs. B. S. Campkin (hon. sec.) and O. F. Pink were responsible for the tasteful decoration of the Rooms.

Dentists Cast in Damages.—At Blackpool County Court, on Wednesday, Miss Annie Aspden obtained £30 damages against Macdonald (Limited), teeth manufacturers, for wrongly drawing teeth. She instructed their assistant to draw three teeth, and on recovering from gas she found he had extracted ten, eight of which were perfectly sound. The defence was that she placed herself in his hands to be dealt with at his discretion. Judge Coventry remarked that it was a grievous wrong.

The Vaccination Fight.—The *Daily News* reports that at Wellingborough Board of Guardians, on Wednesday, a letter to the Clerk was read from Messrs. Sharpe, Parker, Pritchards, and Barrum, New Court, Carey St., London, solicitors to the Local Government Board calling attention to the failure of the Guardians of the Wellingborough Union to appoint a vaccination officer for the Higham Ferrers District, and informing them that unless the necessary steps were taken at the next (Wednesday's) meeting, an application would be made for a mandamus without further delay or notice. The Local Government Board desired that the Guardians would inform their solicitors of the action taken by them at their meeting, in pursuance of this letter, without delay. The letter was received with absolute silence. A motion was made that the Guardians advertise for a vaccination officer. The Clerk, in reply to various members, said that he could only read the order of the Local Government Board to the effect that the officer, when appointed, would be able to institute prosecutions without the consent of the Guardians. Mr. Abbott, referring to the resolution of the Guardians to refuse to appoint an officer unless they had control of his actions, moved that the Board adhere to the resolution on the books. The amendment was ultimately carried by twenty-three votes to seventeen. All the lady Guardians voted for the amendment, and the clergymen, with one exception, against. Four members did not vote. At Northampton precisely the same condition of things prevails, the Guardians having refused to appoint a vaccination officer for the Bugbrook District. But no action whatever has been taken by the Local Government Board, who have not yet replied to the resolution, passed two months ago, declining to fill the vacancy unless the Guardians have full power over the officer.

School of Pharmacy Dinner.—The annual dinner of the Pharmaceutical Society's School was held on Wednesday, February 22, at the Holborn Restaurant, and proved a great success. The Caledonian Room was chosen for the gathering, and tables laid for about a hundred guests. The chair was taken about half-past seven by the Dean of the School, Professor J. Norman Collie, F.R.S., Ph.D., F.I.C., who was supported by Mr. Walter Hills, (President of the Pharmaceutical Society), Mr. C. B. Allen (Member of Council), Professor John Attfield, F.R.S., Mr. Charles Umney, Mr. G. B. Francis, Dr. B. H. Paul, Mr. William Warren, and many other prominent figures in pharmacy Mr. Michael Carteighe, Mr. Richard Berridge and Professor Green, F.R.S., were unable to be present, owing to serious indisposition. The central spur table was presided over by Professor Greenish, F.I.C., around whom were grouped, among others, Messrs. J. S. Ward, John Humphrey, Edmund White, B.Sc., J. O. Braithwaite, F. W. Short, B.Sc., E. H. Farr, E. N. Butt, J. W. Bowen, W. Arkinstall, F. Bascombe, W. Lloyd Williams, Peter MacEwan, F. Ransom, and A. E. Tanner.

The remaining spur tables were in charge of Dr. Lapworth, Mr. Upsher Smith, and Messrs. Dyas and Gray. The toast of "The Queen" having been duly honoured, Mr. C. B. Allen rose to propose the toast, "School of Pharmacy." In a neat speech he referred to the fatherly interest which the Pharmaceutical Society, as represented by the Members of the Council, took in the School. There was seldom a meeting of the School Committee at which the question was not asked, "Are the students behaving themselves and manifesting interest in their work?" He was glad to say that during the fourteen years or so that he had had had the honour of being so intimately connected with the School, there had never been a case of misbehaviour among the students. Mr. Allen concluded by referring to the Football Club and its value from a physical point of view. Professor Collie then asked Dr. Paul to respond, he being the oldest student present, having been a prizeman in 1845. Dr. Paul expressed his deep sense of gratitude to the Society for the thoroughly good education which had stood him in good stead for so many years; he considered that students should recognise their obligations to the Society, by becoming members and taking an interest in the welfare of pharmacy. Professor Collie, as Dean of the School, expressed the pleasure he felt in being present to respond to the toast. His remarks showed how much the work and life of the School lay near his heart, and drew forth applause from the students, which gave unmistakable evidence of his popularity. The subject of examinations, said he, was always looming in the distance, and constantly engaging the attention of a professor as to the best way in which his pupils might be prepared for the ordeal. He deprecated the practice of guessing at answers in the examination room. The toast of "The Pharmaceutical Society" was then proposed by Mr. Horace Finnemore, Senior Bell Scholar, and replied to by Mr. Walter Hills, the President, who expressed much pleasure at the present opportunity of meeting so many past and present Square men. He would like to know how matters had really gone in the football field this year. Speaking of the Society, the President pointed out how necessary it was for all qualified pharmacists to avail themselves of the privileges of membership, not merely for the sake of helping the Society financially, but by giving it their interest and personal help. There were in the room, he considered, students who would one day hold important positions in the Society, as Examiners, Members of Council, or possibly they might occupy the Presidential chair. The last toast, "The Old Boys," coupled with the name of Mr. Charles Umney, was very ably proposed by Mr. Cyril Battle, in a speech that was brimful of interest, accurate in detail, quite to the point, and delivered in a manner that marked him as possessed of oratorical powers of no mean order. He referred to the distinguished part which former students of the School have taken in the pharmaceutical and scientific worlds, giving instances of men who had become doctors, scientists, Fellows of the Royal Society, and who have taken a leading part in the management of the Pharmaceutical Society as Members of Council, Auditors, and Examiners. Old Square men, he said, had always been loyal to the Society, and during the past ten or twelve years quite 50 per cent. of the Members of the Council have been old students of the School. Two other toasts were proposed during the evening, that of the Chairman, by Professor Attfield, and that of the Dinner Committee, by Mr. Upsher Smith. Professor Collie thanked those present for their kind expressions, and said that such gatherings always gave him the greatest pleasure. Mr. Smith, replying on behalf of Messrs. Dyas and Gray and other members of the Committee, also expressed his thanks for the honour done to the Committee. The task of getting up this dinner was not an arduous one; the onus had fallen chiefly on Mr. Dyas, who, at the last, had experienced considerable difficulty in replacing the pianist who had promised to come. However, a friend of Mr. Dyas, Mr. Neville Flux, very kindly stepped into the breach. The musical programme was excellent and much appreciated by the guests. It included songs by Messrs. C. Morley, C. H. Baker, Aubrey Prust and S. R. Dyas, a humorous recitation by Mr. T. Morley Taylor, and a pianoforte solo by Mr. Neville Flux.

Receiving Order in Bankruptcy.

(From the London Gazette.)

Schofield and Griffin, Druggists, 16, Heyworth Street and 110, Mill Street, Liverpool, 63, Rice Lane, Walton, and 46, Linacre Road, Seaforth.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

Arrangements Have been Made for a photograph of the professors, demonstrators, and students of the School of Pharmacy to be taken shortly. It is a matter for regret that it should have been postponed till so late, as owing, no doubt, to the proximity of the Major examination, the aspirants for this highest qualification in pharmacy have faces "o'ershadowed with the pale cast of thought," and consequently the photograph may be expected to show too abundant evidence of the seriousness of life at the "Square."

In View of the Fact that Professor Collie gave the lecture on "An Exploration in the Rockies," which he had previously promised for a social meeting of the Students' Association, at the last Evening Meeting of the Pharmaceutical Society, he has kindly promised to give in its place an account of his experiences of mountaineering on Mont Blanc, which he will illustrate by lantern slides. Members and old "Square men" are reminded that the lecture will be delivered during March, and that the time will be later in the evening than the usual meetings, so as to suit the convenience of members engaged in business. This social evening will be well attended, and members are reminded that their friends —ladies, as well as gentlemen—are cordially invited to attend. Tickets of admission will be forwarded on application to the Honorary Secretaries of the Association, Messrs. H. Finnemore and P. B. Gray.

The Annual Dinner, held on Wednesday last, was a record one, both in point of numbers and as regards the enjoyment of those who were present. The Chairman filled his position with conspicuous ability, all the speakers were in good form, and none of the speeches were too long or tiresome. The speech of the evening was undoubtedly that by a student—Mr. Cyril Battle, and much will be expected of him in that line in years to come. The musical programme was also excellent, and Mr. Morley Taylor's sketches of popular actors were entertaining in the extreme.

Football.—The return match with Ealing "B" team was played on Saturday, February 18, at Ealing. It will be remembered by those who read the account of the first match at the beginning of the term, that the "Square" team suffered a serious defeat by five goals to *nil*. It was evident, however, from the form displayed on Saturday, that the team had greatly improved, perhaps owing to the rest given to their labours the week before, or that they wished to improve on the reputation they left behind on the last visit to that suburb. The team had not altered much since the last match. Durbin was still absent, owing to a weak leg, and Warren was once more seen in his usual form in the front rank. The ball was started about 3.15 p.m., a slight fog enveloping the field, and with a rush was carried straight to the enemy's goal, chiefly by the tricky passing of our forwards, and within the first ten minutes a goal was shot by Owen from a pass by Wild. This seemed to surprise Ealing, who put, on their mettle, soon equalised matters by a very clean shot, and by half-time were two goals ahead, perhaps owing to the fact that the "Square" were playing one man short. On changing over, Owen's brother offered his services as substitute, and the "Square" had their full complement once more; the game was very even during the second half, and some good work was done by the Pharmaceutical forwards, but somehow they seemed to lack the necessary accuracy, and though several times in front of the goal, failed to score. Ealing added one more point to theirs from a well-placed corner kick, the match thus ending in a well-earned victory for Ealing by four goals to one. Although that may seem rather a broad margin, yet it was considered by those contesting that it was perhaps the hardest fought match of the season. The fog seemed to increase towards night, and it is rumoured that several members of the team missed their way and arrived at their destination rather late. For the edification of other students it may be worth mentioning that those who did journey to Ealing had a very enjoyable time. The team was as follows: goal, Padwick; backs, Stokoe and Gray; half-backs, Collinette, Evans, Garsed; forwards, Warren, Lloyd, Owen, Wild (captain), Wilkinson.

FRENCH NEWS.

Echoes from the Latin Quarter.—The vacancy caused by the untimely and unexpected death of Monsieur Félix Faure has been filled by Monsieur Loubet, whose election to the Presidential office has certainly not proved agreeable to the public palate, judging by the numerous and varied demonstrations manifested in the gay capital. By no means the last on the scene in anything where rowdyism is a potent factor are the students of the Latin Quarter, and a lively time on the left bank of the Seine was evidently anticipated by the authorities on Monday morning, inasmuch as the police of the 13th arrondissement were told off to strengthen those of the 5th arrondissement, stations of the Panthéon and the Rue Saint Séverin being brought up to their usual strength. Fortunately it was so, too, for towards ten o'clock in the morning the students of the School of Physics and Chemistry descended the Rue Soufflot *en masse*, shouting "*Panama! à bas Loubet! Démission!*" The police had their hands full, it is certain, but by keeping the malcontents circulating they prevented any damage being done, the affair passing off fairly decently, considering their usual antics when their ire is roused.

Rugby Football.—Numerous international reunions have been held this season. After the Parkhouse and the London-Irish teams a match was played with the London team—all three representatives of the best London players. In each encounter the Racing Club de France—the *doyen* of athletic clubs in France—has suffered defeat. On the 5th inst., however, they had their revenge, beating the Court Hill Club of London by 6 points to *nil*. The Racing Club de France is composed largely of the members of the Association Amicale des Etudiants en Pharmacie. This victory is a good augur for the wielders of the pestle.

Illegal Exercise of Pharmacy.—Monsieur Blanc, Commissaire of Police at Argenteuil, has had the good fortune to put his hands on one Louis Bourgoin, a man of 38 years of age, practising illegally pharmacy and medicine at Argenteuil. But for a misdemeanour this fact might have passed, as hitherto, unnoticed. From the evidence brought against this miserable charlatan, it transpires that upon many occasions he had decoyed young girls into his pharmacy under the pretence of tendering them some minor medical aid, and there outraged them. There are now some charges of abortion also brought against him. All went well until he was denounced by Mademoiselle Alice Ratier, a pretty little dressmaker of 22 summers, to whom he had evidently failed to render aid. He was subsequently arrested and charged with the offences, but repudiated all the evidence brought against him. A search in his shop, however, revealed a number of instruments and drugs of doubtful use concealed in the conventional "jars." He has been despatched to Versailles to be dealt with in due course.

Typhoid Fever.—A fresh outbreak of typhoid fever has occurred at Angoulême amongst the soldiers of the 34th Regiment of Artillery. Already six deaths have taken place, and the disease is spreading with alarming rapidity. The cause of these periodical outbreaks, not yet being traced, has given rise to much uneasiness and fear for the health of the civil population.

Alcohol in a Solid Form.—Under the name of "Fester Spiritus," Monsieur L. Berngau has made known at the last reunion of the Deutsche Pharmaceutische Gesellschaft a means of employing alcohol as a combustible in the form of bricks. The alcohol is absorbed by a silicious earth such as kieselguhr, and massed with a solution of resin. A brick weighing 50 grammes (about $1\frac{3}{4}$ oz.) suffices to bring to boiling point in ten minutes one litre of water. Such a convenient and portable commodity would be of inestimable value in excursions, hunting, manœuvres and a variety of ways. Under the above name, Julien Norden and Cie., manufacturers of chemical products at Berlin, have already put on the market similar "bricks" for heating purposes. The manufacture of these is based, liked that of Steer's opodeldoc, upon the properties which animal soap possesses of absorbing large quantities of alcohol, and yielding af airly solid mass. Their composition, according to analyses made, is approximately as follows, 62 5 per cent. alcohol, 20 per cent. residue formed almost exclusively of soap, and 18 per cent. water. A product almost exactly like "Fester Spiritus" is obtained by dissolving "savon amygdalin" in warm alcohol and allowing to solidify. "Fester Spiritus" means solid alcohol.

Calendar for the Week.

Sunday, Feb. 26. 2nd in Lent. Sun rises 6.55; sets 5.33.

Monday, February 27. Sun rises 6.52; sets 5.34.
Royal Institute of Public Health, 20, Hanover Square, W.—"Tuberculosis in Cattle," by Professor J. McFadyean, at 8.30 p.m.

Tuesday, February 28. Sun rises 6.50; sets 5.36.
Royal Photographic Society.—"Apparatus for Animated Photography," by Mr. Birt Acres, at 8 p.m.
Royal Institution.—"The Morphology of the Mollusca," by Prof. E. Ray Lankester, at 3 p.m.

Wednesday, March 1. Sun rises 6.48; sets 5.38.
Pharmaceutical Society.—Meeting of the Council at 11 a.m.
Pharmacy Club.—Meeting at 6.45 p.m.
Aberdeen Pharmaceutical Association.—Annual Meeting at 11 a.m.

Thursday, March 2. Sun rises 6.46; sets 5.40.
Royal Institution.—"Toxins and Antitoxins," by Dr. Allen Macfadyean, at 3 p.m.
Chemical Society.—Several papers will be communicated.
Chemists' Assistants' Association.—Annual Dinner at the Holborn Restaurant, at 8 p.m.
Dewsbury and District Chemists' Association.—Annual Dinner, postponed from February 21.

Friday, March 3. Sun rises 6.44; sets 5.41.
Royal Institution.—"Coherers," by Prof. Oliver Lodge, at 9 p.m.
Edinburgh Chemists' Association.—Annual Supper.

Saturday, March 4. ☾ 4 7 m. Sun rises 6.42; sets 5 43.
Royal Institution.—"The Mechanical Properties of Bodies," by Lord Rayleigh, at 3 p.m.

SCOTTISH NEWS.

Glasgow School of Pharmacy.—On Saturday last the students of the above school, accompanied by the principal, J. Lothian, paid a visit to the Carron Iron Works, near Falkirk. These works give employment to nearly 3000 people. The blast-furnaces, brickworks, foundries, galvanising engineeering shops, and electroplating department were all inspected. The latter was specially interesting and each student had some article electroplated as a momento of the visit. An excellent tea, dispensed by the lady students, terminated a most enjoyable and instructive visit.

Aberdeen Pharmaceutical Association.—The sixty-fourth annual meeting of this Association will be held in Robert Gordon's College on Wednesday, March 1, at 11 o'clock forenoon, when the balance-sheet and reports for the year will be submitted.

The Glasgow Association and the Council Election.—At the conclusion of the meeting of the Glasgow Pharmaceutical Association on Thursday of last week, Mr. W. L. Currie, the President, drew attention to the coming Council election, and said that, along with others, he was taking steps to secure as candidates gentlemen who had given attention to the various matters at present under consideration by pharmacists. They hoped to secure a greater interest being taken in the matter than hitherto, and he failed to see any reason why candidates should not state publicly their intentions regarding these matters, and hoped they would be asked to do so. The opinion was endorsed by the meeting.

Marriages.

Barron-Shaw.—February 14, at Fortwilliam Presbyterian Church, Belfast, by the Rev. James Maconaghie, Robert Barron, Chemist, Antrim Road, to Martha Johnston, youngest daughter of Captain Shaw, Hopefield Avenue.

Divers—Labry.—A wedding has just taken place between Miss Edith Divers, daughter of Professor Divers, F.R.S., of the Royal University, Tokio, Japan, and Viscount Labry, captain of the 11th Dragoons of the French Army, and military attaché to the French Legation at the Japanese Court.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

February 23.

Business has been somewhat quiet during the past week. A firm tone, however, prevails on the whole. Quinine is firmer, in view of the fact that the German makers are no longer free sellers at the price to which they had lately advanced their price, while everything would appear to point to the possibility of even higher prices ruling for this article in the not too remote future; demand continues good, although speculation has practically ceased for the moment. Everything now apparently depends upon the course of Bark. Opium is firmer. Quicksilver and Mercurials, Iodine and Iodides, Bromine and Bromides steady at unchanged prices. Sulphate of Ammonia, after being weak, has again hardened. Cocaine is firm. Acid Carbolic steady. Camphor firm. Cascara Sagrada is also very firm. Borax and Acid Boracic quiet. Acid Citric rather weaker. Acid Tartaric steady, while Cream of Tartar is again rather dearer. Glycerin and Cod-Liver Oil steady. Morphia quiet. Codeia firm. Sulphonal, Phenacetin, and Acetanilide unchanged. The following are the prices ruling for some articles of chief interest :—

Acetanilide.—The combined makers still quote 11d. per lb. for large quantities, up to 1s. 1d. per lb. for smaller quantity.

Acid Acetic.—A fair business has been doing both for home and export, and quotations are firm at 14s. 3d. cwt. for 30 per cent. (or 1-7), 15s. 6d. cwt. for 33 per cent. (or B.P.), 18s. cwt. for 40 per cent., 21s. 6d. cwt. for 50 per cent., 25s. cwt. for 60 per cent., 28s. 9d. cwt. for 70 per cent., 30s. cwt. for 74 per cent., 32s. 3d. cwt. for 80 per cent., 34s. cwt. for 85 per cent., 35s. 9d. cwt. for 90 per cent., 37s. 6d. cwt. for 95 per cent., and 39s. 6d. cwt. for 98 to 100 per cent. glacial,

Acid Boracic.—*Crystals*, 26s.; *powder*, 28s. per cwt.

Acid Carbolic—Quiet, but steady at 6½d. to 6¾d. per lb. for 35-36° *ice crystal* in 2½ cwt. drums and overcasks; 39-40° *ice crystal*, 7d. to 7¼d. per lb.; and 39-40°, *detached crystals*, 8d. to 8½d. per lb., according to quantity and packing. *Crude*, 60 °F., 2s. per gallon; 75° F., 2s. 5d. per gallon. *Liquid*: 95 98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, according to quantity, in 40-gallon casks.

Acid Citric—Is not quite so firm at nominally 1s. 4d. per lb. on the spot.

Acid Tartaric—Steady at 1s. 1d. per lb. for *English*, and 1s. 0¼d. per lb. *c.i.f.* for *foreign*.

Alum—Steady at £5 7s. 6d. to £5 10s. per ton for loose *lump*, and £6 per ton for *ground in bags*.

Ammonia Compounds—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to packing, etc. *Iodide*: 14s. 3d. per lb. *Muriate*: Chemically pure small crystals 30s. to 32s. 6d. per cwt., white free from metals 25s. to 27s. 6d. per cwt. *Oxalate*. 5½d. per lb. *Sal ammoniac*: Crushed for batteries, first 37s., seconds 35s. per cwt.; sublimed firsts 35s., seconds 33s. per cwt. *Sulphate*: Firm. Grey prompt 24 per cent., London, £10 to £10 1s. 3d. per cwt.; Hull prompt, £10 to £10 1s. 3d.; Leith prompt, £10 1s. 3d.; Beckton, Feb.-March, £10; Beckton terms, £9 17s. 6d. per ton. *Sulphocyanide*: 1s. to 1s. 2d. per lb., according to quantity, etc.

Antimony.—*Regulus* is quoted £37 10s. to £38 per ton; *crude* (black sulphide). *Japan*, £23 10s. per ton on spot, landed; £22 10s. *c.i.f.*

Antipyrine.—Dr. Knorr's article is unchanged in price, and in steady demand, while the competition in *Phenazone* has again set in, with increased severity, the agent for one maker hawking the article round almost *à tout prix*, in hopes of securing the business. It would appear probable that price has about reached its lowest, in that it is stated that present prices leave makers practically at a loss, or at least certainly no profit at all.

Arsenic.—*Powder*, 18s.; *lump*, 34s. per cwt.

Asafetida—Continues in good demand with sales of medium qualities at 50s. per cwt. Good *Persian Gulf Gum* in secondhands is held for 60s. to 80s. per cwt.

Ash.—*Pot.* easier at 24s. 9d. *Pearl*, 34s. per cwt.

Atropine.—Makers are very firm at 15s. 6d. per oz. for the *Sulphate* B.P., and 17s. 10d. for the *Alkaloid*.

Bismuth.—Steady at 5s. per lb. for the commercial quality of the metal in half-ton lots, and 5s. 1d. per lb. for the *Subnitrate B.P.*, and 5s. 8d. per lb. for the *Carbonate B.P.*, other salts being quoted in proportion.

Bleaching Powder (Chloride of Lime).—*English* is quoted £6 per ton.

Borax—Steady at 16s. 6d. per cwt. for *crystals* and 17s. per cwt. for *powder*.

Bromine and Bromides—In good demand, makers' prices being unaltered.

Camphor.—*Crude* remains quiet but very steady, *China* being quoted 127s. 6d. per cwt., *c.i.f.*, and *Japan* 132s. 6d. per cwt., *c.i.f.* Makers of *refined* are firm at 1s. 8½d. per lb. for *English bells* and *powder*, and ¼d. per lb. less for *German bells*.

Cascara Sagrada—Is very firm, 40s. per cwt. being the price now asked for new bark, holders of old bark being very firm, and asking an even higher figure.

Castor Oil—Quiet: *Belgian* first pressing spot £27 10s, July-December £26 10s., second pressing £25 10s. per ton ex-wharf. Hull manufacture £25 to £26 10s. per ton in barrels 2⅛d. to 3⅛d. per lb. in cases ex-wharf London for prompt delivery, London pressed 25s. per cwt. in barrels, French 26s. 6d. to 27s. per cwt.

Chlorate of Potash.—*Crystals*, 3¾d.; *powder*, 4d. per lb. spot, London.

Cloves.—Privately *Zanzibar* quiet but steady, closing March to May delivery at 3 3/32d. to 3 1/16d. At auction 270 bales *Zanzibar* were bought at 3¾d. to 3⅞d. 59 cases *Penang* also bought in, fair to good bright picked at 8d. to 9½d.

Coal Tar Distillation Products.—*Toluol*, crude, 1s. per gallon; pure, 1s. 3d. to 1s. 6d. per lb. *Benzole*: 50 per cent. 8d. per gallon; 90 per cent., 8d. per gallon. *Creosote*: 3¼d. per gallon. *Crude Naphtha*: 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160°C., 1s. 6d. per gallon; 90 per cent. at 160°C., 1s. 3d; 90 per cent. at 190° C., 1s. 3d. per gallon. *Anthracene*: A, 3½d.; B, 2½d. per unit. *Pitch*: 25s. 6d. per ton *f.o.b.* *Tar*: Refined, 12s. per barrel, 2½d. per lb.; crude, 12s. per barrel, 2½d. per lb.

Cocaine—Makers are firm at 11s. to 12s. 3d. per oz. for the *Hydrochlorate* in 25-oz. tins for 100-oz lots.

Codein—Is firm at 12s. 6d. per oz. for the *pure*, and 1s. per oz. less for the *salts*.

Cod-Liver Oil.—Market is steady at 62s. 6d. to 65s. per barrel of 25 gallons, according to brand for best non-congealing Norwegian oil of 1898 import, while the new oil is quoted at about same figures, to rather more money *f.o.b.*

Cream of Tartar—Firm at 74s. per cwt. for first white crystals on spot, while *powder* is again rather dearer at 78s. to 80s. per cwt

Ergot of Rye—Is very quiet, prices being nominally 1s. 4d. to 1s. 6d. for *Russian* and *Continental*, and 2s. to 2s. 3d. per lb. for *Spanish*.

Eserine (Physostigmine)—Makers quote 2s. per gramme for the *Sulphate* and *Salicylate*, and 3s. per gramme for the *pure*.

Galls.—*China* are firm at 57s. per cwt. on spot, landed, and 52s. per cwt., *c.i.f.*, for arrival, for usual shapes. *Persian* are firm, but business is checked by the high prices asked by holders, viz., 62s. 6d. per cwt. for *blues* on the spot, and 60s., *c.i.f.*, for arrival. *Whites* are also firm at full prices. *Greens* continue scarce.

Gentian Root.—There has been a good business doing this week and prices are tending higher, 16s. 9d. to 17s. per cwt. is present quotation.

Ginger.—Of 938 packages *Cochin* only 261 packages sold at easier rates; of cut kinds only 24 cases sold, medium and small rather rough and slightly wormy 45s. 6d., the remainder bought in, B at 60s., and C at 33s. to 37s.; of rough 237 bags sold, medium and bold some small at 25s.

Glycerin.—*Crude* is steady at about £30 to £31 per ton for

best quality for refining purposes, while the *refined* quality is unchanged at 52s. 6d. per cwt. for good *English* makes, and 54s. to 60s., according to brand, for *German* white double-distilled chemically pure 1260° quality, in tins and cases.

Golden Seal Root—Is scarce on the spot, and 2s. 8d. to 2s. 9d. per lb. is the nominal quotation. Buyers are afraid of these high rates, but they seem likely to rule for some months to come.

Grains of Paradise—Have been in demand, and with smaller stocks prices are higher at 67s. 6d. to 70s. per cwt.

Gum Acacia.—The market for Soudan sorts is very firm and supply short. Good soft sorts sell at 80s. per cwt. Trieste grains £6 15s. per cwt.

Iodine and Iodides—Are steady at unchanged prices.

Ipecacuanha.—The broker holding the bulk of the stock of *Rio* quotes nominally 14s. per lb., and seems quite content to watch business passing him, feeling sure his time is coming. Second-hand holders ask generally 13s. 6d., but a bale or two might be got below this figure. For *Carthagena*, 8s. 3d. to 8s. 6d. per lb. is asked, but for both qualities there is not much demand.

Menthol—Firm at 7s. 9d. to 8s. per lb. for best brands of *Japan* in dry white crystals for 5 case lots, 12×5 lb. tins in a case.

Mercurials.—Makers are very firm at 2s. 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive Sublimate*, the other preparations being quoted in proportion.

Morphia—Is quiet but steady at 4s. 9d. per oz. for the *Hydro-Chlorate powder*, and 2d. per oz. more for the *crystal* salts.

Nitrate of Silver—Is fairly steady at 1s. 6d. per oz. for *crystals*, the *sticks* being dearer in proportion.

Nitrate of Soda.—*Commercial* is quoted on the spot £7 15s. per ton ; *refined*, £8.

Oils (Essential).—Business in these has been very quiet this week, and there are no changes either way to record. *Peppermint* : English, 34s. per lb. ; American, H.G.H., quiet, at 5s. 6d. to 5s. 9d. per lb. ; Wayne County, 3s. 3d. to 4s. per lb. *Star Aniseed* quiet at 6s. 1d. to 6s. 3d. per lb. *Cassia* quiet at 5s. 3d. to 5s. 6d. per lb. for 80 per cent., and 5s. per lb. for 75 per cent. *Lemongrass* continues dull of sale, but holders are firm at 2⅞d. to 3d. *Citronella* dull of sale at 12½d. to 1s. 1d. per lb. in tins, and 11½d. to 1s. per lb. in drums. *Sassafras* is very firm at 1s. 8d. to 2s. per lb. as to quantity. *Eucalyptus* is selling well at 1s. to 2s. 6d. per lb., as to quality.

Oils (Fixed) and Spirits.—*Linseed*, steady, London spot pipes, £17 7s. 6d. ; barrels, £17 17s. 6d. per ton. March-April, £17 15s. May-August, £17 7s. 6d. ; September-December, £17 2s. 6d. Hull spot, naked, £17 10s. ; March-April, £17 5s. ; May-August, £16 5s. ; September-December, £15s. 15s. *Rape* : Quiet. Ordinary brown spot and March-April, £21 per ton ; refined spot, £22 10s. ; Ravison spot, naked, £17 to £17 5s. ; March-April, and May-August, £17 10s. *Cottonseed* steady. London crude spot £13 15s., March-April £14, May-August £14 2s. 6d. ; refined spot £15 to £15 15s. per ton, according to make ; Hull refined spot, naked £13 10s., March-April, £13 12s. 6d., May-August £14 5s. ; Hull crude spot £12 7s. 6d., March-April £12 10s., May-August, £13. *Olive* : Spanish £29 10s. to £31, Levant and Mogador £29 to £32 per ton. *Cocoanut* firm ; Ceylon spot £26, landed, February-April £24 10s , March-May £24 5s. per ton *c.i.f.* Cochin spot £29 10s., landed, January shipment £28, February-April £26 5s. per ton *c.i.f.* *Lubricating* : Pale American spot 5s. 6d. to 7s. per gallon, black 4s. 9d. to 5s. 6d. ; pale Russian 7s. to 8s., black 4s. 6d. to 5s. per gallon. *Turpentine* market is quieter. American spot 32s. 4½d. to 32s. 6d. per cwt., March to April 32s. 4½d. to 32s. 6d., May to June 31s. 4½d., July to December 26s., September to December 25s. 10½d. to 26s. per cwt. *Petroleum* steady, Russian spot 5d. to 5¼d. per gallon, American spot 5⅛d. to 5⅞d., water white 7⅛d. *Petroleum Spirit* : American 8d., deodorised 8½d. per gallon.

Opium.—There has been a rather better demand, especially for manufacturing and druggists' kinds, for which slightly higher prices have been paid than were previously ruling. Persian has also been in demand and up to 11s. per lb. has been paid for choice export qualities, and 10s. 6d. for good manufacturing sort. Soft shipping has been somewhat neglected, to-day's quotations are about as follows :—Fine *Druggists'* 10s. 9d. to 11s. 6d. per lb., fair to good *seconds* and manufacturing kinds 10s. to 10s. 6d. per lb., good to fine *soft shipping* qualities 12s. 3d. to 13s., *seconds* 10s. 3d. to 10s. 6d. per lb., *Persian* 10s. 6d. to 11s. 3d. per lb.

Oxalic Acid—Quiet at 3d. to 3½d. per lb. nett, delivered free, London.

Paraffin Wax.—*Crude*, 1¾d. to 2d. per lb. ; *refined*, 2¼d. to 3½d. per lb.

Permanganate of Potash—Market is decidedly firmer, the pressure to sell on part of makers having ceased in consequence, it is said, of an unremunerative level of prices having been reached. It is, however, still possible to buy small crystals in 1 cwt. kegs for ton lots at 50s. per cwt.

Phenacetin—Steady at 3s. 9d. to 4s. per lb. for *crystals* or *powder*, *Bayer's* being quoted 6s. 1d., and *Riedel's* 5s. 5d. per lb. in 1-lb. orginal bottles.

Pitch.—8s. per cwt.

Potash Compounds—Are without change, as follows : *Bicarbonate*, 30s. to 35s. per cwt., according to make, quantity, etc. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10d. per lb. *Chlorate Crystals*, 3¾d., *powder*, 4d. per lb. *Iodide*, 10s. 6d. per lb. *Oxalate*, neutral, 5d. to 5½d. per lb. *Permanganate*, decidedly firmer, but can still be bought at 52s. 6d. per cwt. for small crystals and 57s. 6d. per cwt. for large crystals, in 1 cwt. kegs. *Prussiate* : *Yellow* English 7¾d. to 8d. per lb. *Red* 1s. to 1s. 2d. per lb., according to quantity. packing, and make.

Quicksilver.—The importers quote £8 5s., while from second hand 1s. per bottle less money is asked.

Quinine—Quiet but firm. German makers are not free sellers, quoting nominally 1s. 2d. per oz. for best brands of *German Sulphate* for 1000 oz. lots in 100 oz. tins. Best *English* make is quoted 1s. 6d. per oz., in 1 lb. vials for the *sulphate*, and 2s. per oz. for the *hydrochlorate*.

Rhubarb.—Business continues fairly active, common, rough, high-dried is wanted at 6d. per lb., but holders are now asking 6½d. per lb.

Rosin.—*Strained* is quoted 4s. 3d. per cwt. landed for spot delivery, and 4s. per cwt. *c.i.f.* for April-June and July-December shipment, per sailing vessel.

Saffron—Is very firm, full rates up to 45s. per lb. being asked for best new *Valencia*.

Senna.—*Tinnevelly* ; Demand is inactive owing to high prices asked by holders, but some business has been done at very full rates. For small yellow and spotty leaves 2½d. per lb. has been paid, medium greenish 4d. per lb.

Soda Compounds.—*Crystals*, 52s. 6d. in bags, 55s. in barrels, ex-ship, Thames. *Ash*, £5 to £5 10s. per ton, according to strength, etc. *Bicarbonate* : 97 per cent., £7 10s. to £8 10s. per ton, price of the fully bicarbonated being 18s. 6d. to 20s. per cwt. *Bichromate*, 2¾d. per lb. *Bromide*, 2s. 1½d. per lb. *Caustic* : White, 70 per cent., £7 10s. per ton ; 60 per cent., £6 10s. per ton. *Hyposulphite* (*antichlor.*), 6s. 6d. to 8s. 6d. per cwt., according to make, quantity, and packing. *Iodide*, 11s. 10d. per lb. *Nitrate* : Commercial, £7 15s. ; refined, £8 2s. 6d. per ton.

Soda Crystals.—Barrels 55s., bags 52s. 6d. per ton, ex ship Thames.

Spices (Various)—*Black Pepper* : 67 bags Singapore bought in, fair at 5½d. ; also 40 bags Penang at 5d. ; 70 bags Lampong sold at 5d. to 5⅛d. *White Pepper* : Of 241 bags Singapore only 7 bags fine sold at 9⅜d., the remainder bought in, good at 9d. to 9⅜d. ; 80 bags Siam also bought in at 9d., and 62 bags Penang at 8½d. *Cayenne Pepper* : 2 packages Natal bought in at 2s. *Chillies* : 41 packages Japan sold, partly without reserve, at 38s. to 41s. and 42s. 6d. subject. *Capsicums* : Of 70 bags Natal 10 bags sold, without reserve, at 26s. *Cassia Lignea* : 349 cases all bought in ; good old at 55s., and new selected at 50s. ; 180 bales broken bought in at 35s. to 40s. *Cinnamon Chips* : Of 230 bags Ceylon only 20 bags sold at 3½d. *Mace* : 19 cases Penang bought in, fair to fine pale at 1s. 7d. to 2s. ; 21 cases West India sold, fair to good pale, 1s. 7d. to 1s. 9d. ; fair red, 1s. 5d. ; pickings, 1s. 3d. to 1s. 4d. *Pimento* : Of 356 bags only 71 bags sold, fair to good at 4⅝d.

Sulphur—Firm at 7s. 6d. per cwt. for *English roll*, and 10s. for *flowers*, *Foreign* being quoted 6s. 6d. per cwt. for *roll*, and 7s. per cwt. for *flowers*.

Sulphate of Copper—Firm at £23 10s. to £25 10s. per ton on the spot.

Sulphonal.—Makers are firm at 17s. per lb. for *crystals* and *powder*, while quantity offering from second hand at anything below above price is now quite limited.

Tar.—*Stockholm*, 26s. 6d. ; *Archangel*, 18s. per cwt.

Thymol—Is firm at 7s. 9d. to 8s. 3d. per lb., according to make, quantity, and packing.

Newcastle Chemical Report.

February 22, 1899

General business is, if anything, on the improving side. Bleaching Powder keeps moving freely, whilst Soda Crystals are not slow. Sulphur, if anything, is a trifle scarce. General prices, however, are unchanged, and are quoted as follow :—Bleaching Powder, £5 to £5 10s. Soda Crystals, 47s. 6d.. according to markets. Sulphur, £4 15s. to £5. Caustic Soda, 70 per cent., £7 5s. Alkali, £4 5s. to £4 10s. Soda Ash, £5 per ton.

Liverpool Market Report.

February 22, 1899.

The only alterations since last week are an advance in Spirits of Turpentine and Nitrate of Soda, and better rates for Sulphate of Copper. Heavy sales of Carnauba Wax have taken place at good prices. Chilian Honey has been selling briskly and Sierra Leone Chillies of good quality have made full prices.

Bleaching Powder—£5 per ton.

Borax—Is very firm at £16 10s. to £17 per ton.

Canaryseed—Is slow of sale and neglected for the moment. Nominal quotation 26s. 6d. per 464 lbs. for Turkish seed.

Carnauba Wax—Has attracted the attention of buyers to the extent that over 500 bags have changed hands, 400 going at 33s. 9d. to 35s. per cwt. for grey, and 55s. to 57s. 6d. for yellow. 100 bags grey later sold at 36s. per cwt. ex store.

Oils (Fixed) and Spirits.—*Castor* is in fair inquiry both for spot and future lots, and the tone of the market is good ; the prices for Calcutta are 2 15/16d. per lb. for spot, and 2 13/16d. for March-April shipment, 100 cases ex-store went for the former price and 500 cases to-arrive at the latter. French is 2 15/16d. per lb., and Madras 2¾d., 50 cases of the latter selling from store. *Clive* : Spanish is firm and sells at £30 to £31 per tun. *Linseed* has improved in price and is now 19s. to 19s. 6d. per cwt. *Cottonseed* is steady at 15s. 9d. to 16s. per cwt., but business is quiet. *Spirits of Turpentine* are again on the rise, 33s. per cwt. is the present figure, and there is no evidence of any immediate and appreciable downward movement.

Chillies.—27 bags *Sierra Leone* went for 32s. 6d. to 42s. 6d. per cwt., *ex* quay.

Honey.—100 barrels of *Chilian* sold for 22s. to 22s. 3d. per cwt. for Pile 2 ; 25s. to 25s. 6d. for Pile 1, and 29s. to 30s. per cwt. for Pile X.

Linseed.—Spot parcels are very scarce, and at high rates ; forward lots of Calcutta have advanced 6d. per 416 lbs.

Potash Salts—Are unchanged in price.

Soda Salts.—*Nitrate* has advanced to 7s. 9d. and 8s. per cwt., and there is a better demand.

TERMS OF SUBSCRIPTION.

The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

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Obituary.

Rees.—On February 1, Daniel Rees, Chemist and Druggist, Swansea. Aged 64.

Murison.—On February 7, James Murison, Chemist and Druggist, Aberdeen. Aged 77.

Burt.—On February 10, James Burt, Pharmaceutical Chemist, Worthing. Aged 57.

Rees.—On February 14, Llewellyn Vosper Rees. Chemist and Druggist, Nottingham. Aged 52.

Sumner.—On February 14, Robert Summer, Chemist and Druggist, Liverpool. Aged 72.

Cumnock.—On February 18, John Cumnock, Chemist and Druggist, Glasgow. Aged 51.

North.—On February 12, Thomas Henry North, Chemist and Druggist, Exeter. Aged 51. Mr. North died unexpectedly on the Sunday evening, death being attributed to syncope. Alderman Gadd, referring to the sad occurrence, at a meeting of the Exeter Association, said Mr. North had been for many years with Messrs. Stone and Son, Chemists, of Exeter, who were singularly fortunate in having in him an excellent dispenser. He was highly respected by all who knew him. A vote of condolence was passed by the Association and was transmitted to the widow and family.

Taylor.—On February 13, after a few days' illness, Benjamin Taylor, retired Chemist and Druggist, Leeds. Aged 64 years. Mr. Taylor was apprenticed to the late Mr. John Land, Briggate, Leeds, to whose business he succeeded. He was subsequently engaged in the wholesale drug trade, but retired from business a few years since, giving much useful service to public objects as an Overseer of the Poor and on the Committees of the Savings Bank, the Tradesmen's Benevolent Institution, etc.

Partnerships Dissolved.

(From the London Gazette.)

James Mayon, Henry Mayon, John H. Thornley (trading as James and Henry Mayon), Chemists, Druggists, and Drysalters, 271, Gt. Lister Street, Birmingham, so far as regards Henry Mayon.

W. H. Horton and J. H. Gwynne, General Medical Practitioners, 182, Jamaica Road, S.E. Debts will be received and paid by J. H. Gwynne.

Publications Received.

Winke für die Pharmazeutische Rezeptur. Von A. Roderfeld. Pp. 58. Price 1*s.* 6*d.* London : Williams and Norgate, 14, Henrietta Street, Covent Garden. 1899. From the Publishers.

Tabellarisches Repetitorium der Chemie und Pharmakognosie. Von Dr. C. Jehn. Pp. 121. Price 2*s.* London : Williams and Norgate, 14, Henrietta Street, Covent Garden. 1899. From the Publishers.

Jaaroverzichten Betreffende den Handel in Koloniale Producten. 1898. Bijvoegsel van "De Indische Mercuur," No. 7 Dd. February 18, 1899. Amsterdam : J. H. de Bussy. From the Editor.

Sur Quelques Nouveaux Médicaments a Base de Bismuth et sur leur Analyse. Par M. Duyk. Bruxelles : Bulletin de L'Académie Royale de Médecine de Belgique. 1898. From the Author.

King's American Dispensatory. New edition, entirely rewritten and enlarged by Harvey W. Felter, M.D., and J. Uri Lloyd, Ph.M. Vol. I. Pp. 950. Price 4.50 dols. London : Potter and Clarke, 60, Artillery Lane, E.

The Calendar of the Pharmaceutical Society of Ireland, 1899. Vol. xxiii. Pp. xiii. + 200. Dublin : The Registrar, 67, Lower Mount Street. 1899. From the Publisher.

Guy's Hospital Reports, edited by E. C. Perry, M.A., M.D., and W. H. A. Jacobson, M.A., M.Ch., vol. liii., being vol. xxxviii. of the third series. Pp. xliii. + 312. London : J. and A. Churchill, Great Marlborough Street, W. 1898. Exchange.

Companion to the British Pharmacopœia. By Peter Squire. Seventh edition, revised by P. W. Squire, F.L.S., F.C.S. Pp. xxxii. + 850. Price 12*s.* 6*d.* London : J. and A. Churchill. 1899. From the Author.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Water-Bed, full size, good condition.—Offers to Frost & Harrison, Lee.

'Chemist and Druggist' and 'Pharmaceutical Journal' exchanged for weekly periodicals.—McCorquodale, Markinch.

Pure English Honey in 28 and 30 lb. tins, 5½d. per lb., sample 2d.—Heath, Hertford House, Clarence Road, Teddington.

Minor Slides, Botanical. Best London make. Over six dozen. Cheap for cash. What offers? Whole or part.—Barnard, 97, Newington Green Road, London, N.

Chemist's outside "Vertmarshe" lamp, with shade and reflector, 2 red lights interchangeable, £5, or best offers; also Wenham lamp, 36s.—Barnett, Chemist, 97, Uxbridge Road.

50,000 Choicest Microscopical Objects of every variety. Catalogues free. New and secondhand Microscopes by all leading makers. Cabinets, Mounting Materials, etc.— Suter, 10, Highweek Road, Tottenham, Middlesex.

X-ray Outfit for Sale, price £10; human skeleton, price £5; steam-engine and boiler, about 1 h.p., £12 10s.; Duke binocular field-glass, by Steward, cost £6 6s., price £4. Magic lantern outfit exchanges entertained.—Spence, Bath Street, Ilkeston.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

'Amateur Photographer,' vols. 1-26, in 13, 1885 to 1897, half roan, neat, cloth sides, 50s.; 'Photography,' vols. 1 to 7, same style, 25s.; carriage forward; fit for any gentleman's library.—Wood, 118, Northbrook Street, Liverpool.

Prantl's 'Botany,' 1891, 4s.; Bentley's 15s. 'Botany,' latest, 5s. 6d.; Bower's 'Botany,' 2s.; 'Pharmacy Laws,' 1s. 9d.; Jago's 'Inorganic,' 1s. 3d.; Remsen's 'Inorganic,' 2s. Good condition. Modern editions. Carriage paid.—Gower, Waterloo, Liverpool.

Etherised Lavender Water with otto, guaranteed exquisite fragrance, triple strength, 2s.—Alldridge, 11, Esher Street, Westminster, S.W.

Kramerine, a superior liquid dentifrice for cleaning and whitening the teeth, removing tartar film, imparting an agreeable freshness to the mouth, with directions, 2s. 6d.—Alldridge, 11, Esher Street, Westminster, S.W.

Magic Lanterns, second-hand; triples and biunials; oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

To Manufacturing Chemists and Others, practical working formulæ for the following: Mist. Pepsin. Co. c. Bismuth., Liquor Euonymin c. Pepsin., Infus. Gent. Co. Conc., 1-7, etc., 1 oz. samples, 6 stamps.—Price and particulars from "Tabloid," 5, Serle Street, W.C.

21 vols. 'Year-Book of Pharmacy,' accept cash or exchange; 6 doz. each 1s. 6d. and 2s. 9d. Holloway's coca and meat-and-malt wine, half selling price; Maw's pillar dispensing scales, fig. 7, half-price; quantity corks, assorted sizes, 3d. per gross.—Floyd and Co., Bury St. Edmunds.

Pamphlet on the Manufacturing of all kinds of Household, Toilet, Dog Soaps, Bleaching Fats, Oils, making Cloudy Ammoniated Solution, Soda, etc., 1s. 6d.—Garforth, Chemist, Sheffield.

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EXCHANGE.—Continued.

Overstocked.—Holloway's Wines. Liberal discount off cost price.—Balchin, Gosport.

'The Dispensatory,' unsoiled, cost 37s. 6d., take 21s., carriage paid.—"Medicus," 35, Thompson Street, Oldham Road, Manchester.

A handsome 20-in. Globe Lamp for sale, ruby glass, richly gilded, perfectly new, with bracket complete, £3 10s., worth nearly double.—Humphrey, 121, Charing Cross Road, London.

Surplus Stock; bargains; 20 original cases of sponges; several gross Munyon's remedies, and other saleable patents; large lot of 1s. homœopathics at 24s. gross; also drugs, sundries, counter, specie jars.—"Spec," 5, Serle Street, W.C.

Offers requested for 'Pharmaceutical Journal,' and 'British and Colonial Druggist,' posted weekly. Either cash, patents, or magazines, etc., suitable for the home, to equivalent exchange.—Apply, Griffin, Chemist, Kidderminster.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

'Pharmaceutical Journal,' January 16, 1892. One shilling each will be paid for clean and complete copies by—The Publishers, 'Pharmaceutical Journal,' 5, Serle Street, London, W.C.

Squire's 'Companion, B.P.,' sixteenth edition; good condition.—Salol, 147, Holdenhurst Road, Bournemouth.

Advertisements.

(Received too late for Classification).

TO be Sold, a well-fitted chemist corner shop at valuation of stock and fixtures. Established many years, or business may be carried on and new lease granted. Situation in a highly respectable Western neighbourhood, the property of a medical man, now retiring from retail. Apply, Mr. Jones, Chemist, 8, Shepherd's Bush Green, W. (opposite Uxbridge Rd. Station).

JUNIOR wanted, in-door, for high-class dispensing business. State full particulars and salary required. C. Lowe & Co, Surbiton, S.W.

LADY Pharmacist wanted, qualified, to superintend in the packing department, handling of preparations containing poisons. Applicants will please state age, experience, and salary required to Poison, c/o Messrs. Street & Co., 30, Cornhill, E.C.

ENGLISH NEWS.

Death of Lord Herschell.—By the sudden death of Lord Herschell chemists and druggists have suffered a severe loss of probable support in the endeavour they are about to make for obtaining due recognition of their rights under the Pharmacy Acts as persons authorised to carry on a business in which regard for public safety renders legal qualification indispensable.

Pharmacy and the Public.—The very excellent paper by Mr. A. G. Gardiner on proposed pharmaceutical legislation from a layman's point of view (see p. 207) has been published at the request of the Blackburn Committee of the North-East Lancashire Chemists' Association.

St. Raphael Wine.—On Friday, February 24, Mr. Justice Kekewich gave judgment on an application by the Société Anonyme St. Raphael, who sell St. Raphael Quinquina Wine, asking that the trade mark of Messrs. Clement et Cie., who also trade as La Compagnie de Vins de St. Raphael, might be removed from the Register, or in the alternative that a memorandum be entered on the Register, disclaiming any exclusive right to the use of the words "St. Raphael." The application was based on the ground that the words in question were geographical, and could not be registered as a trade mark, though they might form an addition to a trade mark, and as such be registered with a disclaimer. The respondents, in their affidavits, denied that the words were derived of or connected with any town or village in France called St. Raphael, and Mr. Justice Kekewich adopted that view, and holding that the words formed an integral part of the mark, which had been on the Register from 1888, dismissed the application with costs. The respondents sell their wine as St. Raphael Tannin Wine, and in one of their affidavits said that the wine, though a natural wine, was specially selected and prepared for therapeutical purposes, and that it was particularly rich in tannin, which was "the fundamental element in quinine."

Mr. H. Watts, M.P.S., of Darnall, has transferred his business from 3, Main Road, to more commodious premises, 269, Darnall Road.

Leicester Chemists' Social Union.—A lecture "On the Rhine" and "The Bernese Alps" was given by Mr. S. F. Burford, at Dover Street School, on February 23, to a large audience, two hundred chemists, assistants, and friends being present. The views were truly magnificent—those of the glaciers being very fine—Mr. Burford giving a graphic description of their formation and movement. Mr. Hewitt delighted the audience with his masterly rendering of a violin solo, which was enthusiastically encored. The Misses Hewitt and Rowe rendered a brilliant piano duet, and Miss Hewitt gave a charming version of the song "The Swallows' Return." Mr. F. Howard Lloyd occupied the chair. Mr. W. Thirlby moved a vote of thanks to the lecturer, lanternist, chairman and soloists, and was seconded by Mr. Harvey, an expert in Swiss scenery photography. Messrs. Burford and Lloyd suitably replied, and the National Anthem brought a very pleasant evening to a close. Arrangements were carried out by the Hon. Secretary, Mr. F. W. Goodess.

Wholesale Chemists' and Druggists' Cricket Championship.—The cup for this championship has been provided through the generosity of the following firms, each of whom has given a donation of two guineas:—Burgoyne, Burbidges, and Co.; Burroughs, Wellcome and Co.; Davy, Hill and Co.; Howards and Sons; Hewlett and Son; Hearon, Squire and Francis; May and Baker, Ltd.; Stafford, Allen and Sons; Willows, Francis Butler and Thompson; Wright, Layman and Umney. Mr. E. Sibley, care of Davy, Hill and Son, 64, Park Street, Southwark, has been elected Secretary of the League.

Poisoning Case at Birmingham.—A coroner's jury sitting at Birmingham on Monday came to the conclusion that Thomas Bayliss (32), a master electro-gilder, came to his death by taking, in mistake, a mixture containing cyanide of potassium. The witnesses called included Mr. Jeffrey Poole, chemist, Great Hampton Street, who stated that on the day of his death deceased called at his shop and asked for a rat poison which would act quickly. He was supplied with a mixture containing 20 grains of strychnine and 20 grains of powdered starch, and signed the poisons book in the ordinary way, speaking at the time of the absurdity of having to sign for such a small amount, whilst he had a hundred weight of cyanide of potassium upon his own premises. The packet of poison was handed to the witness, who said it did not appear to have been opened. Further evidence was given to the effect that the deceased had been taking medicine for biliousness, and that he was in the habit of experimenting with acids and poisons in his office. After his death a medicine bottle was found in his pocket, containing a mixture which smelled strongly of cyanide of potassium. The jury accepted the suggestion that the contents of the different bottles had been accidentally mixed.

Carbolic Acid Again.—Mr John Richards, Steward of the Conservative Club at Penge, was discovered moaning on his office floor, on the evening of Tuesday, the 21st ult. A bottle containing carbolic acid stood on the table. His agonised wife summoned Dr. Clark, who gave an emetic, but without avail, death occurring very shortly after. At the inquest on Friday, a witness stated that the deceased had a few days before declared his intention of committing suicide, and witness had spent half-an-hour endeavouring to bring him into a better frame of mind. The coroner directed the jury to find a verdict of suicide during temporary insanity, which, he said, was the only logical verdict, as no man in his senses ever would take his own life. Verdict accordingly.

Sen-Sen Company *v.* Britten.—Before Mr. Justice Stirling, in the Chancery Division, on Friday, February 17, the Sen-Sen Company and T. B. Dunn & Co. moved for an order to restrain a Mr. Britten from passing off a medical preparation as of the plaintiffs' manufacture, and from exposing or advertising for sale, or procuring to be sold in boxes, packages, etc., which were colourable imitations of plaintiffs' boxes, packages, etc., the preparation in question in such a manner as to suggest that they were plaintiffs' merchandise. The plaintiff company is a private firm carrying on business in England, and the other plaintiffs—Dunn & Co.—are an American firm which manufactures a certain cachou for voice affections. The case was adjourned, as it transpired that "Sen Sen" was not a registered trade mark as represented by the plaintiffs.—Mr. Justice Stirling, in giving judgment on the 1st inst., after reviewing the facts of the case, said he thought the defendant's package might very easily lead an unwary purchaser to mistake his goods for those of the plaintiffs. The doubt which was occasioned in his mind, whether an injunction should be granted, was owing to the plaintiffs having used the words "Sen-Sen Trade Mark," whereas the trade mark had not yet been registered in England. Upon the materials now before him he was unable to come to the conclusion that the plaintiffs had been guilty of such misrepresentation, which deprived them of their right to an injunction, and he thought an *interim* injunction ought to be granted. The proper order would be to restrain the defendant, his servants, and his agents until judgment in the action or further order, from selling, offering, or exposing, or advertising for sale, or procuring to be sold, the preparations mentioned in the boxes, packages, and wrappers now made use of by the defendant, or in any other boxes, packages, etc., so got up as to be a colourable imitation of the plaintiffs' goods.

A Glycerin Refining-Plant Case.—At Liverpool Assizes before Mr. Justice Bigham, on February 21 and 22, Messrs. Scott and Son, engineers, of London and Liverpool, sued Messrs. Salmond, Son and Nephew, soapmakers, of Bradford, for various sums, *i.e.*, £833 and £500 – balances due under agreement for the delivery and erection of plant for the refining of glycerin. The defendants, contended that the machinery supplied by plaintiffs was incapable of doing the work for which it was intended, as it would not convert good crude glycerin into the chemically-pure article. They, therefore, entered a counter-claim for damages.—The plaintiffs contended that the machine would do all that was contracted for, but that it was being worked with a crude glycerin from which it was impossible to obtain chemically-pure glycerin.—Mr. Pickford, Q.C., and Mr. M. Hill were for the plaintiffs, and Mr. Taylor, Q.C., and Mr. Ellis Hill were for the defendants. With respect to the glycerin-refining plant, his lordship decided that an independent test of its capability should be made, and, accordingly, adjourned that part of the case.—Mr. Taylor said that he had spoken with his clients, and they had decided not

to rely further upon the second part of the case in respect to the £500.—His Lordship gave judgment for £500 with costs on this part of the case, granting a stay of execution till the whole case had been disposed of, on the application of Mr. Taylor.—His Lordship further suggested that both parties, before spending more money on litigation, should approach the remaining part of the case, not in a spirit of antagonism, but as a business matter, and with a view to an amicable settlement.

Presentation to Alderman R. Gibson, Ph.C., and Mrs. Gibson.—On Wednesday last, the members of the Manchester City Council, together with members of the Art Gallery and Technical Instruction Committee, who are not members of the Council, showed their appreciation of the services of Alderman R. Gibson and Mrs. Gibson during their term of office as Lord Mayor and Lady Mayoress of Manchester, last year, by the presentation of a service of silver plate, comprising a centre-piece epergne, a pair of candelabra, and four bowls for flowers or fruit.

Early Closing at Newcastle-on-Tyne.—The east end of this city has during recent years developed an unenviable notoriety for the late hours to which chemists kept open shops. Through the kindly intervention of the local secretary of the Pharmaceutical Society, the gentlemen concerned have met together to discuss the situation. A laudable spirit of concession was observable in the meeting and a unanimous decision was arrived at to close at 8.30, and an agreement to that effect has been signed by the proprietors of businesses to the east of the Ouseburn.

Manchester Literary and Philosophical Society.—A special meeting of the above Society was held on Tuesday for the presentation of the Wilde medal for 1899, and the Wilde premium for the same year. The medal was by unanimous vote awarded to Sir Edward Frankland, K.C.B., F.R.S., for his chemical researches, and the Wilde premium to Dr. Chas. H. Lees, in recognition of his successful researches in physics, more especially with regard to the thermal conductivities both of solids and liquids. Professor Wm. Ramsay afterwards delivered the Wilde lecture, taking for his subject the newly discovered elements of the air and their relations to the kinetic theory. Mr. James Cosmo Melville, President of the Society, occupied the chair.

A Fatal Dose of Laudanum.—The Manchester City Coroner held an inquest on Wednesday on the body of Sarah Murray. The deceased took a draught composed of half an ounce of castor oil, twopennyworth of tincture of rhubarb, and a pennyworth of laudanum, with the object of curing a pain in her stomach. Verdict, "Accidental death."

SCOTTISH NEWS.

Spirit of Salt in Mistake for Medicine.—On Saturday night, February 25, Robert Kirkland, aged 51, residing at 10, Dalrymple Place, Edinburgh, swallowed a quantity of spirit of salt in mistake for medicine. He was at once removed to the Royal Infirmary, where he died on the following morning.

Death of Dr. Rutherford.—One of the victims of the insidious epidemic of influenza, which is at present very prevalent in Edinburgh, was William Rutherford, M.D., F.R.S., Professor of Physiology in the University of Edinburgh, who died on February 21, and his death makes a blank that will not be easily filled in the teaching staff of the University of which he was a distinguished ornament. His name was brought prominently under the notice of pharmacists in connection with his research on "The Action of Drugs on the Secretion of Bile," published in 1879, which was followed by a more extended use of many of the American eclectic remedies, notably, euonymin, iridin, and podophyllin. Like many who have attained high distinction in the ranks of medicine, he began his career as a druggist's apprentice in the drug shop or dispensary of the late Dr. Falla, Jedburgh, which was under the management of the late Mr. J. F. Peters, chemist, who was known as the apothecary. The late professor used to say he was proud of the fact that he had swept the floor of the Jedburgh dispensary. It is said that when an apprentice he was more devoted to the study of anatomy and physiology than the mysteries of the drug business, and from his earliest days he was a keen student of all forms of animal life. Of a somewhat retiring manner and disposition, he was observant and studious from the outset. He possessed a great faculty for devising and arranging the appliances necessary for carrying out his numerous experiments and his early training in the ordinary manipulations of the pharmacy gave him some advantage in this respect. When he left the dispensary to pursue his medical studies in Edinburgh he left many of his specimens, which it took some time to clear out. An apprentice who followed him was cleaning out the dispensing cellar one day and came across hidden away in a corner an old bottle containing the body of an infant, and on showing it to Mr. Peters, he said: "Oh, that is one of Rutherford's remnants." The late Professor's example became the tradition of the old shop and was the means of stimulating many succeeding apprentices to leave the ranks of pharmacy and enter the medical profession.

Trade Notes.

We regret to announce the death of Mr. Barron, the senior partner to Messrs. Barron, Harveys and Co.

Messrs. Burroughs, Wellcome & Co. submit specimens of "Tabloid" Krameria and Cocaine. The value of rhatany in combination with cocaine in the treatment of certain affections of the throat is well known, and has received official recognition. In relaxed sore throat, irritable conditions of the pharynx, bronchorrhœa, etc., this "tabloid" preparation enables the physician to secure the astringent and tonic properties of krameria with the sedative action of cocaine. "Tabloid" krameria and cocaine possesses marked advantages over gargles, in that it is portable, and thus conduces to regular treatment when the patient is pursuing his ordinary daily avocation. Its effect is not transitory, but continuous, because, as it slowly dissolves in the mouth, it bathes the affected parts with a concentrated solution, the therapeutic effect of which is quickly evident. In pleasantness and palatability it is in no way inferior to lozenges and similar preparations, which are not so effective and rapid in their action. "Tabloid" krameria and cocaine is supplied in boxes of thirty, and in bottles of 100.

Messrs. W. F. Charles and Co., Loughborough, writes as follows:—The note, p. 204, in your valuable Journal in reply to W. H. D., 23/28, you give an address from which you state crude nicotine may be obtained. We take the liberty to say you are misinformed, and we believe we are the only firm who can or are willing to supply crude nicotine except in very large quantities, and the nicotine strength of our commercial article is much higher than the strength you mention, and varies from about 80 to 88 per cent. Anent your remarks *re* the danger of handling crude nicotine, we herewith enclose a specimen of our Clincher fumigant, the nicotine strength contained therein is always constant for the cubic space each vaporiser is intended to fumigate, and though not explosive, yet when heated over the discharger, in a few minutes the whole of the nicotine strength of the contents is vaporised into the surrounding space. With this fumigant the danger of handling nicotine is *nil*, as each Clincher is charged before leaving our manufactory, and will keep good for years. We enclose our list of fumigants, &c.

Messrs. James Townsend & Son, medical label printers, of Exeter and London, draw attention to their new photographic labels, samples of which they enclose. The labels are extremely neat and attractive, having a stock design which can be used for any wording at the customer's option. The firm also keep labels ready-worded without name and address. A sample set of handbills contains several good ideas for advertising various preparations. Specimens will be sent free to any chemist or dealer in photographic materials on application.

Messrs. W. Schacht & Co., announce that, in consequence of their premises, 26, Finsbury Pavement, E.C., coming down shortly, they have removed to 55, Fore Street, a few doors off Finsbury Pavement, and in close vicinity to the old establishment. Having acquired the business carried on for more than fifty years by Messrs. Warner and Co., pharmaceutical chemists, at 55, Fore Street, and with it a large and old-fashioned connection, they have decided to continue the name of that firm along with theirs, and henceforth the name of the firm will be Schacht, Warner and Co., English and foreign chemists, and the business will bo carried on at the new address as heretofore.

SCHOOL OF PHARMACY NEWS.

[*Contributed by Past and Present Students.*]

The Secretaries of the School of Pharmacy Students' Association announce that Professor J. N. Collie's account of his experience as a mountaineer on Mont Blanc will be given at a social evening on Friday next, March 10, at 8 o'clock in the evening. Members may obtain tickets of admission for their friends on application.

A Meeting of representatives of the various football clubs of the pharmaceutical colleges in London was held, by permission of the Secretary of the Pharmaceutical Society, in the Hanbury Library, on Wednesday last, to consider a scheme for the formation of a league. The P.F.C. was represented by a sub-committee consisting of Messrs. Evans, Finnemore, Frye, and Gray. A list of rules was drawn up and approved of. Great praise is due to Mr. J. Evans, who is really the originator of the scheme, and who has undertaken the duties of secretary of the league. Since the meeting the Secretary of the League has been promised a Cup for competition by Mr. Watson Will.

Comment on the "Ladies' Meeting" of the Students' Association is rather a difficult task; for the usual contributors to this column cannot boast of sufficient persuasive eloquence to ask one of the lady students to undertake it. A mere male critic, therefore, says there was nothing to distinguish the meeting from any other meeting, except that the lady authors used the same glass for water, and fastened their papers together with pins and cotton. This critic seems to be more observant and critical than he is usually given credit for.

Football.—After the evident improvement in the play last week it was expected that the Pharmacy team would accomplish something worthy of recording, but contrary to the general expectation they seemed to entirely collapse before a team, which, from an onlooker's point of view, was not on the same level. It is true that the "Square" team were without the services of three of their most prominent players, viz., Evans, Durbin; and Lloyd, but even taking that into due consideration a better show should certainly have been made. The opponents on this occasion were a team from the Middlesex Hospital, and as it is the only fixture with them this season there will be no chance of turning the tables. The game was played on the "Square" ground at Shepherd's Bush. The ball was started about 3.15 p.m., and disaster occurred almost immediately, when a long shot by the Hospital was allowed to slowly roll between the posts, the goal-keeper (a reserve man) thinking or dreaming that the ball was on the right side of the post. On restarting the ball —misfortune still seemed to dog the footsteps of the pharmacists— for the second goal scored by the Hospital was also practically given away, a free kick being allowed about five yards in front of goal from a "hands" by one of the "Square" backs, and was converted easily. From this point till the whistle sounded half-time nothing more was scored, the play being very irregular on both sides. On changing over the "pill-rollers" seemed to improve a little, and from a good corner kick by Warren the ball was carried through the goal. This little spurt soon died away, and the remainder of the game was very uninteresting, despite individual effort, no combination being shown amongst the forwards, with the disastrous result that three more goals were scored, and the embryo pharmacists left the field thoroughly routed. There are only three more matches left on the card of fixtures for this season, let it be hoped that the Square team will finish up in the same way as it commenced. Team as follows:—Goal, Carlton; backs, Gray and Stokoe; half-backs, Collinette, Garsed, Martin; forwards, Warren, Wild (captain), Owen, Wilkinson, Padwick.

A Visitor to the Museum has discovered an apparent glaring mistake in the official description of cassia fistula. He found the taste of the pulp to be strongly "aloetic," and not sweet as the Pharmacopœia indicates. Can the B.P. be wrong, for it goes without saying that a specimen in the Society's Museum must be genuine?

FRENCH NEWS.

(*From our Paris Correspondent.*)

Sodium Bicarbonate Compresses.—Inspired by an article written by Monsieur Guéorguievsky and published in the *Wratsch*, Monsieur le Docteur D. B. Joffé gives his experience of the remarkable successes he has had with compresses of a 2 per cent. solution of sodium bicarbonate in the treatment of acute and chronic suppurations in such cases as whitlow, carbuncle, phlegmon, bubo, etc. He demonstrates the superiority of this mode of treatment to that of iodoform or perchloride of mercury, and declares himself a partisan to the Guéorguievsky method, having extensively tried all in private practice.

Purification of Water by Sodium Peroxide.—In the *Annales de Pharmacie*, Monsieur F. Blats recommends the employment of sodium peroxide to obtain pure water free from bacteria. A litre of water can be sterilised thus in twenty-four hours by 1 gramme of the peroxide. The author neutralises the resulting sodium hydrate by adding citric acid.

Apropos of Mr. Rider Haggard's revival of the often-contradicted statement that in 1870-1871 the French army lost 23,649 soldiers from small-pox, whilst the German army only lost 459, Dr. Francis Bond writes that the Jenner Society, anxious to clear up this disputed question in so far as it may be possible to do so, took steps to obtain from the French Government the most recent information in regard to it, and through the courtesy of the Marquis of Salisbury received the following official statement on the subject: "In consequence of the absence of all medical statistics for the years 1870-71, it has not been possible to establish precise figures even for the general mortality, and still less for that of special disease, during that period. The number, 23,400, of small-pox deaths attributed to our troops by various authorities and quoted in authoritative publications, can only be looked upon as a provisional assumption. It has been a special object of the Technical Committee of Health recently to endeavour to discover by a searching inquiry the true value of this estimate, and it has arrived at the conclusion that it is greatly in excess of the reality. The principal variolous centres available for circulation were, in Germany, amongst the prisoners of war, with 1969 deaths; at Paris (army of Paris), with 1350 deaths; at Mans (army of the Loire), with 469 deaths; at Belfort (siege), 300 deaths; at Langres with 334 deaths; at Poitiers, with 270 deaths; at Metz (siege), with 172 deaths. Taking into account with these deaths those of various little garrisons, it is estimated that the total number of deaths caused by small-pox in the whole French army for the period referred to does not exceed 6000."

Campaign Against Foreign Medicaments.—Now that the suppression in some branches pharmaceutic is the order of the day here, a Parisian pharmacien, with ultra-protectionist views, writes to a trade organ, *La Pharmacie*, inveighing against the powers that be for their apparent apathy and lack of patriotism in allowing the market to be glutted with foreign medicaments (German in this case). He goes on to say that "instead of devouring one another as we have a peculiar habit of doing, ought we not rather to close our doors against foreign products, especially those of Germany? Our pharmacies are congested with those 'new remedies with fantastic names' manufactured across the Rhine. To these we ought to declare war. But no, our worthy wise men accept them with outstretched arms and pass them on to the hospitals to experiment with upon French patients. Being German scientific discoveries is a sufficient guarantee, and so they are tolerated." He fails to strike a sympathetic chord in this "organ," which replies to the effect that "we ought to accept those products which cure or do good, no matter whence their origin" (and cites antipyrin for example), adding that "the progress of pharmaceutical science is most evident in those countries where such science is encouraged and protected," and gives the comforting assurance that "from the day when such encouragement and protection is afforded to French pharmaceutical inventors the space for German products will become more limited." He may, however, derive some consolation from the fact that France can well hold her own in the industry from the

derivatives of coal-tar, which is the chief source of the organic compounds which constitute almost exclusively the "new remedies" of which he complains.

SOME TIME AGO A FRENCHMAN compiled new statistics concerning the consumption of alcohol in the different countries of Europe. The statistician found himself compelled to assign the somewhat doubtful honour of first place on the list to his own countrymen, and, what was still worse, the Grande Nation was not closely followed by the drinkers of "whisky" or of "schnaps," but, to use a racey term, simply won in a canter. When these statistics became generally known the first impression in France was one of unbounded astonishment. Frenchmen had always been accustomed to look upon drunkenness as a horrible vice essentially peculiar to their neighbours across the Channel and across the Rhine. The feeling of astonishment soon gave way to one of mingled panic and anger—panic on account of the future of the nation, and anger against the "*mauvais patriote*" who dared to tell his countrymen an unpleasant truth. However, now the truth has been recognised everything is to be done that can possibly be done in order that the situation may be ameliorated. One curious feature of the French teetotal campaign some time ago was the placarding of the barracks with pictures showing the effects of drink, and a number of medical men have started a special crusade against the evil. It appears that drunkenness in France has not been communicated to the people from above, that is to say that, whereas in the labouring classes the examples are unfortunately frequent, the cases of alcoholism in the upper and middle classes have up to the present been relatively rare. Medicated wines, as sold by the pharmaciens, as also the innumerable elixirs so much in demand (not so much for their therapeutic value perhaps as far their "toddy" qualities) form no inconsiderable portion of the enormous consumption of alcohol in one form or another. The statistics before me, however, show that the favourite beverage of the French working man is the horrible concoction known as absinthe, and its effects upon him are really disastrous. The harm done in England by the over-consumption of whisky, and by schnaps in Germany, is small compared to that done by absinthe in France. Dr. Laborde, of the Academy of Medicine, has affirmed in a brochure (pamphlet) upon the subject his firm conviction that, unless something be quickly done to remedy the present state of affairs, within a relatively small number of years the whole of the working classes will have become habitual drunkards, but, as the "Marchands de Vins" are exceptionally influential electors, it is to be feared that the deputies will be slow to support any measures likely to decrease the consumption of alcohol in France.

IRISH NEWS.

[*From our Local Correspondents.*]

WHAT IS VINEGAR?—At the Limerick Police Courts last week, Messrs. Alexanders & Co., druggists, were prosecuted under the Food and Drugs Act for selling table vinegar which was not of the nature and quality of the article asked for. Sir Charles Cameron, Public Analyst, Dublin, certified that the sample was merely acetic acid, and contained neither alcohol nor phosphoric acid, as it should. Professor Tichborne, M.P.S.I., LL.D., attended for the defence, and contradicted Sir Charles Cameron's analysis, and the manufacturer (a Mr. Downes, of Dublin) was produced in support of Dr. Tichborne's evidence. A written guarantee received by the defendant when ordering the vinegar, together with the surrounding circumstances, led to the magistrates dismissing the case.

MR. THOMAS P. WHILEHAN, L.P.S.I., late of Drogheda, is about to set up business on his own account in the County Westmeath.

MR. F. J. MARTIN, L.P.S.I., Bailieboro, has started a high-class medical hall on Harold Cross Road, Dublin, and is doing excellently.

ANALYSTS' DISAGREEMENT.—In a case heard last week in the Queenstown Police Court two prominent analysts disagreed about the quality of a sample of milk, about which a prosecution had been ordered under the Food and Drugs Act. Mr. D. J. O. Mahony, city analyst, maintained that the milk was 12 per cent. deficient in quality, while Mr. T. Farrington, F.I.C., swore equally positively that the sample was well over the mark laid down for pure milk. The Bench decided to send on the whole case to Somerset House, and be guided by the result.

MR. THOMAS W. ROBINSON, M.P.S.I., director of the pharmaceutical concern of Messrs. Hayes, Conyngham and Robinson, Limited, Dublin, has been appointed to the Commission of the Peace for the Township of Kingstown. Mr. Robinson is stated to be the youngest magistrate in Ireland.

PHARMACEUTICAL SOCIETY OF IRELAND.—At an evening meeting of this Society, on Monday last, Mr. W. F. Wells, ex-President, occupied the chair, and there was a large attendance of members and their friends to hear a most instructive and interesting lecture by Mr. A. Forbes Watson, B.Sc., a recently appointed examiner of the Society, on "The Germination of Barley." The lecture was a study in the localisation of enzymes, and after handing round a number of cases filled with barley in various stages of growth, Mr. Watson proceeded to give a general account of what the enzyme of barley consists, and how it is prepared.

WELSH NEWS.

PHARMACY LAWS AND THE WELSH GROCERS.—The suggested proposals to amend the Pharmacy Acts have been the subject of some severe criticism on the part of the members of the Pontypridd Grocers' Association. At a meeting just held the Chairman (Mr. J. Prothero) called attention to the matter, and read remarks bearing on the question which had appeared in the trade organ, the *Grocer*, from the pen of Mr. Giles, the secretary of the Grocers' Federation. The Chairman, continuing, said that in view of the publicity given the matter, it behoved them all to be on the alert. Every grocers' association should take the matter up, as it was one which affected the whole trade. Should legislation be made on the lines suggested the results might be serious.—In the course of the discussion which followed, Mr. G. Davies said he quite concurred with the Chairman that attention should be directed to the matter. — The Chairman said he would suggest that the Federation of Grocers should be asked to oppose the Bill when introduced.—Mr. G. Davies pointed out that so far the Bill, for aught they knew, had not been drafted, and therefore they could hardly ask the Federation to oppose it.—The Chairman then moved a resolution calling upon the Parliamentary Committee to watch the measures proposed dealing with the Pharmacy Acts, and to take immediate steps, if necessary, in the interests of the grocery trade. He pointed out that any number of articles would have to be relegated to the chemists exclusively if the proposals suggested by Mr. Giles were to be acted upon. Why, even common salt contained a certain percentage of poison *(sic)* if they were to analyse it. It was bad enough that they should be prohibited from selling such harmless things as fly-papers, etc., without going further on the lines suggested.—Mr. Davies said he had much pleasure in seconding the Chairman's proposition.—Mr. Harris said it was a very drastic proposal.—Mr. Horton, Mr. Evans, and others having spoken, the resolution was unanimously carried. It was also decided to call the attention of other associations to the question.

Partnerships Dissolved.

(From the London Gazette.)

H. J. W. Sleigh and Edwin Habgood (trading as the Clifton Rubber Co.), 1, New Union Street, Moorfields. Debts will be received and paid by H. J. W. Sleigh, who will carry on the business.

Thomas Fish and C. A. B. Garnett, Mineral Water Manufacturers, Middlesbrough, so far as regards Thomas Fish.

James Wood and Geo. E. Swindells (trading as James Wood and Co.), Chemical Manufacturers, Gorton, Manchester. Debts will be received and paid by James Wood, who will carry on the business.

Receiving Order in Bankruptcy.

(From the London Gazette.)

John W. G. Sellon, Medical Practitioner, 97, Northam Road, Southampton.

MARKET REPORT.

The quotations here given are in all cases the lowest ca h prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

March 2, 1899.

Business has been fairly active during past week, the chief excitement having centred in Quinine and, in consequence, naturally in Cinchona Bark, the auctions of which latter article took place in London this week, when decidedly higher prices were again paid, while the value of Quinine has also futher advanced considerably; otherwise there are no changes of any particular importance to report. Bromides and Iodides are unchanged. Opium and Morphia quiet. Codeia steady. Quicksilver not quite so firm. Mercurials unchanged. Glycerin quiet. Camphor without change. Cod-liver Oil the shade firmer. Sulphate of Ammonia dearer. Acid Citric and Tartaric quiet. Cream of Tartar firm and rather dearer. Borax and Acid Boracic steady. Acid Carbolic firm. Sulphonal and Phenacetin steady, while Acetanilide is expected to be dearer. The following are the ruling prices for some articles of chief interest:—

Acetanilide.—There are rumours that an advance in price is impending. The combined makers, however, still quote 11d. per lb. for 5-cwt. lots up to 1s. 2d. per lb. for smaller quantities. In view of the present very low price, buyers can hardly be wrong in laying in a good stock, and the more so in that any change will almost certainly be in an upward dircction.

Acid Boracic—Steady at unchanged values, say, 26s. per cwt. for *crystals*, and 28s. per cwt. for *powder*.

Acid Carbolic—In good demand at very steady prices, viz., 6⅝d. to 6¾d. per lb. for 35-36° *ice crystal* in 2½ cwt. drums and overcasks; 7⅛d. to 7¼d. per lb. for the 39-40° *ice crystal*; and 8¼d. to 8½d. per lb., according to packing for the 39-40°, *detached crystals* (B.P. quality). *Crude*, 60 °F., 2s. 1d. per gallon; 75° F., 2s. 6d. per gallon. *Liquid*: 95 98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, in 40-gallon casks.

Acid Citric—Is very quiet, price being nominally unchanged at 1s. 4d. per lb.

Acid Oxalic.—Very quiet at 3d. to 3½d. per ton nett, free delivered here.

Acid Tartaric—Quiet, but steady at 1s. 1d. per lb. for *English* and 1s. 0¼d. per lb. *c.i.f.* for *foreign*.

Ammonia Compounds.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to packing, etc. *Iodide*: 14s. 3d. per lb. *Muriate*: White, free from metals 25s. to 27s. 6d. per cwt. Chemially pure small crystals 30s. to 32s. 6d. per cwt., *Sal ammoniac*: Crushed for batteries, firsts 37s., seconds 35s. per cwt.; sublimed firsts 35s., seconds 33s. per cwt. *Sulphate*: Dearer. Grey 24 per cent., London, £10 6s. 3d. to £10 7s. 6d. per ton. Hull prompt, £10 5s. to £10 6s. 3d.; Leith prompt, £10 6s. 3d. to £10 7s. 6d. Beckton, £10 5s.; Beckton terms, £10 2s. 6d. per ton. *Sulphocyanide*: 1s. to 1s. 2d. per lb., according to quantity, etc.

Antimony.—*Regulus* is quoted £38 per ton, while the *crude Japan* (black sulphide) is rather easier at £23 per ton on the spot, landed terms, and £20 15s., per ton, *c.i.f.*, for 10 ton lots.

Borax—Is firm, the makers still quoting 16s. 6d. per cwt. for *crystals*, and 17s. per cwt. for *powder*.

Bromine and Bromides—Are steady and without change.

Buchu Leaves.—There has been a very good inquiry for these since the last auctions, and good green round leaves have been sold at 6¼d. to 6½d. per lb. The latter price being now asked by second-hand holders.

Camphor.—Market both for *crude* as also *refined* remains steady at about the values given last week for *crude*, price of *refined* being also unchanged.

Cascara Sagrada—Is quiet, demand having fallen off. There are sellers at 35s. to 40s. per cwt., according to age and quality. The position, however, is very strong, and should America have to draw further supplies from this market, as thought probable, a further decided rise may take place later on in the year.

Chaulmoogra Oil—Remains very scarce, and holders ask 2s. 6d. per lb. for single case lots.

Cinchona Bark.—The advices which have come to hand, showing that the Java shipments for February are small and much less than last year, have tended to further considerably improve the tone of the market. At the London auction—the second of the series—which was held yesterday, the moderate supply of 2608 packages of all descriptions was offered, against 1909 packages at the previous sale. A strong demand prevailed and about two-thirds sold, the bought-in lots being held for extreme rates. Much higher prices were obtained, which showed an advance of fully 10 per cent. on the previous Dutch auctions, and 50 per cent. on the London sales in January, the average unit being 1⅜d. to 1⅞d., against 1⅝d. to 1d. last sale. *Java*: 380 bags and 40 bales offered and sold, Ledger, natural stem chips fair to good rich at 4⅞d. to 8¾d., branch at 3⅝d. to 6¼d., root at 5½d. to 7½d. *South American*: 42 bales Bolivian cultivated Calisaya quill offered and sold, good at 7⅝d. 6 bales flat Carthagena bought in at 5d. 140 bales Cuprea of old import offered and 54 bales sold at 1⅞d. to 2d. 6 serons soft Columbian bought in at 3¼d. *African*: 235 bales offered and sold, quill at 5⅝d. to 6⅝d., broken quill and chips at 5⅜d. to 6⅝d., with a few lots at 6¾d. to 7¼d. *Ceylon*: 443 bales offered and 335 bales sold, according to analysis. Succirubra, stem chips at 3d., renewed ditto at 3⅜d. to 4⅝d., good root at 4d.; Officinalis, chips and shavings, good renewed at 4¼d. to 5¼d.; all other descriptions, good Ledger stem chips at 6⅝d., ditto Hybrid renewed at 4⅝d. *East Indian*: Of 1241 bales and 55 cases offered 794 bales sold. Red, chips and shavings at 3¼d. to 4¼d.; renewed ditto, fair to good rich at 4⅞d. to 6⅛d.; Officinalis, stem chips and shavings, fair to good at 4⅛d. to 5⅛d., low at 1⅝d.; renewed ditto, ordinary to good rich at 3⅛d. to 6¼d.; other kinds, Ledger chips, fair to good at 3¼d. to 6¾d., Hybrid at 3⅝d, good Ledger root at 5⅛d.

Cloves.—Privately *Zanzibar* quiet but steady, business done comprising March to May and April to June deliveries at 3 3/32d. No *Zanzibar* offered at auction, and of 91 cases *Penang* offered only 2 cases sold, fair picked at 7½d. 2 bags *fair Seychelles* also sold at 3¾d.

Coal Tar Distillation Products.—*Toluol*, crude, 1s. per gallon; pure, 1s. 4d. per lb. *Benzole*: very dull at 8d. per gallon for both the 50 and 90 per cent. *Creosote*: 3¼d. per gallon. *Crude Naphtha*: 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160°C., 1s. 6d. per gallon; 90 per cent. at 160°C., 1s. 3d.; 90 per cent. at 190° C., 1s. 3d. per gallon. *Anthracene*: A, 3½d. per unit; B, 2½d. per unit. *Pitch*: 25s. per ton *f.o.b.* *Tar*: Refined, 12s. per barrel, 2⅛d. per gallon; crude, 12s. per barrel, 2⅛d. per gallon.

Codeia—Is firm and in good demand at 12s. 6d. per oz. for the *pure* and 1s. per oz. less for the *salts*.

Cod-Liver Oil—Steady to slightly firmer at unchanged prices, viz, 62s. 6d. to 65s. per barrel, ex-warehouse here for best noncongealing 1898 *Norwegian oil*, and 65s. per barrel *f.o.b.* for the new oil.

Cream of Tartar—Very firm and again dearer at 76s. per cwt. for first white *crystals*, and 78s. to 80s. per cwt., according to percentage, for *powder*.

Euonymus Bark—Has become very scarce in New York, and from 8½d. to 10½d. per lb. is asked there. Here the article is also scarce, and it is doubtful if any could be obtained below 9d. per lb.

Ginger.—*Cochin* is dull, the large supply of 1151 packages being offered and only 196 packages sold. Of cut kinds, 117 packages found buyers; bold, some medium scraped and rather roughly cut at 80s.; bold and medium scraped, but wormy, 61s; small scraped, 35s.; wormy ditto, 24s. 6d.; small and medium, very wormy, 20s. 6d. to 21s. 79 bags rough sold, medium and small dull, without reserve, at 23s.; ditto, dull wormy at 19s 6d.; cuttings, fair but wormy, at 17s. Of *Jamaica*, 104 barrels offered; all found buyers. Extra bold hard at 90s. 6d.; good bold at 82s.; fair to good medium at 67s. to 77s. 6d.; ordinary to good ordinary at 58s. to 64s. 6d.

Golden Seal Root—Continues very scarce, both here and in New York. On the spot 2s. 9d. per lb. is asked, whilst in New

York the equivalent of 2s. 7d. to 2s. 10d. per lb. is asked, according to holder.

GLYCERIN.—*Crude* is quiet but steady at unchanged prices. Same may be said of the *refined* article, the best white double distilled chemically pure 1260° quality, in tins and cases, being quoted 52s. 6d. to 55s. per cwt. for *English* and 55s. to 60s. for *German*, according to quantity and brand.

IODINE AND IODIDES—Firm at unaltered prices.

IPECACUANHA.—There has been nothing doing in this article, although there has been some pressure to sell, owing probably to the knowledge of an arrival which has just come in of about 70 bales of *Rio*.

MERCURIALS.—Makers' prices are unchanged at 2s. 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive Sublimate*.

MORPHIA.—Very quiet as regards fresh business, makers are, however, busy executing orders against existing contracts. For quantity it is probable that 4s. 6d. per oz. would be accepted by the makers for the *Hydrochlorate salt* in *powder*, although it is stated that this price would certainly show them no profit, as against actual present cost of manufacturing qualities of opium.

NUX VOMICA—Is wanted, but no supplies are coming forward and long prices are now asked for the small stock here.

OILS (ESSENTIAL).—*Star Aniseed* is very dull of sale, and quotations are quite nominal at 5s. 11d. to 6s. 1d. per lb. as to quantity. *Cassia* is also slow of sale, 5s. per lb. being the nominal quotation for 80 to 85 per cent.; 4s. 9d. per lb. for 75 to 80 per cent., and 4s. 6d. per lb. for 70 to 75 per cent. *Citronelle* is quiet, but holders are inclined to ask more money. *Cinnamon Leaf* unchanged at 2d. per oz. *Lemongrass* quiet, at 2⅞d. *Peppermint* is generally very dull of sale, this applying to all qualities and descriptions. *Santal Flav.*, English, is quoted 12s. per lb. *Clove*, 2s. 9d. per lb. *Cubeb* quiet at 4s. per lb.

OILS (FIXED) AND SPIRITS.—*Linseed* quiet. London spot pipes, £17 5s.; barrels, £17 15s. per ton; March-April, £17 15s.; May-August, £17 5s. to £17 7s. 6d.; September-December, £17 to £17 2s. 6d. Hull spot, naked, £17 2s. 6d.; March-April, £16 17s. 6d.; May-August, £16; September-December, £15 15s. per ton. *Rape* firm. Ordinary brown spot and March-April, £21 5s. per ton. Ravison, naked, spot, March-April and May-August, £17 5s. *Cotton* quiet. London crude spot, £14; March-April, £14 2s.; May-August, £14 12s. 6d. per ton. Refined spot, £15 10s. to £16, according to make. Hull easier, refined naked, spot, and March-April £14; May-August, £14 10s. Crude spot, £12 17s. 6d.; March-April, £13; May-August, £13 7s. 6d. *Olive*, Spanish, £30 to £32 per ton, Mogador, £29 to £32. *Coco-nut* firmer for forward. Ceylon spot £25 15s. to £26 per ton, landed terms. February-April, and March-May shipment £24 10s., *c.i.f.* Cochin, spot, spot, £29 to £29 10s. landed terms. February shipment, £26 15s. March-May £26 to £26 5s. per ton, *c.i.f.* *Palm*, *Lagos*, spot, £24 per ton. *Lubricating*: Pale American spot 5s. 6d. to 7s. per gallon, Russian black 4s. 6d. to 5s.; pale, 7s. to 8s., per gallon. *Petroleum* firm, Russian, spot, 5d. to 5¼d. per gallon, American, spot, 5⅛d. to 5⅞d., water white 7⅛d. per gallon. *Petroleum Spirit*: American 8½d., deodorised 9d. to 9¼d. gallon.

CASTOR OIL—Is quiet and unchanged.

OPIUM—Is quiet, but steady at about the prices quoted last week, the future course of the article now depends, first, upon demand, and, secondly, upon the yield of the new crop, about which latter there will probably be more definite information forthcoming before very long.

PHENACETIN—Is very quiet at unchanged price, say, 3s. 9d. to 4s. 3d. per lb., according to quantity and packing, for both *crystals* and *powder*, while Bayer's make is quoted 6s. 1d. per lb., and Riedel's 5s. 5d. per lb., in 1 lb. original bottles.

POTASH COMPOUNDS—*Bicarbonate*, 30s. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10d. per lb. *Chlorate Crystals*, 3¾d., *powder*, 4d. per lb. *Iodide*, 10s. 6d. per lb. *Oxalate*, neutral, 5d. to 5½d. per lb. *Permanganate*, small crystals 52s. 6d., large crystals, 57s. 6d. per cwt. in 1 cwt. kegs. *Prussiate*: *Yellow*, English, 7¾d. to 8d. per lb. *Red*, 1s. to 1s. 2d. per lb., according to quantity, etc.

QUICKSILVER.—Importer's price remains £8 5s. per bottle, the second hand asking 1s. to 1s. 6d. per bottle less money.

QUININE.—The market has been again excited. On Saturday the chief German makers stopped selling at 1s. 2d. per oz., declining orders thereat, or at any price, and on Wednesday their price was further advanced to 1s. 3d. per oz. for 1000 oz. lots in 100 oz. tins, at which price, however, they decline to sell, except in quite limited quantities, and to regular customers only. From second hand there has been much speculative buying, up to 1s. 3½d. per oz. for *B. & S.* and for Brunswick for May delivery, market closing very firm. Those of our readers who noted the suggestions thrown out in this market report as to the probable early future course of the article, and acted promptly thereon, will now have cause to congratulate themselves upon their having done so. It is confidently stated in some quarters that the rise in price of the article has only commenced.

SENNA.—*Tinnevelly* is very scarce, and the steamer "Shannon," due here on the 5th inst., brings no further supplies. At to-day's auctions, 120 bales, all of low spotty quality, were offered, this comprising the whole of the first-hand stock. The London stock on the 1st inst. had fallen to 1142 bales of all varieties and qualities, the deliveries during February exceeding the arrivals by 200 bales. The 120 bales in auction realised 2d. to 2¼d. per lb. for yellowish spotty small leaves, and 1d. to 1¾d. per lb. for brown to brownish leaves. Market on these figures may be considered unchanged. *Alexandrian* leaves of good quality are scarce, and no business has been done in the lower qualities of which the stock is made up.

SODA COMPOUNDS.—*Crystals* quiet but steady, at 55s. per cwt., in barrels, and 52s. 6d. per cwt. in bags, *ex*-ship Thames. *Ash*: unchangeable at £5 to £5 10s. per ton, according to percentage. *Bicarbonate*: 97 per cent., £7 10s. to £8 10s. per ton, while the fully bicarbonated quality is quoted 18s. 6d. to 20s. per cwt. *Bichromate*: 2¾d. per lb. *Bromide*: 2s. 1½d. per lb. *Caustic*: white, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. per ton. *Hyposulphite* (Antichlor.): 6s. 6d. to 8s. 6d. per cwt., according to packing, etc. *Iodide*: 11s. 10d. per lb. *Nitrate:* Commercial, £7 17s. 6d. to £8 per ton; *refined*, £8 2s 6d.

SPICES (VARIOUS). — *Black Pepper*: None offered. *White Pepper*: Of 388 bags Singapore, 51 bags sold at 9½d. to 9¼d. *Chillies*: 20 cases Japan bought in at 40s., and 28 bales damaged Zanzibar at 33s. *Cinnamon*: 3 bales Ceylon sold at 8d. *Cinnamon Chips*: 15 bags Ceylon bought in at 3¾d. *Cassia Vera*: 60 bales bought in at 36s. *Mace*: 5 cases Penang sold, fair pale reddish little wormy at 1s. 7d., pickings 1s. 2½d. to 1s. 3d.; 10 cases West India sold, fair to good reddish at 1s. to 1s. 7d., pickings at 1s. 3d. to 1s. 4d. *Pimento* rather dearer: of 457 bags offered, 124 sold at 4½d. to 4¾d.

SULPHATE OF COPPER—Is quoted £23 10s. to £25 10s., according to make, etc., for spot delivery.

SULPHONAL.—Makers' price is 17s. per lb., with an allowance of 9d. per lb. for 4 cwt. contracts. Quantity available from second hand has now become quite limited, anything offering below above figure being at once snapped up.

TARAXACUM ROOT—Is easier, but a good business has been done this week. *Foreign* root is quoted 37s. 6d. per cwt., and *English* at 45s. per cwt.

VANILLA.—At to-day's auctions nearly 1300 tins were offered, *Seychelles* variety forming the great bulk. These sold at about last rates, 7 to 7½ inches realising 23s. 6d. per lb.; 6 to 6½ inches 22s. per lb.; 5½ to 6 inches, 21s. to 22s. per lb.; 3 to 4½ inches, 19s. to 19s. 6d. per lb. *Mauritius* beans realised up to 24s. 6d. per lb. for 7 ½ to 8 inch. *Tahiti* beans were in small supply, and, after some hesitation, the whole were cleared at 10s. 6d. per lb., an advance on last sales' rates. A parcel of about 350 lb. imported from Marseilles caused some comment, as they appeared to be Tahiti beans retied and with the ends dipped in some solution to give the appearance of Bourbons, with a few apparently vanillin crystals thrown over to help the local colouring. They did not sell.

Liverpool Market Report.

MARCH 1, 1899.

Business has been good during the week, with a firm tone characterising the quotations for most staple articles. Both Beeswax and Carnauba Wax have been cleared off in considerable amount and at good figures, the price of the latter being higher for the "yellow" in particular. In Oils higher prices are asked for Linseed and Cottonseed, but an easier feeling is noticeable in Castor. Chemicals are without any great change and are quiet.

AMMONIA SALTS.—*Carbonate* is firm at 3d. per lb. *Sal ammoniac*, 33s. to 35s. per cwt. *Sulphate*, dearer, £10 3s. 9d. to £10 5s. per ton.

BEESWAX.—24 bales of Gambia sold for £6 12s. 6d. per cwt., and 5 sacks of Chilian at £7 5s. to £7 15s. per cwt.

Canaryseed—Is quiet, and Turkish still quoted at 26s. 6d. to 27s. per 464 lbs., but transactions are only retail in character.

Copperas.—37s. per ton for Welsh, and 39s. for Lancashire.

Copper Sulphate—Is a turn easier in price from a decreased demand, £23 17s. 6d. to £24 per ton.

Honey.—25 cases of good Californian fetched 40s. per cwt.

Linseed.—River Plate seed, forward lots, were easier early in the week and 300 tons 4 per cent. February shipment sold for 34s. 6d. per 416 lb., but the same figure has been refused for 500 tons same description.

Oils (Fixed) and Spirits.—*Castor* is somewhat slow in demand, and French is easier at 2⅞d. per lb.; Calcutta, 2⅝d.; and Madras, 2¾d. per lb. *Olive* of Spanish origin is still quoted at £31 10s. to £32 per tun. *Linseed*: Liverpool pressed in export casks is held for the improved price of 19s. 3d. to 19s. 6d. per cwt. *Cotton-seed* has experienced several small but rapid rises, and now stands at 16s. 6d. to 17s. per cwt. for best Liverpool refined in export barrels. *Spirits of Turpentine* are in quiet demand at 33s. per cwt. for spot barrels.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate*, 3½d. to 3¾d. per lb. *Cream of Tartar* is quiet at 71s. to 75s. per cwt. *Pearlashes*, 33s. to 34s. per cwt. *Potashes*, 24s. per cwt. *Saltpetre*, 22s. per cwt.

Quillaya Bark.—Sales of Chilian *ex-quay* are reported at £16 per ton.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax* is firm at £16 to £16 10s. per ton. *Caustic*, 76 to 77 per cent., £7 15s. per ton; 70 per cent., £7 per ton. *Crystals*, £3 per ton. *Nitrate* is firm and higher in price, viz., 8s. to 8s. 3d. per cwt.

Manchester Chemical Report.

March 1, 1899.

There is a fair amount of business passing, both in heavy and miscellaneous chemicals, though in the latter the upward movement has been checked. The price of the metal having receded somewhat has caused an easier feeling in Sulphate of Copper, and the price ranges from £23 15s. to £25 per ton, delivered Manchester. Recovered Sulphur is firm at £4 12s. 6d. to £5, according to delivery. Brown Acetate of Lime is lower and is quoted £5 per ton *c.i.f.* forward delivery, though for prompt £5 5s. is generally asked for both Welsh and American. Saltcake is rather higher at 30s. to 32s. 6d. per ton in bulk on rails. Arsenic is easier at £16 10s. per ton, on rails, Garston. Yellow Prussiate is scarce at 7⅞d. to 8d., and there is an upward tendency. Acetate of Soda is in better demand at late rates. Chlorate of Potash dull at 3½d. to 3¾d. Naphthas are easier, but Benzols a trifle firmer. Sulphate of Ammonia closes better. The oil traffic on the Manchester Ship Canal continues to improve.

Newcastle Chemical Report.

March 1.

Bleaching powder on this market is rather scarce and somewhat more firmly quoted. Soda crystals are moving with more freedom. Quotations are:—Bleaching powder, £5 5s. to £5 10s.; soda crystals, 45s. to 47s. 6d., according to market; soda ash, £4 5s.; caustic soda, 70 per cent. basis, £7 5s.; alkali, 40 per cent., £4 10s. to £5; sulphur, £4 15s. to £5 per ton.

EXTRACTS FROM CONSULAR REPORTS.

The Drug and Medicine Import of the Hawaiian Islands for the year 1897 amounted to 55,962 dols. from the United States of America, and 21,971 dols. from other countries. Great Britain's contribution towards the latter amount was 8086 dols., while China contributed 8852 dols. The duty payable on all drugs and medicines is at the rate of 10 per cent., except in the case of a few unimportant articles, which pay 15 per cent. Opium is only admitted in the shape of pills and other preparations, or when imported by the Board of Health, but it is believed that large quantities are smuggled into the islands for the use of Chinese smokers. The import of medicinal opium was only 1498 dols., of which 1356 dols. came from China.

Apothecaries' Weights in Naples.—Reporting on the trade of Naples and district for the year 1898, Consul Neville-Rolfe remarks that everyone is not inclined to support the British system of weights and measures, either on logical or practical grounds, but one of the chemists in Naples, a German by nationality, though holding a British diploma, was recently somewhat surprised when his British weights were forcibly seized and removed from his shop by two police officers. It appears that amongst other taxes collected in that city is one called "Portolania," a tax levied on tradesmen for their shop-fronts. In this particular instance the amount paid is 162 lire per annum, which is paid mainly with a view of having a large shop-front upon which to display in good-sized letters the announcement that at this pharmacy prescriptions are made up according to the British Pharmacopœia. This obviously assumes the use of British weights and measures, and it may also be assumed from the writer's remarks, although he does not directly say so, that the use of such weights in Naples is illegal, hence, no doubt, the action of the police.

In Such a Delicate Matter as the weighing of drugs and the making up of prescriptions, many of which contain powerful poisons, Consul Neville-Rolfe goes on to say, very great accuracy is naturally required, and "it will hardly be believed that to weigh one English grain, equal to 0 0648 metric gramme, five weights are required." It is, he thinks, clear that to work out the arithmetical problem of reducing an ordinary British prescription into French weights is in itself a troublesome matter, but to weigh it out with French weights is worse still. Such a regulation, he is of opinion, must lead to grave mistakes in dispensing, and chemists ought, therefore, to be exempted from the general law.

English Hemp Growers are warned by Consul Neville-Rolfe that Italian hemp has been attacked by a fungus closely allied to the "peronospora" of the vine. It first appears on the lower side of the leaves which, when attacked, turn yellow and fall. Strong land abounding in "humus" seems to be the most favourable for its development, hence the greater danger of its spreading in England. Farmers are asked to be very careful that their hemp seed does not come from infected districts, and if in doubt as to the source of the seed it should be treated with a solution of sulphate of copper, which, while it does not interfere with the germination, is a useful precaution against most parasites.

Tartaric Materials exported from the Calabrias during the season ranging from October, 1897, to September, 1898, amounted to 9953 tons, valued at £368,640, as against 9342, value £366,500, the previous season. Half-refined tartar was chiefly exported to Great Britain and Germany, Vinaccia argols to Great Britain and the United States, crude argols to the United States, and wine lees to Great Britain.

Obituary.

Conacher.—On February 17, David Conacher, Pharmaceutical Chemist, Glasgow. Aged 73. Mr. Conacher had been a member of the Pharmaceutical Society since 1853.

Greenville.—On February 19, from hæmorrhage, Ernest Gould Greenville, Chemist and Druggist, Ryde, Isle of Wight. Aged 27. Mr. Greenville was for some years an Associate of the Pharmaceutical Society,

Jubb.—On February 23, Nathaniel Jubb, Chemist and Druggist, late of Skirbeck, Lincs. Aged 29. Mr. Jubb, who was one of the English chemists' assistants on the Riviera, being engaged at the Pharmacie Süe at Nice for the season, died at midnight on Thursday, the 23rd ult., of hæmorrhage of the lungs. He had not been in the best of health throughout the season, but, being plucky, he had not absented himself from the pharmacy until within thirty-six hours of his end. Unfortunately, none of his English *confrères* knew that he was seriously ill, or they would have been pleased to render him any service, but Mr. Kurz, his German colleague, gave him every attention that his leisure would permit. The interment took place on Saturday at the Nice English Cemetery, the service being performed by the Curate of the English Church, and attended by twelve of his *confrères* and other friends. Mr. Jubb was formerly with Messrs. Hooper, of Pall Mall, and Mr. White, of Buckingham Palace Road. The death was the more sad from the fact of it occurring so far away from home and all his friends.

Calendar for the Week.

Sunday, March 5. 3rd in Lent. Sun rises 6.39; sets 5.45.

Monday, March 6. Sun rises 6 37; sets 5.47.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Town Hall, at 8.30 p.m.—General meeting for election of officers.

Tuesday, March 7. Sun rises 6.35; sets 5.48.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Professor E. Ray Lankester on "The Morphology of the Mollusca."

Wednesday, March 8. Sun rises 6.33; sets 5.50.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 p.m.—Open Meeting. Notes and Queries by W. B. Cowie.

MIDLAND CHEMISTS' ASSISTANTS' ASSOCIATION, Birmingham.—"An Hour with the Polarimeter," by F. H. Alcock.

MANCHESTER PHARMACEUTICAL ASSOCIATION, Chemical Club, Victoria Hotel.—Lecture on "The Alps of the Caucasus," by Hermann Woolley.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION, Hotel Métropole, at 8 p.m.—Discussion on the Federation Circular, and a paper by F. R. Dudderidge, entitled "Laboratory Notes."

SHEFFIELD PHARMACEUTICAL AND CHEMICAL SOCIETY, New Surrey Street, at 8.30 p.m.—Mr. G. Ellinor will read a paper on "Patent Medicine, Stamp Licence, and Anomaly."

Thursday, March 9. Sun rises 6.30; sets 5 52.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—"The Chemistry of Gout," by A. P. Luff. Also a demonstration of a method of determining Uric Acid.

GLASGOW AND WEST OF SCOTLAND PHARMACEUTICAL ASSOCIATION, 94, West Regent Street, at 9 p.m.—Short papers by members.

MIDLAND PHARMACEUTICAL ASSOCIATION.—A Smoking Concert will be held instead of Dr. Leedham-Green's lecture, which is postponed until April 10.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION.—The members of this Association are invited by Councillor James Law to visit the Blackburn Sewage Works and Gas and Electricity Works, and to meet him at the White Bull Hotel at 2 p.m.

Friday, March 10. Sun rises 6.28; sets 5.54.

ABERDEEN JUNIOR CHEMISTS' ASSOCIATION, North Silver Street Hall, at 9.30 p.m.—Debate on "Which is the Best Sport?"

CAMBRIDGE PHARMACEUTICAL ASSOCIATION, at 9.15 p.m.—Lecture by Professor J. Reynolds Green, on "The Nervous System in the Vegetable World."

ROYAL INSTITUTION, Albemarle Street, W., at 9 p.m.—Professor H. L. Callendar on "Measuring Extreme Temperatures."

Saturday, March 11. ● 7.53 A. Sun rises 6.26; sets 5.55.

ROYAL INSTITUTION, at 3 p.m.—Lord Rayleigh on "The Mechanical Properties of Bodies."

Advertisements.

(Received too late for Classification).

FOR immediate disposal, in good neighbourhood, together or separately, a high-class Dispensing BUSINESS. Prescriptions average over 100 a week, net profit £350. Also a good class Retail and Dispensing BUSINESS, net profit £160. Suit man used to first-class trade. Fullest investigation. Vendor taking larger business. Apply, A. P., care of Messrs. Jas. Woolley, Sons & Co., Manchester

THE LONDON THROAT HOSPITAL, 204, Gt. Portland St., W.—Wanted immediately, a Lady DISPENSER. Minor qualification necessary. Hours of attendance after 1 o'clock. Commencing salary £50 per annum. Applications, stating age and experience, with copies of testimonials, to be sent to the SECRETARY.

DURBAN, Natal.—Qualified ASSISTANT wanted. Young man, good appearance, quick and accurate dispenser. Salary £150 first year, £165 second, £180 third. Room supplied, but not board. Second class passage paid. 3 years' agreement to be signed. Apply, with full particulars, to E. M., care of "Pharm. Journal," 5, Serle St., W.C.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Pure English Honey in 28 and 30 lb. tins, 5½d. per lb., sample 2d.—Heath, Hertford House, Clarence Road, Teddington.

Magic Lanterns, second-hand; triples and biunials; oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

Tetlow's Powder.—15 dozen Gossamer, 20 dozen Swansdown, good condition.—Offers to H. Woodward, 78, Yorkshire Street, Rochdale.

For immediate Disposal, the entire fixtures and fittings of a Chemist's Shop at Hanley (Staffs.), including counter cases, window fittings, shop rounds, etc. The fixtures are nearly new and in perfect condition, and have been made by J. Curtis and Son, of Leeds.—Apply, Thompson, 192, Manchester Street, Oldham.

WANTED.

Camwal ordinary, Sanitas, Idris Co. preference shares.—Thornley, High Street, Ilfracombe.

'Pharmaceutical Journal,' October 12, 1895. Full price will be paid for clean and complete copies by—The Publishers, 'Pharmaceutical Journal,' 5, Serle Street, London, W.C.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Camera, a No. 4 cartridge Kodak.—Short, 95, Great Saffron Hill, London.

Wanted, a copy of the London Pharmacopœia.—State price to Goodall, Backhouse and Co., Leeds.

SEVENTH EDITION, 1s., cloth gilt, post free.

BRITISH PHARMACOPŒIA

1898

FORMULÆ AND PROCESSES—ALTERATIONS, ADDITIONS AND OMISSIONS.

Together with Complete Alcohol Conversion Tables.

A synopsis of the formulæ and processes of the new B.P., with full working details, showing all the changes at a glance, and enabling pharmacists to make the whole of the B.P. preparations.

London: PHARMACEUTICAL JOURNAL Office, 5, Serle Street, Lincoln's Inn, W.C.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Aickin, Amoore, Austen, Bartlett, Beedle, Bell, Blakemore, Breeze, Brunt, Campkin, Charles, Claque, Cooke, Davis, Donald, Dowzard, Dunsire, Flux, Forster, Fothergill, Gifford, Gilderdale, Gunstone, Hellens, Hill, Hobbs, Hodan, Hooper, Hornby, Horsfield, Humphreys, Hyman, Johnson, Leamer, Lewis, Long, Lothian, McKinnon, Marston, Midgley, Mullenger, Muyler, Nursaw, Parker, Powell, Rawling, Reynolds, Roe, Rogers, Rouse, Sankey, Simons, Shanahan, Sinclair, Skinner, Smith, Taylor, Thompson, Toone, Vernon, Watkins, Wardleworth, Watts, Williamson.

ENGLISH NEWS.

The 'Universal Provider and Shopping News', is a new publication which appears likely to fill a useful place in the world of journalism, and it is interesting to note that pharmacy receives a considerable share of attention in its pages. As an example of its critical style, the following, by the writer of a column headed "Tattle," cannot well be improved upon:—"I see our esteemed contemporary, the *Chemist and Druggist*, has reached that old age period when the taking of portraits is said to become a passion, so last Saturday witnessed a special display of pen, pencil, and photographic skill, duly punctuated and elaborated for the benefit of its readers. It is very well done, and as a specimen of the 'greatest show on earth' kind of advertising it certainly ought to please those for whom it is intended. As an extravaganza founded on the 'formula' of 'our own dispenser' it is strikingly humorous, verbose, and exceedingly romantic. Past and present are dilated upon in terms which leave 'no possible manner of doubt,' but the prophetic utterances as to the future form the cream of the story. The 'good old *Ironmonger*'—which, to be accurate, at present occupies one-half of the premises—is coolly relegated to a very secondary place, and will shortly be asked to leave altogether and find a home somewhere else. In fact, judging from the inflated gush and expanded egotism of the editorial department the top-heaviness of success appears to have very seriously affected its ordinary mental balance. Other interpretation is hardly possible, seeing that so much of the prestige has been won by the incessant push and ceaseless energy of the publishing department. Then again the pictures; yes, the pictures, especially that one where the back of the premises is fringed by the 'silvery Thames,' and the front is covered with letters, which in reality do not exist. I notice, also, the photographer has been very inclusive, but there! that is a mere detail. After such grandiloquent prophetic utterances we can expect nothing less than to see St. Paul's Cathedral a branch establishment of the *C. & D.*, and the river Thames scheduled as a bathing place for its staff. I shall await with some interest the appearance of the same pictures in the *Ironmonger*, with the text re-arranged to suit a fresh set of readers. What will happen to the great original then?"

North of England School of Chemistry and Pharmacy.—The students of this school had a most enjoyable outing to Morpeth on Saturday, February 25. By kind permission of Mr. Airth, a visit was first paid to the gasworks, where all the processes for the manufacture and purification of coal gas and preparation of ammonium sulphate were shown and fully explained by Mr. Airth, jun. On the motion of the Principal, Mr. F. R. Dudderidge, seconded by Mr. T. E. Wilson, Demonstrator, a hearty vote of thanks was accorded to these gentlemen. The party then proceeded to view the greenhouses of Edward Hopper, Esq., whose magnificent collection of rare and valuable orchids called forth great admiration. Fine specimens of anthurium, banana, croton, orange, and peach, the latter in full bloom, were also noticed. The day's proceedings were terminated by a substantial tea. Another equally interesting trip took place on the following Tuesday, when by the kindness of the manager of Messrs. Palmer and Co., the students were conducted through their immense establishment at Jarrow-on-Tyne by Mr. A. T. Bill. Here the manufacture of pig-iron was shown at the blast furnaces, followed by its conversion into steel by the Siemens-Martin process, the tapping of the molten metal at a white heat into the ladle and subsequent running into ingot moulds being watched with the greatest interest. The rolling and shearing of steel bars and plates was also seen, and the processes of steel analysis fully shown and described in the laboratory. Mr. Bill was heartily thanked at the conclusion of the visit.

A Child's Fatal Mistake.—The Leeds Deputy Coroner held an inquest on Friday, February 24, on the body of William Colley, 23 months old, whose parents live at 11, Royds Hall Road, Beeston. On Wednesday afternoon the deceased, along with some other children, went into a yard adjoining Messrs. J. Haigh & Co.'s dye-works to play. Whilst there little Colley picked up a small pot, which was used in the dye-works for measuring sulphuric acid, and it appears to have contained a small quantity of the acid. He was afterwards found by a woman, who noticed the peculiar colour of his lips. She at once went into the works, and called attention to the child's condition. The medical evidence showed that death was due to poison. A verdict to this effect was returned. The jury recommended Messrs. Haigh & Co. to keep their sulphuric acid where it could not be obtained by unauthorised persons, and to make good the fence around the yard, so that such persons might be excluded.

The Final Football Association match of the Metropolitan College of Pharmacy was played on Saturday last, at Shepherd's Bush, against the Hawley Football Club, the game resulting in a win for the Metros. by 7 goals to *nil*. The following scored:—Negus 3, Johnston 2, Exell and Lucas 1.—Thirteen matches were played during the season by the Metros., who scored 50 goals against 11.

Mr. F. Casson, late of Handsworth, Birmingham, has entered into partnership with Mr. J. H. Aplin, of Trowbridge.

Protection of Patents.—In the House of Commons, on March 7, Mr. Cawley asked the President of the Board of Trade whether he was aware that the protection granted in Germany to a supplementary patent (Zusatz) was limited to the remaining term of the original patent, whilst in the United Kingdom it was treated as a new patent running for the full term; and that a patent originating in Germany and registered in France ceased to exist in Germany and in France simultaneously; and, whether, considering that the longer duration of such patents in this country than in Germany and France was so serious a disadvantage to British manufacturers, more particularly to manufacturers of chemicals, who were precluded from using them, often for years, during which their German and French competitors were at liberty to do so without restraint or payment of royalty, the Government would be willing to bring in a Bill during the present Session to remedy this inequality arising, not from natural causes, but from discordant legislation. Mr. Ritchie said: "In Germany and France the duration of an ordinary patent is fifteen years. For this reason patents taken in both those countries expire simultaneously. In the United Kingdom the duration of a patent is limited to fourteen years. Therefore, in the great majority of cases in which patents for the same invention are taken out in the three countries the patent expires one year earlier in the United Kingdom than in Germany and France, and not later, as might be inferred from the hon. member's quotation. The existing law so far from placing manufacturers in this country at a disadvantage in this respect operates distinctly to their advantage on the whole. In the very exceptional case of patents of addition in Germany, it would depend on the date of the application for the patent whether the patent would expire earlier in Germany or in the United Kingdom. If the application were made within a year from the date of the application for the original patent, the patent would expire earlier in the United Kingdom than in Germany. If made later, the patent would expire later. I am not prepared to introduce legislation this Session."

Exeter Dispensary.—At the annual meeting of the Exeter Dispensary, on February 28, new rules were submitted for adoption, and the chairman, in moving that they be passed, said the principal alteration was a provision for the election of honorary officers and surgeons. It was also laid down that the dispensers should possess the usual qualifications necessary for every person who practised as a chemist and druggist under the Pharmacy Act; and also that one of the assistants should be fully qualified. Neither of the assistants was at present qualified, but one was preparing for examination, and would doubtless be registered in the near future.

Injunction against Opening a Chemist's Business.—At the Manchester sitting of the Chancery of Lancashire, before Vice-Chancellor Hall, on March 6, the motion of Williams *v.* Gibson came on for hearing. This was a motion on behalf of Mary Rudkin Williams (widow), of 189, Wavertree Road, Liverpool, against the defendant, Thomas Gibson, of 271, Edge Lane, Liverpool, described as a chemist, though the name "Thomas Gibson" does not appear on the Register of Chemists and Druggists. The plaintiff sought an injunction to restrain the defendant from carrying on business as a chemist, either as manager or assistant, or on his own account, in Wavertree Road, Liverpool, or within a radius of one half-mile from the plaintiff's shop, No. 189, Wavertree Road, for the space of two

years from August 1, 1898. — Mr. M'Master appeared for the plaintiff, and Mr. Radford for the defendant.—It appeared that the defendant had entered into an agreement with the plaintiff in March, 1898, to act as manager at the plaintiff's shop, in Wavertree Road, Liverpool, for a term of six months, at a salary of 38s. per week, and also agreed not to engage himself as manager or assistant, or open a business on his own account, in Wavertree Road or within a radius of one half-mile from 169 and 189, Wavertree Road, for a term of two years after leaving the plaintiff's employ. In August, 1898, the defendant left the plaintiff's employ, and since that time has been engaged as manager to different chemists within the prescribed area. At the present time, however, the defendant is preparing to open a chemist's shop in Wavertree Road, in breach of his agreement, and counsel submitted that the plaintiff was entitled to an interlocutory action to restrain the defendant from doing so.—The court granted the plaintiff's application.

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on Monday, the 6th instant, Sir James Crichton-Browne, M.D., F.R.S., Treasurer, and Vice President, presiding. The following were elected members:—Mr. W. B. Bannerman, Mr. A. Bellin, Lady Currie, Mr. C. H. Gatty, Mr. A. C. Gibbons, Mr. E. J. Gibbons, Mrs. Horne, Mrs. Kraftmeier, Sir G. H. Lewis, Mrs. J. List, Mr. F. J. Longton, Mr. O. S. Macleay, Mrs. Parker, Mr. H. Pulford, and Colonel E. Sartorius, V.C., C.B. The special thanks of the members were returned to Sir Andrew Noble, K.C.B., for his donation of £100, and to Mr. Edward Kraftmeier for his donation of £52 10s. to the fund for the promotion of Experimental Research at Low Temperatures. His Grace the Duke of Northumberland was elected President of the Royal Institution in the place of the late Duke, his father.

A SMART MANCHESTER CHEMIST.—A case, which was not without a humorous aspect, although in some respects a painful one, came before the Manchester City Justices on Monday, when a middle-aged man named Albert Howard, bricklayer, was charged with attempted suicide. The man had a quarrel with his wife, and sent his son for sixpennyworth of carbolic acid, which was refused, as well as a similar quantity of chlorodyne. Prisoner then went himself to the shop of Mr. Smith, chemist, Chester Road, who had his suspicions, and mixed him a halfpennyworth of carbolic acid with a liberal quantity of water. Sickness resulted, and the police were called in and prisoner was locked up. Prisoner's wife stated that she asked her husband what he had taken, and he replied, "Sixpennyworth of chloride of lime." The Bench commended Mr. Smith for his shrewdness, and the prisoner, who appeared very penitent, was remanded.

MANCHESTER PHARMACEUTICAL ASSOCIATION.—The concluding meeting of the present session was held at the Memorial Hall, Manchester, on Wednesday evening, when a lecture was delivered by Mr. Hermann Woolley, F.R.G.S., under the title of the "Central Caucasus," the country travelled over being Elbruz and Kasbec. The lecturer founded his remarks on five visits to the Caucasus, and he started by means of lantern slides from Batoum, the port to which oil was brought from Baku. There was a small coating of oil on the water in the harbour, and the fish tasted so much of petroleum that they could not be eaten. The views were numerous and of a very varied character, some of them reminding one of some of the finest alpine glaciers. The lecturer's narratives, many of them of a very humorous character, were highly enjoyed. A cordial vote of thanks was accorded to Mr. Woolley for his interesting lecture, on the motion of Mr. Alderman Gibson.

LIVERPOOL PHARMACEUTICAL STUDENTS' SOCIETY.—At a meeting of this Association, held on March 2, Mr. R. C. Cowley in the chair, the miscellaneous communications were as usual varied and interesting. A well-written paper of considerable literary merit was also read by Mr. H. B. Morgan on "A Glance at Some of Our Grandmother's Fairies."

DR. FRANCIS N. MACNAMARA, of the Indian Medical Service, died on March 5, at the age of 67. His obituary notice in the *Times* states that, after a brilliant career at King's College, he obtained, in 1853, an appointment to India, and, having particularly distinguished himself in chemical science, was, at the age of 22, appointed by the court of directors of the East India Company Professor of Chemistry at the Calcutta Medical College, to which was united the office of Chemical Examiner to the Government of India. In that capacity he devoted much time and skill to detecting in water the seeds of cholera. By analysing various specimens of water from different parts of the country he was enabled to identify disease with impurities, and the necessary precautions were taken under his advice, but in those days considerable prejudice and opposition had first to be overcome. In conjunction with his brother, Charles Macnamara, he raised the question of supplying pure water to Calcutta, a work which was subsequently accomplished. Dr. Macnamara attracted to him the native students, by whom he was greatly respected and beloved, and from whom, on leaving India, he received sincere marks of esteem. He was as modest and retiring as he was earnest and persevering, and public notice scarcely followed his successful efforts. Upon his return to England after leaving the service, he was appointed by the Secretary of State, Examiner of Medical Stores at the India Office. He was about to relinquish this appointment when death overtook him. Dr. Macnamara was the author of 'Climate and Medical Topography in their Relation to the Disease Distribution of the Himalayan and Sub-Himalayan Districts of British India' (Longmans, 1880), and contributed articles on "Goître" to Davidson's 'Hygiene and Diseases of Warm Climates'; on "Pathological Chemistry" to the 'Indian Annals of Medicine'; on "Abscess of the Liver" and other papers to the *Indian Medical Gazette*.

SCHOOL OF PHARMACY NEWS.

SQUARE STUDENTS, past and present, are reminded that the annual fixture of the Pharmaceutical Football Club, viz., Present *v.* Old Students, will take place at Wormholt Farm, Uxbridge Road, Shepherd's Bush, on Saturday, March 18. The game will be followed by a tea and smoking concert at the Bush Hotel. It is hoped that a large number of friends will be present both at the match and afterwards at the tea and concert. Tickets for the same, price 1*s.* 6*d.* each, will be forwarded by the Honorary Secretary, Mr. Horace Finnemore, 17, Bloomsbury Square, W.C. The proceedings are quite of an informal character and are always enjoyable, forming, as they do, a social and pleasing conclusion to the football season.

TO THOSE STUDENTS who take an interest in field botany, perhaps a short account of a few plants which may be obtained within easy access of London will not be unwelcome. In considering first those which are in flower, the fact should not be lost sight of that it is not only those plants which are in flower that have anything of interest attached to them. In clayey soils may be seen the primrose, with its comfortable looking flowers; and when, perhaps, after a long trudge, we suddenly come across this flower nestling in the hedgerow, we can understand why it has so often inspired our poets. *Vinca minor* may be gathered, too, and the peculiarly-shaped stigma should be noticed.

A FEW DANDELIONS may even be found, and this is a very convenient time for studying their highly-developed structure. The gorse is also in bloom. Then in shrubberies may be found the spurge laurel which, to the observant eye, gives a lesson in ever-recurring cases of the influence of environment on structure. It would evidently be of little use to the plant to take the trouble to develop delicate tints and structures in its flower, blossoming as it does in the cold season of February and March. Among catkin bearers one may come across the hazel, willow and, in sunny places, the black poplar. It is convenient now to study the foliage leaves, and among many others we may mention the spotted hastate leaves of *Arum maculatum*; the modifications of the inflorescence to secure fertilisation should be noticed later on in the year. There is also another plant of interest which may be mentioned, viz., the common chickweed.

THIS CAN GIVE A LESSON to mankind on the advantages of a united community, for it is able, by aggregating in large patches, to draw upon itself much more attention than would be the case if it lived an isolated life. No one perhaps needs this lesson more than the pharmacist. A point of interest which often escapes observation is the beautiful streak of silky hairs down one point of the stem, which serves as a means of conducting the water from node to node. This list is not supposed to be inclusive but is merely the result of observations during a single ramble.

The "Lady Authors" referred to in this column last week desire to congratulate the students of the School of Pharmacy on their wonderful powers of observation, especially in cases where pins and glasses of water are concerned. They hope those powers will prove useful in the Easter revisions, and think they should certainly continue to be cultivated.

Football.—The Pharmaceutical Football Club was at home to Harlesden on Saturday, and, the latter bringing a strong team, some very exciting play ensued, the visitors winning an evenly contested game by 1 goal to love. Wild winning the toss, Owen started the ball off downhill, but it was quickly returned, and for a time the Harlesden men were very pressing, the Square custodian having to use his hands more than once. Play of an even nature then resulted, but towards the interval the Square forwards made a determined onslaught on the enemy's goal, but failed to score, although Owen put the ball through just as the referee's whistle blew. On changing over the visitors, after a rearrangement of their front rank, scored the only goal of the match, from a throw out by Padwick. Warren was, as before, very conspicuous for once, when *hors de combat* he prevented the back from clearing by lying on the ball till Owen came and relieved him. Wild put in several good runs, and centred well in front of goal, and Owen, though lame from a bad kick, gave the goal-keeper a lot of trouble. Collenette was as usual in very good form at half-back, and the Square defence generally had plenty of work to do and did it well. The Squaremen lined out as follows:—Goal, Padwick; backs, Grey and Stokoe; half-backs, Garsed, Collenette, and Martin; forwards, Wild (capt.), Wilkinson, Owen, Durbin, and Warren.

As Previously Announced in these columns, Professor Collie will deliver his lecture on "Mont Blanc," illustrated by lantern views, this (Friday) evening, before the Students' Association. All students and their friends, both ladies and gentlemen, are cordially invited. Refreshments will be served afterwards in the Examination Hall.

SCOTTISH NEWS.

The Late Dr. A. K. H. Boyd.—At the inquest on the body of Dr. A. K. H. Boyd, of St. Andrews, whose death occurred at Bournemouth under such painful circumstances last week, it was shown that he had suffered from sleeplessness, for which he occasionally took draughts. He had also been in the habit of using liquefied carbolic acid for purifying a surgical appliance. He had taken six bottles of the sleeping draught and six green glass bottles containing the carbolic acid with him to Bournemouth. Each of the bottles bore a label bearing the name of Smith & Gavan, 109, South Street, St. Andrews. On the label in one case was printed the word "Poison," and written underneath "Carbolic acid for bottleful of lotion," and on the other label was written "Paraldehyde draught as formerly." Both were enclosed in paper and in an outer case, and the deceased, who had been in the habit of swallowing the whole draught at one time, appears to have taken up the wrong case, and swallowed the whole of the contents of the wrong bottle, without removing its wrapper, before becoming aware of what he had done. The jury expressed regret that the fatal dose should have been placed in close proximity to the sleeping draught bottles, and that the poison should have been contained in somewhat similar bottles.

Employés Social.—Messrs. W. and R. Hatrick and Co.'s employés and their friends held a most enjoyable social meeting and dance at the Sauchiehall Rooms, Glasgow, on Friday, March 3. The gathering was presided over by Mr. William Lindsay Hatrick, managing partner of the firm. Dancing was commenced at 8.30, and was kept up with vigour till an early hour in the morning, to the strains of Mr. Russell's Petite Band, the duties of M.C. being ably discharged by Mr. James Kirke. Songs, etc., were contributed in the course of the evening by Mr. W. L. Currie, President of Glasgow and West of Scotland Pharmaceutical Association, and Messrs. Hislop, Brown, Alexander, McFie and others.

Edinburgh District Chemists' Golf Club.—The annual general meeting was held in the Pharmaceutical Society's House, 36, York Place, on Tuesday, February 28, the Captain, Mr. H. D. Alexander, in the chair. The Secretary's and the Treasurer's reports were read and adopted, both being considered highly satisfactory. The Chairman stated that the past season had been a most successful one, and all the competitions had been well contested. Office-bearers for the current year were elected as follows:—Hon. President, George D. Mackay; Captain, George Robertson; Vice-Captain, James Stott; Hon. Secretary, W. C. Baker, 13, Dundas Street; Assistant-Secretary, Wm. Lyon; Hon. Treasurer, W. B. Cowie; Committee, H. D. Alexander, T. D. Burt, H. J. Dey, A. C. Kirkpatrick, George Lunan, W. Swan, and S. R. Wood.

Visit to a Chemical Works. — On Saturday, March 4, the students of the School of Pharmacy, Gordon's College, Aberdeen, accompanied by the head teacher (Mr. Hugh E. Ellis, Ph.C.), visited the chemical works of Messrs. John Miller and Co. They were most kindly received by Mr. Miller, who took them to the laboratory, where the various chemicals prepared by the firm were shown, and the manufacturing processes explained. Then they went over the sulphuric acid plant, and in addition to seeing it in working order they were conducted over the new plant which the firm is now building, and they were therefore enabled to have a thorough grasp of the construction of the works. After that, the various stages in the distillation of coal tar were noticed, and the fractional distillation of the light and heavy oils graphically explained by one of the firm's chemists. Altogether a most interesting and instructive morning was spent. On the previous Saturday the students paid a visit to the gasworks, where the various processes where shown by the courteous engineer, Mr. Smith. In both cases the excursions were arranged through the instrumentality of Baillie Paterson.

Edinburgh Pharmacy Athletic Club.—The annual general meeting was held in the Pharmaceutical Society's House, 36, York Place, Edinburgh, on Monday, March 6, at 9.15 p.m., Mr. George Somerville, President, in the chair. The Secretary read the annual report, from which it appeared that the Club had had a successful year, the swimming section having been specially well patronised, while the golfing section required some livening up. The annual sports and the annual smoker had both been eminently successful, an agreeable innovation at the latter being a service of fruit. There was a membership of ninety-seven. On the motion of Mr. Rowland, seconded by Mr. Ross, the report was adopted. The Treasurer read the financial statement, which showed a balance of £14 4s. 10d., as compared with £8 0s. 7d. last year. On the motion of Mr. Gibb, seconded by Mr. Aikman, the statement was adopted. The President mentioned that Mr. Grieve, a member of the Club, had received the Royal Humane Society's medal during the year for rescuing a girl from drowning in the Union Canal. A vote of thanks was awarded to the Pharmaceutical Society for the privilege of holding meetings in the Society's House, and it was agreed to send a subscription of £1 1s. to the Benevolent Fund. The office bearers were elected for next year as follows:—Honorary President, George Coull, B.Sc.; President, George Somerville; Vice-President, G. H. C. Rowland; Secretary, J. P. Gibb, 8, Cobden Crescent; Assistant Secretary, J. Aikman; Treasurer, D. S. Napier, 42, South Clerk Street; and as Committee, Messrs. Butters, McBain, Ross, Smith, Sutherland, Taylor, and Walker. The meeting then closed.

IRISH NEWS.

Irish Pharmacists' Assistants' Association.—At Dublin, on Friday last, the usual fortnightly meeting of this Association was held at 67, Lower Mount Street. Miss Ada Wyatt, M.P.S.I., presided in the absence through illness of the President, Mr. Henry Hunt, M.P.S.I. The minutes of the last meeting having been read and confirmed, and some routine business transacted, Mr. Jessop, L.P.S.I., read a paper on "Pharmacopœia Revision," in which the author traced the circumstances which led to the compilation of the existing edition of the B.P. The contention that pharmacists should have an active share in the preparation of the volume was set forth in strong yet lucid terms. The B.P. was essentially a *vade mecum* for pharmacists, and none were more qualified to assist in its compilation than the rank and file of the chemical profession. It was admitted that circumstances debarred the great majority of pharmacists from acquiring that knowledge requisite for the work of revision, but there were a few notable exceptions, and there was no good reason for ignoring the claims of these gentlemen. Coming nearer home, the essayist advocated laboratory work in connection

with the Pharmaceutical Society, and urged the establishment by the Society of courses of lectures in theoretical chemistry, of course as an optional study by students. The paper having been criticised by Messrs. Jones, Savage and others, and thanks having been accorded to the reader, the remainder of the evening was devoted to the consideration of practical questions in everyday pharmacy, the inspection of illegible prescriptions and incompatible mixtures. A vote of thanks having been passed to Miss Wyatt for presiding, the proceedings terminated.

PIGS' CHEEKS AND PEPSIN PILLS.—At a meeting last week of the Rathmines (Dublin) Urban Council a circular was received from the Pharmaceutical Society of Ireland pointing out that at the last session of Parliament the Council of the Society petitioned both Houses of Parliament, setting forth the difficulty experienced in upholding the pharmacy and poison laws in Ireland, and praying for a remedy in the Bills then before Parliament for the amendment of the Companies Acts; and that in order to obtain the support and influence which they recognised were necessary to impress the Government sufficiently to insure dealing with the question they applied to the newly-formed Councils—county, borough, and urban—and invited them to consider and support their representation that a scandal existed and ought to be remedied. They disclaimed any intention to interfere with co-operative societies which distributed only to their members, and affirmed that they aimed exclusively against companies keeping "open shop," contrary to the terms of the Pharmacy Acts. They held that the law was brought into contempt through the incorporation under the Companies Acts of persons who had been convicted under the Pharmacy Acts, thereby placing themselves "outside" of the Acts and obtaining in that way power to do what was otherwise unlawful for them to do. The remedy sought was an amendment of the Companies Acts to the effect that companies might not be registered to do acts for which qualification by education and examination was required by Parliament, unless all the members of the corporation were legally qualified. They held that the security to the public of a company with a qualified assistant was not equivalent to that of a proprietor who had to bear the responsibility of oversight and odium of error, and must exercise supervision over and judge the competence and moral rectitude of all his assistants, which a company of unqualified persons was entirely incompetent to gauge. They asked the Council to pass a resolution affirming it was a scandal that persons fined for a breach of the pharmacy laws might, under cover of the Companies Act, continue to keep open shop in contravention of the statutes requiring that the person keeping open shop shall be qualified by examination, and that in any amendment of the Companies Acts it should be defined that persons may not be incorporated to pursue a calling or use titles which they may not as an individual or firm follow or use. The Chairman, Mr. E. M. Hodgson, M.P.S.I. (McMaster, Hodgson and Co., chemists), explained that in his experience of pharmacy limited companies were only formed to find the capital, but fully qualified persons were employed to conduct the business. Councillor Murphy (grocer) said he was of opinion that the Pharmaceutical Society took a very narrow view of things. He knew several cases where the progress of journeymen was seriously retarded by this narrow-mindedness. Councillor Hewson (barrister) said he objected to companies who sold pigs' cheeks at one counter and pepsin pills at the other side of the shop. Councillor Edmondson (laundry owner) thought the Pharmaceutical Society had no right to approach the Council on such a subject. It was decided to inform the Society that the subject was outside the business of the Council.

THROUGH THE ACCIDENTAL MIXING OF BOTTLES containing Scrubbs' fluid ammonia and Murray's fluid magnesia, a fourteen months old child has been poisoned at Dublin, a teaspoonful of the former instead of the latter being administered by its nurse. The Coroner's jury, in returning a verdict of "Death through misadventure," expressed the opinion that Scrubbs' ammonia and similar poisonous preparations ought to be labelled with a distinctive and striking label which would attract attention, and so tend to avoid such accidents.

PHARMACEUTICAL SOCIETY OF IRELAND.—Applications for the Preliminary Examination of this Society should be lodged with the Registrar by 11 a.m. on Tuesday, the 21st. inst., at latest.

Trade Notes.

THE BERKEFELD FILTER COMPANY, LTD., 121, Oxford Street, W., submits a copy of its new and revised illustrated price-list, recently issued. It contains reports on the relative efficiency of water filters in the prevention of infectious disease by Drs. Sims Woodhead and Cartwright Wood, published in the *British Medical Journal*; directions for fixing and cleaning the Berkefeld cylinders, a description of filtering cylinders, etc. This list cancels all previous lists published by the firm; therefore chemists interested in the sale of these filters should apply for a copy.

THE TASMANIAN EUCALYPTUS OIL COMPANY sends a copy of a pamphlet dealing with the characteristics of *Eucalyptus globulus* oil, which has now become officially recognised as that most suitable for use medicinally, and offers to forward a copy of the pamphlet to anyone applying for it and mentioning the *Pharmaceutical Journal*.

THE MANAGING DIRECTOR OF FROMMS' EXTRACT CO., LTD., asks us to state that the registered offices of the Company have been removed from 61½, Fore Street, E.C., to 5, White Street, Moorfields, E.C., where all communications should be forwarded.

MESSRS. WILKINSON & SIMPSON, LTD., 24 to 32, Newgate Street, Newcastle-on-Tyne, have been appointed by Mr. John Rye, Holmboe, Tromsoe, Norway, depôt agents for his "Holmboe" brand Norwegian cod-liver oil, which is so well known to buyers in the United Kingdom as to require no comment respecting it. They will be glad, on application, to supply prices and samples for direct shipments or from depôt.

EASTER HOLIDAYS, 1899.—Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C., announce that their offices, warehouses, laboratories, etc., will be closed from Thursday evening, March 30, 1899, until the morning of the following Tuesday.

FURNITURE CREAM.—Messrs. John Parkes & Co., of Warwick, have submitted a sample of their Parisian Furniture Cream in glass and stone bottles, which they supply to chemists with their own name printed on. The bottles have a very attractive wrapper, and buyers have a choice of labels lithographed in colours. On receipt of a post-card the manufacturers will post a free sample with specimen, labels, and terms. A useful pamphlet for distribution, 'Hints to Housekeepers on the Art of Polishing' can also be obtained. The furniture cream, which is guaranteed to be made with the best materials available, polishes all varnished and enamelled articles, marble, linoleum, bicycles, and also brown and patent leather boots and shoes.

Publications Received.

UN NOUVEL AGITATEUR ELÉCTRIQUE. Par le Dr. EDM. VAN MELCKEBEKE. Reprint from the *Bull. de l'Assoc. Belge des Chimistes*. From the Author.

CHEMISTRY FOR PHOTOGRAPHERS. By C. F. TOWNSEND, F.C.S., F.R.P.S. Pp. 158. Illustrated. Second edition, revised. Price 1s. net. London: Dawbarn and Ward, Ltd. 1899. From the Publishers.

Partnerships Dissolved.

(From the London Gazette.)

Geo. S. Mascall and Thos. Mascall, Surgical and Veterinary Instrument Makers, 1, Weedington Road, Kentish Town. Debts will be received and paid by Geo. S. Mascall, who will continue the business.

Richard Ashby and T. E. Constant, Dental Surgeons, Scarborough. Debts will be received and paid by either partner or by Mr. F. G. Stephenson, Accountant, King Street, Scarborough.

Birth.

DOWNIE.—At Santa Tecla, Salvador, Central America, on March 5, the wife of George Downie, of a son. (By cable.)

MARKET REPORT

The quotations here given are in all cases the lowest ca h prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

MARCH 9, 1899.

Business has been rather quiet during past week, with the one exception that a large speculative business has again been done in Quinine, which has still further advanced in value, and looks like going still higher. Quicksilver is, perhaps, not quite so firm. Mercurials steady and unchanged. Cocaine quiet. Phenacetin dull. Sulphonal and Acetanilide steady. Phenazone rather lower. Bromides and Iodides steady at unchanged prices. Glycerin quiet. Cod Liver Oil fairly steady. Acid Tartaric firm. Cream of Tartar again rather dearer. Acid Citric the turn weaker. Opium dull and weak. Morphia quiet. Codeia firm Borax and Acid Boracic steady. Sulphate of Ammonia dearer. Acid Carbolic steady. Camphor quiet. The following prices rule for some articles of chief interest :—

ACETANILIDE.—No change in price has so far taken place, the combined makers still quoting 11d. per lb. for 5-cwt. lots, up to 1s. 2d. per lb. for smaller quantity.

ACID CARBOLIC.—Market is quiet but steady at 6$\frac{5}{8}$d. to 6$\frac{3}{4}$d. for best makes of 35-36° C. *ice crystal* in 2½-cwt. drums and overcasks, other qualities and packing being quoted in proportion. *Crude* unchanged at late rates. *Liquid*: 95 to 98 per cent. of pale straw colour 1s. 2d. to 1s. 3d. per gallon in 40-gallon casks.

ACID CITRIC.—Market is very quiet, with a somewhat weaker tendency, at 1s. 3½d. to 1s. 4d. per lb. for *crystals*.

ACID TARTARIC.—*English* is quoted 1s. 1d. per lb. on the spot, price of *foreign* being 1s. 0¼d. to 1s. 0½d. per lb., *c.i.f.*

ALUM—Steady at £5 7s. 6d. per ton for loose lump, and £6 per ton for ground in bags, ex-warehouse.

AMMONIA COMPOUNDS.—*Bromide*, 2s. 2d. per lb. *Carbonate* 3d. to 4d., according to make and packing. *Iodide*, 14s. 3d. per lb. *Muriate*, white, free from metals, 25s. to 27s. 6d. per cwt.; chemically pure small crystals, 30s. to 32s. *Sal ammoniac*, sublimed firsts, 35s.; seconds, 33s.; crushed for batteries, 37s. and 35s. per cwt. respectively. *Sulphate* very firm, gray, 24 per cent. prompt London, £10 8s. 9d. per ton; Hull, prompt, £10 7s. 6d. to £10 8s. 9d. per ton; Leith, prompt, £10 8s. 9d.; Beckton, £10 7s. 6d.; Beckton terms, £10 5s. *Sulphocyanide*, 1s. 1d. to 1s. 2d. per lb.

ANTIMONY.—*Regulus* £38 10s. to £39 per ton. *Crude* (*Black Sulphide*) spot £23 per ton, and for arrival £20 15s. to £21 *c.i.f.*

ANTIPYRINE.—Dr. Knorr's article is unchanged in value, while the competition for orders has led to price of *Phenazone* being reduced, the favourite "Star" brand being now obtainable in quantity at 6s. per lb., or even rather cheaper for large contracts.

ARECA NUTS—Are exceedingly scarce, only a few bags being available, and for these 40s. per cwt. is wanted.

ARSENIC—Unchanged at 18s. per cwt. for *powder* and 34s. per cwt. for *lump*.

ASAFETIDA.—There has been some inquiry for good quality, and small sales have taken place at 70s. per cwt. for fair almondy block, slightly stoney.

BENZOIN.—There has been a good inquiry for the cheaper grades, but these are now becoming scarce. *Palembang* has been sold at 50s. per cwt. Glassy *Penang* is held for 70s. per cwt., whilst the lower qualities of *Sumatra* are in small supply and long prices are asked.

BISMUTH—Unchanged at 5s. 1d. per lb. for the *Subnitrate*, *B.P.*, and 5s. 8d. per lb. for the *Subcarbonate*, *B.P.*, the commercial quality of metal being also much unchanged at 5s. per lb.

BLEACHING POWDER (CHLORIDE OF LIME)—Is quiet at £6 per ton for English make.

BORACIC ACID—Steady at 26s. per cwt. for *crystals*, and 28s. per cwt. for *powder*.

BORAX.—A fair business is doing at 16s. 6d. per cwt. for *crystals*, and 17s. per cwt. for *powder*.

BROMIDES AND BROMINE—Are firm at unchanged prices, viz., 1s. 10d. for *Potass. bromid.*, 2s. 1½d. per lb. for *Sodii bromid.*, 2s. 2d. per lb. for *Ammon. bromid.*, and 2s. 2d. per lb. for *Bromine*.

CALUMBA ROOT.—For common sorts there has been some inquiry, and from 11s. 6d. to 12s. 6d. per cwt. has been paid.

CAMPHOR—Quiet but firm. *Crude* is quoted to arrive 127s. 6d *c.i.f.* per cwt. for *China*, and 132s. 6d. per cwt. for *Japan*. There is no change in the position of the *refined* article.

CANNABIS INDICUS.—A fair business has been done at 6d. per lb. for good green tops.

CASCARA SAGRADA—Continues in demand for small lots, these being obtainable at 35s. to 40s. per cwt., according to age and holder.

CAUSTIC SODA.—70 per cent. *White* is quoted £7 10s. per ton; 60 per cent., £6 10s.

CHLORATE OF POTASH—Is quiet, at 3¼d. per lb. for *crystals* and 4d. per lb. for *powder*, spot, London.

CLOVES.—Privately *Zanzibar* in fair demand at rather better rates. Business done includes spot at 3$\frac{7}{16}$d., and for delivery Jan.-March 3$\frac{5}{8}$d., March-May 3$\frac{9}{32}$d., April-June 3$\frac{7}{16}$d. At auction 4 cases *Penang* bought in at 7½d. for fair picked. 62 bales *Zanzibar* sold at 3½d. 1 box *Ceylon* sold at 3⅜d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol* unchanged at 1s. per gallon for the crude and 1s. 3d. to 1s. 4d. per lb. for refined. *Benzole* dull at 8d. per gallon for both the 50 and the 90 per cent. *Creosote* 3¼d. per gallon. *Crude naphtha* 3½d. per gallon: *solvent naphtha*, 95 per cent. at 160° C., 1s. 6d. per gallon.

COCAINE—Is quiet, and while makers quote 11s. to 12s. per oz. for the *Hydrochlorate* in 25 oz. tins, and for 100 oz. lots there are sellers from secondhand at rather less money, without, however, meeting with any very active demand; in view of the position of *crude*, it is thought that we may see a different state of affairs as regards the *refined* article before very long.

CODEIA—Is very firm and in good demand at 12s. 6d. per oz. for the *pure* and 1s. per oz. less for the *salts*.

COD-LIVER OIL—Is steady at 65s., *f.o.b.*, for best new non-congealing *Norwegian* oil in 25-gallon tin-lined barrels.

CORIANDER SEED—Is quiet, old crop *Mogador* being held for 7s. per cwt. There is not much new crop available, and for this 8s. per cwt. is wanted.

CREAM OF TARTAR—Is again firmer at 76s. to 77s. per cwt. for first white *crystals* on the spot, *powder* being quoted 78s. to 82s. per cwt., according to percentage.

GINGER.—Demand is slow and the offerings at auction were small; of 173 bags washed rough *Cochin*, 93 bags sold; fair bright medium and small at 26s.; small and ends at 23s.; of 26 cases cut kinds, 5 cases sold, without reserve, small and ends part limed at 27s. 92 barrels *Jamaica* all bought in. 2 bags *St. Lucia* sold at 60s., 69 bags *Japan* sold, without reserve, at 18s. 6d. to 19s.

GLYCERIN.—The market is quiet but fairly steady at £29 to £31 per ton for the *crude*, 52s. 6d. to 55s. per cwt. for *refined English*, and 53s. to 60s. per cwt. for *German*, for best white double distilled chemically pure 1260° quality in tins and cases.

IODIDES AND IODINE—In fair demand at 10s. 6d. per lb. for *Potassii Iodide*, 11s. 10d. per lb. for *Sodii Iodide*, 14s. 3d. per lb. for *Ammon Iodide*, 12s. per lb. for *Iodine resublimed*, and 13s. 10d. per lb. for *Iodoform*, *crystals*, *powder*, and *precipitated*. Commercial *Iodine* is unchanged at 7½d. per oz.

IPECACUANHA.—Business has been quiet in this article. *Rio* is firmly held for 12s. per lb., although for 5 or 10 bale lots this price could probably be shaded. For *Carthagena* 8s. to 8s. 2d. per lb. is asked, according to quantity.

LYCOPODIUM.—Good sifted *Russian* is held for 1s. 2½d. per lb.

MERCURIALS—Are steady at unchanged prices, viz., 2s. 10d. per lb. for *Calomel* and 2s. 6d. per lb. for *corrosive sublimate*.

MORPHIA.—Quiet and unchanged at 4s. 6d. per oz. for *Hydrochlorate powder*, and 2d. per oz. more for *crystals*, for quantity on contract.

NITRATE OF SODA—Is dearer at £8 for the commercial, the same price being also quoted for the refined quality.

OILS (ESSENTIAL).—*Star Aniseed* is dull at 5s. 11d. to 6s. per lb. *Cassia* is quiet at 4s. 6d. to 5s. per lb., according to quality. *Clove* is lower at 2s. 9d. per lb. for English. *Peppermint*: H.G.H is dull at 5s. 6d. to 5s. 9d. per lb. *Japan* quiet, but firm on the spot at 3s. 6d. per lb. for dementholised. *Sassafras* steady at 1s. 8d.

per lb. on the spot. *Citronelle* quiet at 1s. 1d. to 1s. 2d. per lb. as to package and quantity. *Lemongrass* firm at 2⅞d. to 3d. per oz.

OILS (FIXED) AND SPIRITS.—*Linseed* firmer. London spot pipes £17 5s. to £17 7s. 6d. per ton, barrels £17 15s., April £17 15s., May to August £17 7s. 6d. to £17 10s., September to December £17 2s. 6d., Hull spot naked £17, April £16 15s. May to August £16 2s. 6d., September to December £15 15s. *Rape* steady, ordinary brown spot and April £21 to £21 5s., refined spot £22 10s. to £22 15s., Ravison spot naked £17, April £17 5s., May to August £17 10s. *Cotton* dearer; London crude spot £14 5s., April £14 7s. 6d., May to August £14 10s. *Refined* spot £15 15s. to £16, Hull refined naked spot £14 7s. 6d., April £14 10s., May to August £14 15s. *Crude* spot and April £13 7s 6d., May to August £14 per ton. *Olive*: Spanish, £30 to £32; Mogador, £30 to £31 per ton. *Cocoanut* steady; Ceylon spot, £25 10s. to £25 15s. landed; March to May, £24 10s. *c.i.f.*; Cochin spot, £29 10s., landed; February shipment, £26 15s. *c.i.f.*; March, £26 10s. *c.i.f.* *Palm* dearer; Lagos spot, £24 10s. *Lubricating Oil*: Pale American spot, 5s. 6d. to 7s. per gallon; black, 4s. 9d. to 5s. 6d.; Russian black, 4s. 6d. to 5s.; pale, 7s. to 8s. *Turpentine*, firm American spot, 32s. 6d. per cwt., April 32s. 7½d., May to June 31s. 6d., July to December 26s. 3d., September to December 26s. 1½d. *Petroleum*, Russian spot 5⅛d. to 5¼d., American spot 5⅞d., water white 7⅛d. per gallon; spirit, American, 8½d.; deodorised, 9d. to 9¼d. per gallon.

OPIUM—Is weak at nominally unchanged prices; there is, however, more pressure to sell (both here and in Smyrna), especially as regards soft shipping qualities; a small business has been done in *Persian* up to 10s. 6d. per lb.

OXALIC ACID—Is still quoted 3d. to 3⅜d. per lb. nett, free, delivered London.

PHENACETIN—Very quiet. Pressure to sell continues, especially on part of the agents for makes less in favour. The best makes are still obtainable at 3s. 9d. to 4s. 3d. per lb. in bulk, and 5s. 5d. to 6s. 1d. per lb. in original 1-lb. bottles.

POTASH COMPOUNDS.—*Bicarbonate* 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10s. per lb. *Chlorate*, powder, 4d.; crystals, 3¾d. per lb., spot, London. *Iodide*, 10s. 6d. per lb. *Permanganate*, 52s. 6d. per cwt. for small crystals, and 57s. 6d. for large crystals, in 1 cwt. kegs. *Prussiate*, yellow, English, 7¾d. to 8¼d. per lb., red 1s. 1d. to 1s. 2d. per lb.

QUICKSILVER—Is quiet at £8 5s. per bottle from first-hand and 1s. 6d. per bottle less from second-hand.

QUININE—Is still on the boom, the *Amsterdam* factory raised price this morning to 1s. 4½d. per oz., for the *Sulphate* for 1000 oz. lots in 100 oz. tins, while other German makers refuse to book orders, declining even to name a price; from second hand up to 1s. 4d. per oz. has been paid for *B. & S.* and for *Brunswick* make for May delivery. Everything would appear to point to the probability of a further advance in the price of the article, in fact a rise to 1s. 6d. per oz. is confidently predicted in the not too distant future.

RAD. HYDRASTIS CANADENSIS.—It is said that there is no further stock in the growing districts, and in New York there is very little, hence prices are still rising, although mainly nominal. Business has been done here at, it is said 3s. per lb., but it is doubtful if more could be obtained at this figure.

ROSIN—Strained on the spot is quoted 4s. 6d. per cwt. ex-wharf, and 4s. 1d. per cwt. *c.i.f.* for June-August and July-September shipment per sailing vessel.

SAFFRON—Is quiet but firm at 44s. per lb. for finest *Valencia*, and 26s. per lb. for *Alicante*.

SARSAPARILLA.—*Mexican* is very scarce, and 5¾d. per lb. *c.i.f.* is asked from New York.

SENNA.—*Tinnevelly*: Good leaf is wanted, but being scarce long prices are asked. A fair business has been done in fair spotty leaves at 2½d. to 3d. per lb., and in small green leaves at 3½d. to 3¾d. per lb. *Pods* are in request, and a few tons have been sold for shipment at 2d. per lb. The "Winstow Hall," due here today, brings 40 bales only. *Alexandrian* leaf of good colour continues scarce, and a new arrival consisting of a few cases only sold readily at 7d. per lb. *Pods* are held for 4d. to 4½d. per lb.

SODA COMPOUNDS.—*Crystals* firm at 52s. 6d. per cwt. for bags and 55s. for barrels, *ex*-ship, London. *Ash*: £5 to £5 10s. per ton, according to percentage. *Bicarbonate*: £7 5s. to £8 per ton or the 97 per cent., and 18s. 6d. to 20s. per cwt. for the fully bicarbonated. *Bichromate*: 2¾d. per lb. *Bromide*: 2s. 1½d. per lb *Caustic*: White, 70 per cent., £7 10s.; 60 per cent, £6 10s. per ton. *Hyposulphite* (*Antichlor.*): 6s. 6d. to 8s. 6d. per cwt., according to packing. *Iodide*: 11s. 10d. per lb. *Nitrate*: £8 and £8 2s. 6d. per ton for the commercial and refined respectively.

SODA CRYSTALS.—Firm at 52s. 6d. per cwt. for bags, and 55s. per cwt. for barrels, *ex*-ship, Thames.

SPERMACETI.—*American* is very firm and tending upward; 1s. 2½d. per lb. is present quotation for 60-lb. boxes.

SPICES (VARIOUS).—*Black pepper*, 506 bags Penang bought in at 5½d., no Singapore offered. *White pepper*: Of 334 bags Singapore only 14 bags sold at 8¾d.; 328 bags Siam all bought in at 8⅝d. to 9d.; of 68 bags Penang, 10 bags sold at 7⅞d. *Chillies*, 83 bales Zanzibar offered, and 10 bags sold at 35s. *Cassia lignea*: 500 bales broken were bought in at 38s. No *mace* offered. *Pimento* in slow demand, of 305 bags offered, 78 bags sold, fair at 4⅛d.

SULPHATE OF COPPER—Is quoted on the spot £23 10s. to £25 10s. per ton, according to brand, etc.

SULPHONAL—Is in good demand, anything obtainable below maker's present price of 17s. per lb. for *crystals* or *powder* being at once snapped up, quantity still available from second-hand appears to be now quite limited.

Newcastle Chemical Report.

MARCH 8, 1899.

Bleaching powder on this market commands most attention, although there is no extra pressure for supplies; price is steadily quoted. Soda crystals and other goods in position unchanged. Prices are: Bleaching powder, £5 5s. to £5 10s., according to market; soda crystals, 45s. to 47s. 6d., according to market; caustic soda, 70 per cent., £7 5s. basis; alkali, 40 per cent., £4 5s. to £4 10s.; soda ash, 40 per cent., £5; sulphur, £5 per ton.

Manchester Chemical Report.

MARCH 8, 1899.

Notwithstanding the better state of things noted for the past few weeks, prices continue at a low and almost unremunerative range so far as heavy chemicals are concerned. A fortnight ago Caustic Soda was expected to advance considerably, and there were rumours of a "combine," but this has not got beyond this limit. Bleaching Powder is firm, and there is no change in the demand for Ammonia Alkali. Drysalteries generally are in fair request. Sulphate of Copper may be said to have dropped 5s. per ton since last week. Re-sale lots are offered at £23 10s., and best brands at £24 10s. per ton, delivered Manchester. Arsenic is quiet but steady at £16 per ton, ex-ship Garston, closing with an upward tendency. Chlorates of Potash and Soda are unaltered. Brown Acetate of Lime is firmer at £5 2s. 6d. per ton, Welsh and American, Manchester. Glauber Salts are lower at 30s. per ton, bags, on rails. Yellow Prussiate is easier at 7¾d. to 8d. per lb., according to quantity. Aniline Oil and Salt quiet at late rates. Green Copperas is dull, but makers of Lancashire stuff hold out for full rates. Zinc and Tin Salts are firm. The exports for February are fairly satisfactory, those of Bleaching materials showing an increase of 19·7 per cent., although Alkali shows a decrease of 11·4 per cent. The imports of chemicals, dyestuffs and tanning substances show an increase of 35·3 per cent., and the exports of chemicals and medicinal preparations an increase of 7·6 per cent.

Liverpool Market Report.

MARCH 8, 1899.

AMMONIA SALTS.—Sulphate is again dearer, £10 7s. 6d. to £10 10s. per ton.

BEESWAX.—25 sacks of Chilian made £7 2s. 6d. per cwt. Peruvian also sold at £7 10s. per cwt.

BLEACHING POWDER.—£5 per ton.

BORAX.—£16 to £16 10s. per ton.

CANARYSEED.—Good to medium Turkish has sold to the extent of 100 bags at 26s. per 464 lbs., and Spanish 50 bags at 35s.

CARNAUBA WAX.—15 bags of grey went for 38s. 6d. per cwt.

COPPER SULPHATE—Is firmer, £23 12s. 6d. per ton.

CREAM OF TARTAR—Is dearer and in better demand at 75s. to 78s. per cwt.

Ginger.—45 bags of Calicut, ex store, have been sold privately.

Linseed—Is inactive, Calcutta being too high to tempt buyers, and River Plate neglected. Calcutta 39s. per 416 lbs. spot, forward 36s. 3d. to 37s. 3d.

Nitrate of Soda—Is still held firmly for 8s. to 8s. 3d. per cwt.

Oils (Fixed) and Spirits.—*Castor* has been fairly active during the week, but is now quietly steady at 2$\frac{15}{16}$d. per lb. for Calcutta, 2$\frac{7}{8}$d. per lb. for French, and 2$\frac{3}{4}$d. per lb. for Madras; 50 cases of the latter having been sold at this figure, and of French 60 tons forward July to December at £23 per ton, or 2$\frac{47}{64}$d. per lb. *f.o b.* Marseilles. The figure now asked is £23 10s. per ton. *Olive* is in quiet demand at £31 10s. to £32 per tun for Spanish. *Linseed* is a turn in buyer's favour at 19s. to 19s. 6d. per cwt. *Cottonseed Oil* has become cheaper by 6d. per cwt., viz., 16s. to 17s. *Spirits of Turpentine* are firm at 33s. 3d. per cwt.

Calendar for the Week.

Sunday, March 12. 4th in Lent. Sun rises 6.24; sets 5.57.

Monday, March 13. Sun rises 6.21; sets 5.58.

Tuesday, March 14. Sun rises 6.19; sets 6 0.

Bradford and District Chemists' Association, County Restaurant.—Social evening arranged by the Cycling Section.

Burnley and District Chemists' Association, Bull Hotel, at 6 p.m.—Annual Dinner.

Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C., at 8 p.m.—Evening Meeting, when Professor J. Reynolds Green will lecture on "Adverse Conditions and Their Remedies in the Life of Plants."

Royal Photographic Society, 12, Hanover Square, W., at 8 p.m.—Captain Abney will read a paper on "Theoretical Considerations in Choosing Colours in Three-Colour Printing."

Wednesday, March 15. Sun rises 6.17; sets 6.2.

Bristol Pharmaceutical Association, Royal Hotel, College Green.—Annual Dinner.

Pharmaceutical Society of Great Britain, 36, York Place, Edinburgh, at 8.30 p.m.—Evening Meeting when papers will be read by Messrs. A. Currie, W. B. Cowie, and J. Rutherford Hill.

Royal Microscopical Society, 20, Hanover Square, W., at 8 p.m.—A paper on "The Projection Microscope," by Lewis Wright.

Western Chemists' Association (of London), Westbourne Restaurant, Paddington, at 9 p.m.—Mr. C. B. Allen will open a discussion on "The Practical Conformity with Regulations for Keeping, Dispensing, and Selling of Poisons."

Thursday, March 16. Sun rises 6.15; sets 6.4.

Chemical Society, Burlington House, W., at 8 p.m.—Papers by Dr. M. O. Forster and Messrs. T. Purdie and J. C. Irvine.

Chemists' Assistants' Association, 73, Newman Street, W., at 9 p.m.—"The Commercial Study of Drugs," is the title of a paper to be read by J. H. Heap.

Linnean Society, Burlington House, W., at 8 p.m.—Papers by Messrs. P. C. Mitchell, W. P. Pycraft, W. West, and G. S. West.

North Stafford and District Chemists' Association, Copeland Arms Hotel, Stoke-on-Trent, at 4 p.m.—Annual Meeting, followed at 5 o'clock by the Annual Dinner, at which Mr. Walter Hills, President of the Pharmaceutical Society, is expected to be present.

Friday, March 17. Sun rises 6.12; sets 6.5.

Aberdeen Junior Chemists' Association, North Silver Street Hall, at 9.30 p.m.—"Retrospect of Pharmacy," by R. Leslie.

Irish Pharmacists' Assistants' Association, Dublin.—Paper by Dr. Auchinleck.

Saturday, March 18. Sun rises 6.10; sets 6.7.

PRACTICAL PHOTOGRAPHIC NOTES.

A New Monthly Publication is about to be issued by Messrs. Dawbarn and Ward, under the title of "The Photo-Miniature." Each issue is to be a monograph or text-book on some photographic subject. No. 1, on "Modern Photograpeic Lenses," will be followed by "Posing in Portraiture," "Hand Camera and Hand Camera Work," "Composition in Landscape," Stereoscopic Photography, etc., etc. Each issue will be not less than forty pages, printed on heavy art paper, and illustrations will be used when needed to elucidate the text.

Gold Toning with Sulphocyanide for Amateurs.—Among the many arithmetical puzzles with which the photographer is confronted there is hardly a more difficult one than that of realising the real meaning of the chaotic formulæ given by different makers for the simple process of toning. C. L. Hett (*Brit. Journ. Phot.*) has studied the directions sent out with different brands of paper, and has endeavoured to arrango hints for the preparation of the bath in comprehensible terms. For the gold solution break a tube of gold chloride (1 gramme) into 100 C c. of water.—Result, a 1 per cent. stock solution. Take 1 part stock and 9 parts water, obtaining a 1 per 1000 mixture for use. 100 C.c. in a small bottle is a convenient quantity to prepare at once. For the sulphocyanide solution, place 10 grammes of sulphocyanide in a foreign medicinal water bottle, and 1 litre (1000 C.c.) of water for 1 per cent. stock. In a similar bottle dilute 100 C.c. of stock with 900 C.c. of water, thus obtaining a 1 per 1000 solution. For each quarter-plate print take the quantities named in the table opposite the selected colour, and for other sizes and quantities of paper in like proportion:—

Colour.	Gold chloride 1 per 1000.	Sulphocyanide, 1 per 1000.
	C.c.	C.c.
Red	·7	7
Reddish brown	1·0	10
Brown	1·5	15
Warm purple brown	2·0	20
Cold purple brown	2·5	25
Cold purple black	5·0	50

Add as much water as is necessary for easy manipulation. Until experience is gained it is best to make a bath of sufficient materials to tone a single print in one dish, and exhaust the gold with it. For fixing, use one part saturated solution of hypo. and two parts water. For plates use one part each of saturated solution of hypo and water.

Sensitised Silk has recently been attracting a little attention on the Continent, and it may be useful to point out that it is by no means a difficult matter to prepare this. It is advisable to free the silk or satin from the dressing with which so many samples are prepared, and this is best done by using lukewarm soap and water and washing the silk, avoiding rubbing as much as possible, then rinse thoroughly and dry, but whilst still damp iron out with not too hot an iron. A 5 per cent. solution of iceland moss should be prepared and carefully strained through a felt bag, and when cool, to every 90 parts should be added 4 parts of salt and 1 part of glacial acetic acid, and on this mixture the silk should be floated for two minutes, and hung up to dry. To sensitise, float for the same time on a 10 per cent. solution of silver nitrate to which 1 per cent. citric acid has been added. Dry in the dark or by yellow light. Print in the usual way, not too deeply, and tone and fix in the ordinary baths, but of half the usual strength, well wash, and when nearly dry iron smooth on the back.

The Stripping P.O.P. gives very good results, either by transmitted or reflected light. It is extremely easy to work, and might be a good line to introduce as a novelty. It is treated exactly like ordinary P.O.P., and after toning and fixing and thoroughly washing, is squeegeed on to the glass or celluloid, and then just treated with warm water till the paper can be stripped off, leaving the image on the support. For viewing as transparencies the image must be printed much deeper than usual. It can be applied to almost any surface that is impervious to water.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns, second-hand; triples and biunials; oxy-hydrogen microscope; marvellous pamphengos oil; lantern gives 14-ft. picture; 60,000 slides and effects; 4-in. 4-wick lanterns, 18s. 6d. each, bargains; illustrated list post free, 2d. Animated photographs: A splendid machine for £9 9s.—Hughes, Brewster House, 82, Mortimer Road, Kingsland, N.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

What cash offers for 'Pharmaceutical Journal,' posted Tuesdays?—A. E., 213, High Street, Poole.

Magnificent Model Vertical Engine, tubular boiler, glass gauge, whistle, double-action slide-valve cylinder, bronzed stand, exhibition model, silver-plated, high speed and perfect; worth 42s., accept 12s. 6d., free; photograph 1d.—"Manager," Marshgate Chemical Works, Stratford.

Lancaster's No. 6 Astronomical Telescope, with best object-lens, 4 in. clear aperture, 60-in. focus, pancratic eye-piece, magnifying power from 60 to 120, 2 eye-pieces, 85 and 200; mounted on garden-stand; best achromatic finder and strong steadying-rod. Cost £25; will take £18.—Bradshaw, Tickhill, Yorkshire.

Offers wanted for Green's 'Botany,' Vols. I. and II.; Newth's 'Inorganic Chemistry,' Wills' 'Materia Medica,' Perkin and Kipping's 'Organic Chemistry,' 'British Pharmacopœia, 1898.' All newest editions.—Vickery, Batts House, Edenbridge, Kent.

Muter's 'Analytical Chemistry,' 1897 (new); Ince's 'Latin Grammar of Pharmacy,' 1890; Bentley's 'Manual of Botany,' 1887; Woodward's 'Arithmetical Chemistry,' Vols. I. and II.; Cripp's 'Pharmacy,' 1893.—Offers to M., 81, Lansdowne Road, Walthamstow, E.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Obituary.

RITCHIE.—On February 21, Andrew Wemyss Ritchie, Chemist and Druggist, Langholm, N.B. Aged 51.

PARE.—On February 26, Henry Burton Pare, Chemist and Druggist, Southport. Aged 62. Mr. Pare had been a member of the Pharmaceutical Society since 1874.

MADDISON.—On February 28, Thomas Harwood Maddison, Chemist and Druggist, Fulham. Aged 46.

SINCLAIR.—On February 28, John Gordon Sinclair, Chemist and Druggist, Nottingham. Aged 30. Mr. Sinclair had for a number of years been an Associate of the Pharmaceutical Society, and was elected a member of the Society this year.

TOMLINSON.—On March 5, Joseph Cuthbert Tomlinson, Chemist and Druggist, Lytham. Aged 59.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Alcock, Alsam, Bartlett, Bascombe, Branch, Burroughs, Brian, Clarke, Colley, Cracknell, Davison, Dawbarn, Doran, Ellis, Ferrall, Flood, Grace, Griffith, Hebb, Hill, Johnston, Jones, Keen, Kerr, Luff, Macfarlane, Mann, Marshall, Meadows, Merson, Mitchell, Murray, Nunn, O Halloran, Parker, Penney, Potter, Powell, Russell, Schneider, Shillinglaw, Smith, Spooner, Taylor, Thirlby, Vallet, Walden, Wallis, White.

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Advertisements.

(Received too late for Classification).

ENGAGEMENT wanted, to take charge during evenings. Good references. Qualified. Address, ACETUM, 5, Serle St., W.C.

PART-TIME (evening). Dispensing or counter. Extractor. STUDENT, 510, Hornsey Rd., N.

AS Locum Tenens or MANAGER. 36 years of age. Minor. Teetotaller. Good references. MINOR, 77, Gt. Portland St., W.

ENGLISH NEWS.

The Sale of Food and Drugs Bill, introduced by the Government, was down for consideration in Committee on Thursday night, and the extensive list of proposed amendments covers seven folio pages. Not the least important is the amendment to be moved by Sir Charles Cameron, who proposes to introduce into the Bill a clause establishing a board of reference, on the lines suggested by the Select Committee. The proposed clause is to the effect that "The Board of Trade shall appoint a Standing Committee on Food Standards to be composed as follows:—Each of the following bodies, that is to say, the Local Government Board, the Board of Agriculture, the Society of Public Analysts, the General Medical Council, the Institute of Chemistry, and the Pharmaceutical Society shall name a representative, and the Board of Trade shall, if it think fit, appoint such nominee to be a member of the Standing Committee of Reference on Food Standards. But if the Board of Trade object to any person so nominated, it may require any of the bodies aforenamed to nominate three persons, from whom the Board of Trade shall select one as the representative of the body on the said Standing Committee, and the principal officer of the Government Laboratory at Somerset House shall, ex-officio, be a member of the said Committee. And the said Standing Committee shall be empowered to make such order as they think proper from time to time respecting standards of the quality and purity of food, and such orders, if and when they have been confirmed by one of her Majesty's Principal Secretaries of State, shall have the force of Law." Another clause proposed by the same member states that "When an employer is charged with an offence under this Act, he shall be entitled, upon information duly laid by him, to have any other person whom he charges as the actual offender brought before the Court at the time appointed for hearing the charge, and if, after the commission of the offence has been proved, the employer proves to the satisfaction of the Court that he has used due diligence to enforce the execution of the Sale of Food and Drugs Acts, 1875 to 1899, as defined by this Act, and that the said other person had committed the offence in question without his knowledge, consent, or connivance, the said other person shall be summarily convicted of such offence, and the employer shall be exempt from any penalty."

Preston Wholesale Druggists and Christmas Presents.—At the White Horse Restaurant, Preston, on Thursday, March 10, a meeting of wholesale druggists and drysalters was held to take into consideration the question and policy of discontinuing the practice of giving Christmas and New Year presents. The chair was occupied by Mr. T. Seed, and Mr. J. C. Beardwood, who officiated as Secretary, explained that an allied trade had unanimously resolved not to give presents under penalties. He read letters from wholesale druggists and drysalters in the town in favour of the discontinuance of the custom. Messrs. Fell Bros. wrote "That they had never given presents and did not intend to do so." The letter of Mr. A. Waterworth, wholesale druggist, stated: "I would like to point out some of the difficulties in the way which do not seem to have occurred to your Committee. Supposing a traveller in a weak moment gave a shilling to a child in a shop, I think employers should not be held responsible. All our travellers should be bound in a lesser sum, say £2 10s. as a deterrent. Then, again, I think you should put yourselves in connection at once with associations in Blackburn, Burnley, and Wigan, with a view to their adopting a similar movement. To discontinue giving in Preston only would be of very little advantage to me and others in my business, and, worse still, our competitors from the towns named work Preston as well as they can, and I have no doubt they find it hard work, but when we stop giving we shall open the door for them to come in. . . From what I can learn through commercial travellers all these people are not only willing but anxious to stop giving, but dare not, unless the movement is general. . . However, I am agreeable to join Preston only, or a large area, if the travellers' clause is included. They would not be required to deposit the money. If one breaks the agreement the employer should pay the amount to the treasurer and stop it out of the salary."—Mr. Thomas Blezard wrote that he was also in favour of abolishing Christmas presents.—Mr. L. Marsden, commenting on the correspondence, suggested that the wholesale druggists should be responsible for their servants, and that the travellers should be bound as well as the masters.—Mr. Proctor said the evil of giving Christmas presents had grown to such a deplorable extent that the time had certainly arrived when it should be stopped. But it was not Preston alone they had to compete with, for they encountered greater difficulties outside the borough than inside.—Mr. Kay was of opinion that the meeting should not pledge to any resolution unless the other representatives of the trade who had not acknowledged the circular attended and advanced their opinion.—The Secretary replied that Messrs. Blezard, Marsden, Kay, Waterworth, Fell Bros., Woods, Goodair, T. Parkinson, and W. Parkinson were in favour of the proposal.—Mr. Dixon said it was absolutely essential for the success of the scheme that they should be united.—Mr. Parkinson was of opinion that the practice would soon cease if they could persuade the wholesale druggists and drysalters of Blackburn to join with them.—Mr. Proctor then proposed, and Mr. T. Parkinson seconded, the following, which was unanimously adopted:—

> That we, the wholesale druggists and drysalters of Preston, pledge ourselves under any circumstances whatever not to give any Christmas or New Year gifts in the future, and that the sum of £10 be deposited in the hands of the Hon. Treasurer on December 1 in each year, and shall be held by him until March 1, and anyone failing to carry out the resolution shall forfeit the same to the Infirmary.

Midland Pharmaceutical Association.—A smoking concert was held in connection with this Association, on March 9, Dr. Leedham Green's lecture, announced for the evening, having been postponed. Mr. Perry took the chair, and there was a large attendance. Amongst those taking part in the programme were Messrs. Perry, Spear, Holland, Wilson, Manns, Hughes, Longmore, Wallace, Baker, Minton, Cartwright, and Bromley.

Mr. F. H. Prosser has accepted the Secretaryship of the Trade Committee of the Midland Pharmaceutical Association.

Pharmacy Students Visit a Soap Works.—One of the most interesting of the series of educational visits in vogue at the Imperial College of Chemistry took place on Monday last, when a visit was paid to the City Soap Works, of Messrs. D. & W. Gibbs, Ltd., Wapping. The party were met by Mr. K. Y. Gibbs, one of the principals, who, after introducing Mr. Brown, the chief chemist to the works, escorted and explained to the students the whole process of soap and glycerin making. The casks of tallow are emptied by means of steam and the melted fat is run down a chute into the tanks, where it meets with caustic soda arriving by pipes from the other side of the works. The whole is then subjected to the action of steam and kept in motion. The largest tank in use has a capacity of fifty tons. The soap is separated from the lees by means of brine, and is afterwards run into a traveller, which in turn carries it to the frames, in which it remains for three days. It is afterwards cut to suitable and convenient sizes. Curd soap is made by dry heat, the steam passing through the tanks in coils. The steam employed in the works is generated in seven boilers, each thirty feet long, and maintained at a pressure of three atmospheres. The lees from the tank containing the salt and the crude glycerin is, after concentration *in vacuo*, subjected to centrifugal force. The moisture containing the glycerin flows away, leaving the practically dry salt. The fluid is then distilled, the glycerin recovered and purified by redistillation, decolorised with animal charcoal, and filtered. The works are models of cleanliness and good arrangement. Mr. Frederick Davis thanked Mr. K. Y. Gibbs on behalf of the students.

Food and Drugs Act Prosecution.—At North London Police Court, on Monday, March 13, May's Drug Stores, Limited, of Winchester House, Old Broad Street, were summoned at the instance of the Hackney Vestry for selling sweet spirit of nitre which was deficient in its essential spirit (ethyl nitrite) to the extent of 65 per cent.—Mr. Abinger, instructed by Messrs. Rawlings, appeared for the defendants.—Mr. Tiddeman prosecuted for the Vestry.—The sample was purchased at the branch depôt of the Company in High Street, Stoke Newington. The report of the public analyst was not disputed, but the defence raised by Mr. Abinger was that the spirit quickly lost strength, and he contended that, as the sample was divided into large white glass bottles, giving full exposure to the light and to a considerable volume of air, this process would go on very quickly, and before the sample could be analysed it would have lost the amount of strength indicated. A number of chemical experts were called in support of this contention, and Dr. Henry Wilson Hake, lecturer on chemistry at the Westminster Hospital, spoke to making a number of experiments

which showed how quickly the spirit would evaporate unless properly treated.—Mr. Ernest Owen, described as a chemist, but not registered as such, said that he served the sample to the inspector and subsequently sent another sample from the bulk, which was analysed and found to be of the required strength. In reply to the magistrate, however, the witness admitted that he kept the bulk of the spirit in a dark cellar. He put small quantities into a clear glass bottle on a shelf in the shop fully exposed to the light, and it was from this bottle that the sample was served.—Mr. Fordham said that the defence left it open to him to come to the conclusion that the evaporation had taken place in the shop. If the defence was correct, then the chemist must have been very careless. It was a serious matter to sell drugs which were only half the value of the article asked for, and he should impose a fine of £10, with £2 2*s.* costs.—Mr. Abinger said that his clients would appeal.

THE TIMOTHY WHITE COMPANY, chemists, 51, High Street, Sandown, now have a photographic department in connection with the establishment, also well-appointed dark rooms.

CAMBRIDGE PHARMACEUTICAL ASSOCIATION.—A meeting of this Association was held in the University Botanical Lecture Theatre, Cambridge, on Friday, March 10, the President, Mr. Alderman Deck, in the chair. There was a large attendance, Professor J. Reynolds Green delivering a lecture on "The Nervous System in the Vegetable World." At the conclusion of the lecture Mr. A. S. Campkin moved a hearty vote of thanks to Professor Green, which was seconded by Mr. White and carried by acclamation. Votes of thanks were also passed to Mr. Shrubbs for manipulating the lantern and to Dr. Ward, of the University Botanical Department, for the use of the room.

POISONING BY MORPHINE.—An inquiry was held at Bristol, on Friday, March 10, touching the death of Arthur Wickham Cooke, aged 44, formerly a school teacher at 2, Apsley Villas, Kingsdown. Mary Cooke, the sister of the deceased, said that her brother was in the habit of taking morphine in the form of 1-grain morphine suppositories for stricture of the urethra. Recently he had been unwell. William Pearce, the proprietor of a boys' school at Kingsdown, said that on Thursday, March 9, at 9.15 a.m., not finding deceased in his study, he went to the bedroom and found him lying dead in bed, but fully dressed. A doctor was sent for. A box containing morphine suppositories and a similar box empty were found. Dr. James Wilding said that when he was called in deceased had probably been dead about two hours. Death was due to morphine poisoning. A verdict was returned that "Deceased died from morphine poisoning, the morphine having been taken by misadventure."

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION.—The second annual dinner of the above Association will be held at the Hotel Métropole, Newcastle-on-Tyne, on Wednesday evening, March 22, at 8 p.m. Mr. F. Schofield (Morpeth), the President of the Association, will preside. Tickets, 4s. each (exclusive of wine), may be obtained from the Hon. Secretary, Mr. F. Gilderdale, 19, Groat Market, Newcastle-on-Tyne.

THE LAST DANCE OF THE SEASON.—We are asked to announce that the last Cinderella dance of the series in connection with the Chemists' Assistants' Association will take place on Thursday, March 23, and that tickets can be obtained from Mr. C. Morley, 3, Bucklersbury, E.C.; or of Mr. H. H. Robins, 113, Ridley Road, Forest Gate, E.

FOREIGN UNIVERSITY DEGREES, as was recently pointed out in the Journal (*ante*, p. 216) are threatened with attack in a little Bill before Parliament, which proposes to make it compulsory on the graduates of foreign Universities, in using the style of M.A., etc., to show at the same time the source from which the degree is obtained. As might be expected, the suggestion has not been received with unmixed favour, and a correspondent of the *Standard* asks if it would not be well to extend the proposed regulation to the holders of English degrees. There is not the least doubt that it would, and many will agree that it cannot be supposed that all foreign degrees are necessarily inferior to British, or that they vary in value as between themselves any more than do the degrees of our home Universities. Without attempting to draw any invidious distinctions between the honours conferred by our different educational centres, the writer of the letter referred to expresses the view that, however much the holders of the degrees may differ in estimating their respective importance, all would at least allow that very marked differences exist. Why, then, he asks, should not the public, whose respect these appendages are supposed to command, have the opportunity of knowing whence they are obtained, and so be enabled to place its own value upon them?

MR. OSWALD A. READE, Ph.C., R.N., will shortly be leaving the Naval Hospital, Stonehouse, for Haslar, Portsmouth. His departure will be a great loss to the local association at Plymouth, of which he is at the present time Vice-President, and in which he has always taken an active interest. The loss will be more especially felt by the members of the junior section of the Association, with whom Mr. Reade is most deservedly popular. His success as a teacher in botany has been distinctly shown by two of his pupils gaining, last summer, the silver medal and certificate of the Pharmaceutical Society in connection with the herbarium competition.

THE FIRST LIST OF STEWARDS in connection with the annual dinner of the members of the Pharmaceutical Society is published in the advertisement pages of this week's Journal, and we are requested to state that other members who desire to have their names included in the list should at once communicate with the Hon. Secretary, Mr. Richard Bremridge, 17, Bloomsbury Square, London, W.C.

ARSENIC IN OATMEAL.—At an inquiry held by the Portsmouth Coroner (Mr. T. A. Bramsdon) on Wednesday, March 8, with reference to the death of Edith Alston Bullock, a child 14 months old, at Southsea, on February 17, it appeared that some oatmeal porridge had been given to the child for breakfast, she had become suddenly ill, and died the same night. Traces of arsenic were, on analysis, found in the oatmeal from which the porridge had been made. The oatmeal had been purchased at a grocer's shop at Southsea, and the tradesman had obtained it from a wholesale merchant in the town.—Evidence was given by Lily Lewis, a cook in the service of the Rev. J. C. Martin, M.A., minister of the Circus Church, Portsmouth, to the effect that on the night of January 30, she purchased 1 lb. of oatmeal at the shop in question, and that her mistress after eating some gruel became very seriously ill, and died early next morning. The witness herself took some of the gruel, and was soon afterwards seized with pains in the stomach and sickness, but she recovered during the night. The Coroner said it would be most painful if he had to hold an inquest in the case of Mrs. Martin. He was most anxious to, if possible, avoid it, for if he had to hold such an inquest he would have to issue an order for the exhumation of the body, which would be extremely distressing to the family. The certificate of death in the case of Mrs. Martin assigned kidney disease as the cause of death.—At an adjourned inquiry no fewer than twenty-three witnesses were called, and it was proved that several persons had been poisoned, two of whom had died. In the case of Mrs. Martin the evidence left no doubt that her death was due to arsenical poisoning.—The Coroner had decided not to order the exhumation of the body, as he thought nothing could be gained by doing so, but he strongly commented on the action of the medical men in not having suspected poisoning.—The jury returned a verdict that the child died from arsenical poisoning administered in oatmeal purchased at Mr. Smith's shop, but added that there was no evidence to show how the poison got into the meal.

MR. J. PILKINGTON, 137, Marsland Road, Brooklands, Sale, near Manchester, has opened a new pharmacy, the entire fittings being supplied by Messrs. Ayrton and Saunders, Liverpool.

SCOTTISH NEWS.

A GLASGOW TRAGEDY.—Between midnight and 1 o'clock on Friday morning last week a joiner, James Thornton, 30 years of age, attempted to commit suicide in Kelvingrove Park, Glasgow, near the Museum, by drinking a quantity of laudanum. He was promptly removed by two constables to the Western Infirmary, where he completely recovered. About 5 o'clock on the same evening a young woman, Margaret M'Lachlan, 28 years of age, a machinist, who resided at 22, Stirling Street, died in the Western Infirmary from the effects of laudanum poisoning. Thornton

stated that he bought a bottle of laudanum in a shop in Glassford Street on Tuesday, and that he and the woman M'Lachlan spent the evening in a hotel. On the following morning they went to the house of a friend in Raglan Street, and afterwards were drinking in the district till about three o'clock in the afternoon. While they were in a public-house, the woman took from him a bottle containing 1s. worth of laudanum, and swallowed its contents. She began to stagger, and he had her conveyed immediately to the Western Infirmary, where she was detained and treated, but she died at the time already stated. Thornton, after leaving the woman in the infirmary, went back to the same druggist's shop, and purchased another 1s. worth of laudanum, and it was this dose he was taking when the police came upon him in the park. He states that he and the woman M'Lachlan, having been out of work for some time, and having no fixed abode, had decided to die together by poisoning themselves.

IRISH NEWS.

Pharmaceutical Society of Ireland.—Applications for the April examinations should be lodged by 11 o'clock a.m. on the following dates: For the Preliminary examination, on Tuesday, 21st instant; Pharmaceutical Assistants' examination, on Monday, 27th instant; Registered Druggists' examination, on Tuesday, 28th instant; Pharmaceutical Licence examination, on Wednesday, 29th instant.

Mr. W. A. Harvey, M.P.S.I., compounder of medicines to the Newcastle West Union, is not to be trifled with. The question of his attendance at the workhouse having been raised, Mr. Harvey bearded the Board and pointed out that his hours of duty were not defined. They merely stated he should attend before noon. He wished it to be distinctly understood that he would make no change. The Guardians meekly acquiesced.

FRENCH NEWS.

Honour for a Pharmaceutical Assistant.—Monsieur Louis Edde, senior assistant of the Pharmacie Boissy, 2, Place Vendôme, Paris, has just been decorated and gazetted an "Officier de l'Academie." The recipient of this somewhat rare honour amongst pharmacists is a well-known and highly-respected member of the craft, and has occupied his present post for upwards of twenty-two years, which fact speaks volumes for him. He is, moreover, a journalist of no mean order, and is the Paris correspondent of a provincial organ known as the *Patriote de Chateaudun*.

Lecture on the Diamond.—On the 4th of last month Monsieur Moissan, the distinguished chemist and lecturer, gave his audience a treat in the shape of a lecture on the diamond. This conference was held in the Richelieu Amphitheatre at the Sorbonne, tickets for which had been distributed to all the Faculties; but unfortunately space could not be found for all of that multitude of students and others who flocked to give a hearty welcome to the interesting speaker. The front seats were occupied by some of his fellow professors, notably M. Gréard, Vice-Rector of the University of Paris; M. Planchon, Director of the School of Pharmacy; and Messieurs Troost, Darboux and other professors of the School. Amongst the audience were many ladies desirous of hearing something about the stone which serves to make such pretty personal ornaments, the effects of which they know well how to appreciate. The lecturer commenced with the history of the diamond, and then gave a *résumé* of the works of many savants of this century who had attempted its artificial reproduction, giving the place of honour to an English savant who was the first to find a method. Having a furnace and all the necessary paraphernalia on the platform, he proceeded to the task of producing a stone, which after a few failures he succeeded in doing. A very enjoyable and instructive lecture then came to a close.

Pharmaceutical Crisis.—The *Revue Médico-Pharmaceutique* greatly deplores what it calls "la crise pharmaceutique" which pharmacy now seems to be traversing in France, as elsewhere. The causes, it says, are many, but its remedies, alas! are few. To the former it attributes the ever-increasing number of diplomaed aspirants, the keen competition thereby entailed, and the reduction of tariffs ensuing; the fabrication of medicated wines, etc., by non-pharmaciens, and their sale in small "drinks" at cafés and bars; the ridiculous cutting of patents to cost price, and sometimes below. "With such forces to contend with, is it surprising," says this journal, "that the pharmacien's lot is an unhappy one?" But, to pile on the agony, doctors seem to have gone completely over to the enemy. Seldom does a prescription appear but what it contains one or more specialities. It would seem as though doctors imagined that the shady practices of one or two miserable delinquents calling themselves pharmaciens were resorted to by every member of the craft, and to ensure that the patient gets what he prescribes he orders a patent medicine of which he imagines he knows the formula, and so rests satisfied that he has safeguarded his client and checkmated the chemist, the latter thought giving him unbounded delight. To illustrate the extent to which this fad is carried, a copy of a prescription of Dr. Potain, an illustrious Paris physician, who might be credited with knowing better, is appended. It was for a young woman suffering from chloro-anæmia and dyspepsia:—

1. Take daily in a glass of warm milk, a teaspoonful of the following solution:—

Chlorure de Sodium	20 Gr.
Bromure de Sodium	5 Gr.
Iodure de Sodium	1 Gr.
Eau Distillée	100 Gr.

2. Five minutes before each meal take 20 drops of the following mixture in a little water:—

Teinture de Quinquina, Teinture de Racine de Colombo	aa 4 Gr.
Teinture de Badiane, Teinture de Noix Vomique	aa 2 Gr.

3. Pilules de pancréatine Defrésne, and tablespoonful doses of O's solution of biphosphate de chaux.
4. As a mineral water drink eau d'alet and take one or two Bordeaux glassfuls of bière de malt de Désjardins at each meal.
5. Coton iodé de M. . . . .
6. Pilules de Morton, one three times a day.

When such eminent men pin their faith to specialties instead of writing a sound old-style prescription, it is no wonder that the small fry (amongst whom are many who do not know how to write a prescription) copy their example. Hence this movement on foot for the suppression of the specialty. Success to it, then!

Not a Chemist's Error.—In a former issue of this Journal a note was published dealing with the tricks resorted to by some unscrupulous individuals for obtaining poisons. An illustration has just been furnished by what is now known as "The Sensational Bianchini Poisoning Case," which has been occupying the Paris Court of Assizes for a few days, Madame Bianchini being charged with attempting to poison her husband. The facts are as follows:—M. Bianchini and his wife had quietly made arrangements for a divorce, on account of the latter's suspicious conduct with a M. Mayer. The three had supper together a few nights ago at Pousset's Restaurant, after which M. and Madame B. went home together. The following day M. B. complained of a fearful headache, so his wife gave him some antipyrine in a little Evian water. He thought the draught had a peculiar taste, and remarked the fact to his wife. Later in the day, she administered sundry cups of coffee to him, but he grew worse, and towards 8.30 p.m. she sent for Dr. Courtaix. He failed to diagnose the complaint, so other doctors were summoned and were equally puzzled. One thing which they all noticed was the peculiar dilation of the pupils of the patient's eyes. A consultation was agreed upon between Drs. Chevassu, Courtaix, Gilles de la Tourette, and Dr. Charcot the next day. During the afternoon Dr. Chevassu received a despatch from Mme. Bianchini saying that her husband was "black; he was dead, more dead than any man I ever saw." The doctor bled him twice and injected caffeine, but he still remained motionless. Dr. Chevassu, in his evidence in Court, stated that Mme. Bianchini asked him for hydrochloride of morphine for herself. When he refused it, she requested atropine for her dog's eyes. Then the condition of her husband's eyes flashed upon the witness's recollection. Nevertheless he wrote her out a prescription for 10 centigrammes of atropine in 10 grammes of distilled water, and took it to the chemist, telling him to write upon the label, "for the dog's eyes." He was, however, so alarmed that he considered it his duty to apprise his colleagues of his suspicions that M. Bianchini was

suffering from atropine poison, and that, moreover, it was, in his opinion, his wife who was administering it. The medical evidence at the trial was very conflicting, Dr. Charcot maintaining that poisoning by atropine could not be proved. Dr. Brouardel, Dean of the Faculty of Medicine, who with Messieurs Ogier and Vibert had instructions to examine into the depositions of the doctors, said that the patient's symptoms resembled those of atropine poisoning. Having admitted this theory, the experts were examined as to whether, in their opinion, the poison was administered in one dose or in several small doses at intervals of a few days. They considered that the relapses of the patient were due to this administration of fresh doses of poison. The hypothesis of a series of small doses precluded any admission of the theory that the patient had poisoned himself, although upon his wife's evidence he had once attempted to do so with atropine. That Mme. Bianchini had procured atropine upon various occasions from chemists by forging doctors' signatures was, however, conclusively proved, and this, no doubt, had much weight in deciding the verdict pronounced by the judge, who, on Wednesday, sentenced her to five years' penal servitude, adding that her plea of a chemist's error would not avail her. M. Bianchini, however, firmly believes in his wife's innocence, declaring that he cannot think her capable of such an act, especially as she could have no end to gain in putting him out of the way that she could not attain while he was living.

Trade Notes.

Messrs. Burroughs Wellcome & Co. send specimens of "Tabloid" Bismuth and Dover powder. This preparation is made in accordance with the following formula: Bismuth subnitrate, 2½ grs.; Dover powder, 2½ grs. The combination of bismuth with ipecacuanha and opium has been found to give relief in acid dyspepsia and in irritable conditions of the stomach. In diarrhœa and dysentery good results are often obtained by the administration of frequent small doses of these drugs in combination.

Messrs. Mark Whitwill, Son, & Judge, 6, St. Helen's Place, London, E.C., and Bristol, have been appointed sole representatives in this country of the Corsican Government Concessionaire of the natural mineral water from the celebrated spring at Orezza in Corsica. The value of this water as a powerful tonic has, since the year 1776, attracted the notice of scientific men, but the attention of the profession in France was specially directed to its valuable qualities through an official report published by the Academy of Medicine in Paris in September, 1853, on the result of an analysis by Dr. Poggiale, Professor of Medicine, and confirmed in the following year by Mons. Ossian Henri. The water is being brought prominently under the notice of the medical profession in the United Kingdom, so that chemists should be prepared to supply any demand that may arise for it. The water is guaranteed to be bottled fresh at the springs.

Messrs. James Burrough, Ltd., Cale Street Distillery, Chelsea, S.W., intimate that the firm is now on the telephone, their number being Kensington, 272.

Messrs. Southall Bros. & Barclay, Ltd., wholesale and export druggists, Birmingham, send a copy of their export journal and prices current of drugs, chemicals, specialties, etc., dated February, 1899. It contains a considerable number of alterations and additions, which have been made in the various sections of the list, and in order to facilitate reference to these a summary of them is given on page 4. Copies of the list may be had on application.

Mr. H. Silverlock, 92, Blackfriars Road, London, S.E., has for many years past published an excellent set of poison labels for use on shop rounds or dispensing bottles, and those can now be obtained revised in accordance with the new British Pharmacopœia. They are printed on orange paper, varnished, and bear the name of the article, the strength and dose, and the word "poison," as well as an indication whether the poison is included in Part I. or Part II. of the Poison Schedule. The use of these labels fully meets the requirements of the first of the new poison regulations, and we question whether they will not also suffice to render the bottles, etc., distinguishable by touch as required by section (*b*) of regulation 2. In case anything more is required, however, Mr. Silverlock is prepared to supply prepared strips of glass paper to stick at the back of the bottles, or wherever may be found most convenient. The set of labels is supplied for 3s. 8d. post free.

CHEMICAL SOCIETY.

A meeting was held on Thursday, March 2, Professor Dewar, LL.D. F.R.S., in the chair. The first paper was by H. J. H. Fenton and Mildred Gostling on

Brom-methylfurfuraldehyde.

From certain keto-hexoses, or substances producing them by hydrolysis, the authors have obtained a substance which turns out to be brom-methylfurfuraldehyde. The molecular weight of the compound, which has the empirical formula $C_6H_5BrO_2$, lies between 182 and 189·5. Experiments show that it is readily hydrolysed, is sparingly soluble in cold water, and gives an acid on oxidation with silver oxide.

In the discussion that followed, Professor Armstrong said he was inclined to doubt the purity of the substance. In his opinion a pure substance would not possess so intense a colour.

Mr. Cross rose to offer his congratulations to the authors; in this he was joined by the President.

Mr. Fenton having replied, Mr. W. R. Dunstan was then asked to read a communication by himself and Ernest Goulding on

The Reaction of Alkyl Iodides with Hydroxylamine, and the Formation of Alkylated Hydroxylamines and Oxamines.

The investigation was originally started in the Pharmaceutical Society's research laboratory. It is found that on treating hydroxylamine with methyl iodide a mixture of iodides is obtained, consisting partly of $(NH_2OH)_3,HI$ and partly of $(NH_2OH)_2HI$, but the normal hydriodide is not present. A compound having the formula $N(CH_3)_3,O,HI$ is also obtained, and a similar series is got by using ethyl and propyl iodides. The properties and reactions of these derivatives were described, and samples handed round. It was mentioned that a German worker in the same field had obtained results that are utterly at variance with those put before the meeting, and not borne out on close investigation.

The paper was followed by an interesting discussion.

Professor Armstrong drew from it the moral that German chemical work must never be accepted as accurate without first proving it experimentally. It was usually conducted, said he, by young men who set out with a fixed idea as to the conclusion of their research, and consequently got out results to order. He dismissed the modern theory of ions as "ion twaddle."

Dr. Hewitt asked whether the authors had read a communication by Bamberger on the subject of hydroxylamines in the current number of the *Berichte*.

Mr. Groves and Dr. Forster having spoken,
the President endorsed Dr. Armstrong's remarks on the true value to be set on German work. There is too much disrespect shown in these days, he thought, for the persons who have gone before and for their work. It too frequently happens that someone will bring forward, as his own, work which another has performed. All this is hard to bear. Faraday, when young, groaned under similar treatment, but as he grew older he declared that he could tolerate anything.

After Mr. Dunstan's reply, the last paper was read by Dr. Lapworth on

Derivatives of α-α′-Dibrom-Camphor-Sulphonic Acid.

Camphor-sulphonic acid, when treated with bromine and an alkali, gives mono-, di- and tri-brom derivatives. In the di-brom acid the bromine atoms are attached to the same carbon atom. Some humour appeared at the close of the paper when Dr. Forster broka lance with Dr. Lapworth over the nomenclature of these compounds, the latter insisting that all the compounds were the π-derivatives; to this view Dr. Forster took exception.

The President said he hoped the "camphor chemists" would disagree for many a day, so that more and more might be learnt as to the chemistry of the subject. He then announced his intention of presenting to the Chemical Society an original Daguerrotype of Dalton that had lately come into his possession, as he was anxious to leave behind him some tangible mark of his appreciation of the way in which all the members had worked together with him harmoniously during his term of office.

MARKET REPORT

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

March 16, 1899.

There has not been very much doing in Drugs and Chemicals during the past week, the one exception being again Quinine, in which a further large speculative business has been done, at constantly advancing values. In fact, some cautious individuals are beginning to shake their heads at such a rapid advance, and to suggest that possibly the Java bark growers, who during last year sent what was then considered an excessive supply at the comparatively low prices then ruling, may, perhaps, be tempted by the present so much higher price ruling for their product to do the same again, in which case those speculators who have been paying the late comparatively high prices for Quinine may possibly have some difficulty in closing their ventures at a satisfactory profit. It must not be overlooked that with an article which has for years been below 1s. per oz., there is a very great difference between stocking at 10d. per oz. and purchasing, after a rise of about 75 per cent., at 1s. 5d. per oz. The future alone can show whether this view is correct. Quicksilver is not quite so firm, but Mercurials are without change. Iodides and Bromides are steady at unaltered values. Camphor quiet but firm. Opium weak. Morphia quiet. Codeia firm. Acid Citric quiet and weak. Tartaric and Cream of Tartar steady. Acid Carbolic firm. Sulphate of Ammonia again dearer and very firm. The following are prices actually ruling for some articles of principal interest :—

Acetanilide—Is still quoted 11d. per lb. for 5-cwt. lots, up to 1s. 2d. per lb. for smaller quantity.

Acid Carbolic.—Market is quiet but steady at 6⅝d. to 6¾d. per lb. for 35 36° *ice crystal*, in 2½ cwt. drums and overcasks; 7d. to 7¼d. for 39-40° *ice crystal*, and 8d. to 8¼d., according to make, quantity, and packing, for the 39-40° *detached crystals* (which is now the B.P. qualilty). *Crude*: 60° F. 2s. per gallon, 75° F. 2s. 6d. per gallon. *Liquid*: 95-98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon in 40-gallon casks.

Acid Citric—Is very quiet at 1s. 3½d. to 1s. 4d. per lb. for *crystals* on the spot.

Acid Tartaric—Is steady at 1s. 1d. per lb. for *English*, and 1s. 0½d. per lb. *c.i.f.* for *foreign*.

Ammonia Compounds.—The only change in price to report is a further advance in *sulphate*, which is very firm at £10 10s. to £10 11s. 3d. for grey prompt, 24 per cent., London and Hull; Leith prompt, £10 10s.; Beckton prompt £10 7s. 6d. paid, April-June £10 5s.; Beckton terms £10 6s. 3d. per ton.

Antimony Regulus—Is quoted £38 10s. to £39 per ton; *crude* Japan *Black Sulphide*, £24 per ton, landed.

Antipyrine.—Dr. Knorr's brand is unchanged, while *Phenazone* is offering at 6s. per lb., and even somewhat cheaper for large lots.

Bleaching Powder (Chloride of Lime).—*English* is quoted £6 per ton.

Boracic Acid.—Steady at 26s. per cwt. for *crystals* and 28s. for *powder*.

Borax—Steady at 16s. 6d. for *Crystals*, and 17s. per cwt. for *Powder*.

Bromides and Bromine—Are firm at prices hitherto ruling.

Camphor—Steady at unchanged values, both for *crude* and for *refined*.

Castor Oil.—Belgian first pressing spot, £26 to £26 10s. per ton; July-December, £25 10s.; second pressing, £24 10s., ex-wharf; Hull manufactured, £25 to £26 per ton, in barrels, 2⅞d. to 3d. per lb., in cases, ex-wharf, London, for prompt delivery; London pressed, 25s. 6d. to 26s. per cwt., in barrels; French, 26s. to 26s. 6d.

Cloves—Privately *Zanzibar* are dull and weaker, with scarcely any business. April to June delivery done at 3½d., and further sellers. At auction 48 cases *Penang* all bought in, fair picked at 7½d. Of 65 bales *Zanzibar* 20 bales sold, fair at 3⅜d.; the remainder bought in, including fine bright picked new crop at 6d.

Coal Tar Distillation Products.—*Toluol*: Commercial, 1s. per gallon; pure, 1s. 4d. per lb. *Benzole*: 50 per cent., 8d. per gallon; 90 per cent., 7½d. per gallon. *Creosote*, 3d. *Crude Naphtha*: 30 per cent. at 120° C., 3¼d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 5d.; 90 per cent. at 160° C., 1s. 1d.; 90 per cent. at 190° C., 1s. 3d. per gallon. *Anthracene*: A, 3¾d. per unit; B, 2¾d. *Pitch*, 26s. per ton, *f.o.b.* *Tar*: Refined and crude, 12s. per barrel, 2d. per gallon.

Cocaine.—Makers' price remains unchanged at 11s. to 12s. per oz. for the *Hydrochlorate* for 100-oz. lots in 25-oz. tins, there are, however, sellers from second-hand at rather below the above figures.

Codeia—Firm at 12s. 6d. per oz. for the pure, and 1s. per oz. less for the salts.

Cod-Liver Oil—Is perhaps a shade firmer at nominally unchanged prices, as given last week.

Cream of Tartar.—First White *Crystals* are quoted on the spot 76s. to 77s. *Powder*, 78s. to 82s. per cwt., according to strength.

Galls—Are quiet but steady at 57s. 6d. per cwt. for *China* on the spot and same price for blue *Smyrna*.

Ginger.—At auction the demand for *Cochin* was slow, 481 bags washed rough being all bought in at 25s. to 27s.; 29 cases cut kinds sold at lower prices, medium and bold rough scraped at 58s., small and medium at 32s. to 39s. *Jamaica* met a fair demand, and of 334 barrels 156 barrels sold, extra bold hard at 92s., good bold and medium 82s. 6d., fair to good medium 66s. 6d. to 75s., ordinary to good ordinary at 57s. to 63s., of *Japan* 20 bags offered and bought in, fair limed at 20s.

Glycerin—Quiet, but steady at unchanged prices.

Iodides and Iodine—Are steady at unchanged prices.

Mercurials.—There is no change to report in makers' price.

Morphia.—Makers are fairly busy executing contracts. There is, however, not much fresh business passing. The *Hydrochlorate Salt* in powder is still quoted 4s. 6d. per oz. in bulk and for quantity.

Nitrate of Soda—Is quoted £8 per ton on the spot, for both ordinary and refined.

Oils (Fixed) and Spirits.—*Linseed* firm and dearer, spot pipes, London, £17 10s.; barrels, £18. May to August, £17 7s. 6d.; September to December, £17 2s. 6d. Hull spot naked £17 2s. 6d.; April, £16 17s. 6d.; May to August, £16 5s.; September to December, £15 17s. 6d. *Rape*: Steady at unchanged prices. *Cotton*: Firm at 5s. to 10s. per ton advance on prices quoted last week. There are no changes to report in the other articles usually quoted under this heading.

Opium—Market is flat, prices being nominally unchanged to a trifle easier.

Oxalic Acid—Is still quoted 3d. to 3⅛d. per lb. nett, delivered free London.

Phenacetin—Is quiet and weak at 3s. 9d. to 4s. per lb., large quantity being obtainable at 3s. 6d. per lb.

Potash Compounds—Are steady and without change in values.

Quicksilver—Is slightly easier at £8 2s. 6d. per bottle from second hand, importers' price being unchanged at £8 5s.

Quinine.—Speculation in this article has become fast and furious, about 150,000 ozs. having changed hands at 1s. 4⅜d. to 1s. 5d. per oz. for *B & S* and or *Brunswick* for May delivery, 1s. 4⅞d. to 1s. 5⅛d. per oz. for June delivery, and 1s. 5⅜d. to 1s. 5½d. for August for 1000 oz. lots in tins and cases. To-day, however, the market is quieter. Makers of the best German brands quote 1s. 5d. per oz. for 1000-oz. lots in 100-oz. tins; they will, however, only sell limited quantities, and then to regular customers only.

Soda Compounds.—The prices quoted last week remain practically unaltered.

Spices (Various).—*Black Pepper*: Only 82 bags Singapore sold, fair to good fair at 5⅛d. to 5¼d. *White Pepper*: Of Singapore 42 bags sold, good at 8¾d.; 2 bags Ceylon sold, fair at 8d. *Cayenne Pepper*: 5 crates, containing tins, Nepaul, bought in at 1s.

Chillies: 90 bales Zanzibar sold, without reserve, fair, rather stalky at 33s. *Cinnamon Chips*: 13 bags sold at 3¾d. *Mace* dull; 50 cases Penang bought in; 5 cases West India sold, fair red at 1s. 4d. to 1s. 5d., fair to good pickings 1s. 1d. to 1s. 3d. *Nutmegs* difficult of sale and lower; of 51 cases Penang 10 sold; 80's, rather rough, at 1s. 6d., and 110's at 1s. 1d. to 1s. 2d.; 18 packages West India sold, 82's at 1s. 6d. to 1s. 7d., 95's at 1s. 2d., 110's at 1s., 120's to 126's at 9d. to 9½d. *Pimento*: 601 bags offered but chiefly bought in, only a few bags selling at 4⅝d.

SULPHATE OF COPPER—Is quiet at £23 to £25 10s. per ton, on the spot.

SULPHONAL.—There are still offers at below makers' price, which remains at 17s. per lb. for both *crystals* and *powder*.

To-day's Drug Auctions comprised just 20 catalogues. Business was brisk, however, in only a limited number of articles, the following being the particulars, as far as it has been possible to give same, up to time of going to press :—

ALOES.—The chief lot of interest to-day was 20 cases imported from Uganda, and consisting of 6 cases broken pieces of hepatic aloes of fine dry quality, 2 cases of one pound lumps wrapped in crimson paper and labelled "One pound best refined 'Crown' aloes," and 12 cases of 4 lb. bags of grains and powder. The first 8 cases sold at 102s. 6d. per cwt., being far above their intrinsic value, and the remaining 12 cases at 60s. to 65s. per cwt., which were correspondingly cheap. Good *Socotrine* in kegs were sold at 75s. per cwt., similar quality in brandy boxes being held for 70s. per cwt. For *Curacoa* there was no demand, and all lots were bought in.

AMBERGRIS.—3 tins of rough pieces, with but little flavour, were taken out at 20s. per oz.

ANNATTO SEEDS.—22 bags of fair quality taken out at 4d. per lb.

ANTIMONY.—50 cases *Japan* crude sold at 24s. per cwt.

ARGOL.—3 bags Cape taken out at 35s. per cwt.

ASAFETIDA.—About 400 cases have lately arrived, but the bulk was not ready in time for to-day's sales, and will be offered next Thursday at 11 o'clock. 211 cases of old and new import were offered, but the greater part was of low quality; 10 cases of fair almondy block, greyish part dark and stoney, sold at 60s. to 70s. per cwt., and 3 cases similar at 54s. per cwt.; 1 case block, slightly almondy and rather soft, owing to contact with water, sold at 50s. per cwt. The whole of the commoner grades were bought in; 10 cases of good soft pinky block were withdrawn, the owner's limits not having reached the broker.

ASPHALT.—32 cases fair *Syrian* taken out at 31s. 6d. per cwt.

BALSAM COPAIBA.—5 casks good thick taken out at 1s. 8d. per lb.

BALSAM TOLU.—3 cases sold at 1s. 6d. per lb.

BUCHU LEAVES.—6 bales very stalky and oblong in shape sold at

CALABAR BEANS.—20 bags of fair sound beans were held for 3½d. per lb., the article being reported dearer in Liverpool, where same have long been a "drug," at a much lower price.

CAMPHOR.—5 cases *Japan* refined in 1-oz. tablets were held for

CARDAMOMS—Were in very large supply, the total offerings amounting to 650 cases, but notwithstanding this, prices were fairly maintained. Fine qualities were rather dearer, medium to good steady to about 1d. per lb. cheaper. *Seeds*, however, declined 3d. to 4d per lb. For very fine bold bleached *Mysores* 4s. 3d. to 4s. 4d. per lb. was paid, the second size realising 3s. 10d. per lb.; the splits of these two piles fetched 3s. 5d and 3s. 11d. respectively. Fine *Mangalores* were withdrawn, being held above buyers' ideas. Good seeds sold at 2s. 4d. to 2s 5d. per lb.

CUMMIN SEEDS.—25 bags fair *Malta* were held for 26s. per cwt. 1s. 7d. per lb.

CANELLA ALBA.—25 bales fair quality held for 40s. per cwt.

CASCARILLA BARK.—12 barrels siftings part sold at 25s. per cwt.

CASTOR OIL.—15 cases fair Calcutta seconds bought in at 3¾d.

CHILLIES.—20 bales fair *Zanzibar* bought in at 36s. 6d. per cwt.

CHIRETTA.—11 bales of fair quality were held for 4d. per lb., a bid of 3d. per lb. being declined, while for another parcel rather brownish in colour 4¾d. was the price required.

CINCHONA BARK.—Of 10 bales wild *Calisaya*, 6 bales sold at 9d. per lb. for C.D C.I.; 1 case *red bark* held for 10s. per lb.; 14 packages quilly *Java* cinchona for 1s. 2d. per lb.; 2 cases red *Guayaquil* for 1s. 3d. per lb.; 53 bales *Maracaibo* bark sold at 3¾d. per lb., down to 1½d.

COLOCYNTH.—6 cases small medium *Turkey* were held for 1s. per lb., 4 cases small and broken ditto for the same figure.

COLOMBO ROOT.—126 bags sold at 19s. 6d. per cwt. for good sorts, 18s. for small to bright ditto, and 13s. to 13s. 6d. for stalky ditto, and 11s. for damaged, down to 8s. for badly damaged.

CROTON SEEDS.—21 packages. all bought in at 60s. per cwt. for

CUBEBS.—40 bags stalky bought in at 25s. per cwt.

DAMIANA LEAVES.—2 bales fair green were held for 6d. per lb.

DRAGON'S BLOOD.—Of 14 cases offered only 2 cases dull saucers, sold at £5 5s., fair bright lump and slabs but very damp being held for £10 to £12 per cwt.

ESSENTIAL OILS.—4 cases *Star Aniseed* bought in at 5s. 9d. per lb. 2 cases Dodge and Olcott's *Oil of Sassafras* held for 1s. 6d. per lb. 10 bottles (each 1 lb.) Jakson's English *Oil of Lavender* for 35s. per lb. 1 tin (4 kilos.) *Essence Petitgrain* at 1s. 3d. per oz. 1 tin (10 kilos.) *Essence Patchouli* at 12s. per lb. 1 tin (12½ kilos.) French *Oil Eucalyptus* at 1s. 6d. per lb. 9 cases Japan *Peppermint*, dementholised, were taken out at 3s. 7½d. per lb.

ERGOT OF RYE.—15 bags fair small continental were held for

FENNEL SEED.—20 bags held for 21s. per cwt.
fair quality.

GALANGAL ROOT.—10 bales were held for 21s. per cwt.

GALLS.—4 cases *China* held for 55s. per cwt.

GAMBOGE—In better supply, 45 cases being offered. For 16 cases soft, part drossy pipe a bid of £7 10s. per cwt. is to be submitted, good bright pipe being held for £9 per cwt., dull pickings sold at £6 5s., Saigon pickings held for £5 5s. per cwt.

GENTIAN ROOT.—54 bags cut root taken out at 16s. per cwt., 20 bales whole root being held for the same figure.

GUAZA (CANNABIS INDICA).—133 robbins and 50 bales all bought in at 6d. per lb. for good green tops, rather stalky.

GUM ARABIC.—7 cases grain part sold prior to the auctions, balance being held for £6 17s. 6d. per cwt. 2 cases *Aden* gum sold at 70s.

GUM BENZOIN.—3 cases free *Siam* pea siftings were taken out at £9 per cwt.; 2 cases blocky at £7; 1 case at £11 10s., a bid of £10 10s. being refused. Small to medium free *Siam* bought in at £16. 12 cases *Sumatra* thirds sold at £5 5s.; good seconds at £9 10s.; ordinary seconds bought in at £5 15s. per cwt.

GUM GALBANUM.—10 packages were held for 1s. 3d. for good, down to 1s. 1d. per lb. for darkish blocky gum.

GUM KINO.—2 tins genuine *East Indian* taken out at 6s. per lb. 2 cases of better quality being held for 8s. 5 cases *African* bought in at 2s. per lb.

GUM MYRRH.—48 packages all bought in at 80s. for fair to good pale sorts, 55s. for pea siftings, and 50s. per cwt. for siftings.

GUM MASTIC.—18 cases, of fair quality, were held for 1s. 11d. to 2s. per lb.

GUM TRAGACANTH.—1 case of low quality sold at £5 5s. per cwt.

HONEY.—350 cases *Californian* part dark, part pale and brown, were all taken out. 135 cases pale were all bought in at 42s. per cwt.

IPECACUANHA.—Importers of *Rio* have been very firm privately, and it has not been possible to buy below 12s. per lb. from them, but secondhand holders have shaded the price here and there. At the auctions 36 bales of this quality were offered. The first broker being ready to meet the market, sold 14 bales at 11s. 6d. to 11s. 9d. per lb. for sound. down to 11s. 3d. per lb. for second-class sea damaged. The other holder, however, declined to go below 12s. per lb. No *Carthagena* quality sold, holders asking 8s. to 8s. 2d. per lb.

JALAP.—3 bales sliced, marked, "per land carriage, 30/8/71," having thus been in warehouse nearly 30 years, sold for 4¾d. per lb., while for 8 bales fair heavy whole tubers only 5d. per lb. was bid, a price which was not accepted.

KAMALA.—2 cases very dark in colour were bought in at 8d. per lb.

KOLA NUTS.—3 bags cut sold for 1¾d. per lb.
4d. per lb. 4 bales yellowish-green bought in at 6d.

LIQUORICE ROOT.—41 bales rough *Syrian* bought in at 9s. 6d. per cwt., 5 bales cut, part sea-damaged and mouldy, sold without reserve at 32s. per cwt.

MUSK.—1 bottle grain bought in at 20s. per oz. 5 cases *Tonquin* good old-fashioned Pile 1, small to bold pods, fair shape and well trimmed, were taken out at 50s. per oz. 4 cases Pile 3, medium to bold, fair shape, but damp and pasty, at 25s. per oz.

ORANGE PEEL.—4 cases fair new thin cut were taken out at 7d. per lb. 21 cases ditto at 6d. to 7d., only a few cases selling at the lower figure.

RHATANIA ROOT.—6 bales of fair quality were brought in without mention of price.

Rhubarb.—3 cases round *Shensi*, half grey, half dark fracture fair colour were held for 1s. 3d. per lb.; 5 cases flat ditto, part small, grey fracture, part wormy, for 1s.; 6 cases rough horny round, high dried, medium colour, sold at 5½d. per lb.; 3 cases ditto of good colour at 6d.; 2 cases flat and round mixed, of poor colour at 6½d.; 4 cases very rough and very wormy at 3½d. per lb.; good flat high-dried was bought in at 1s. per lb.; 2nd size ditto at same price; a bid of 9½d. per lb. being refused; good flat Canton was bought in at 1s.; rough pickings, of good colour, but rather wormy, sold at 9d. to 9½d.

Rose Oil.—2 pots bought in at 2d. per oz.

Sarsaparilla.—32 bales *Jamaica* sold readily at 1s. 8d. per lb. down to 1s. 5d. for country damaged, and 9½d. to 10½d. per lb. for badly damaged, these latter prices being subject to approval. 10 bales *Lima Guayaquil* at 1s. 1d. to 1s. 2d. per lb, 8 serons *Honduras* part sold at 1s. 5d. per lb., balance being taken out at 1s. 6d.

Senega Root.—15 bales fair to rather chumpy were held for 1s. 2d. per lb.

Senna.—*Alexandrian*: This grade has been very unsaleable for some time past, but in to-day's sales a string of 34 bales broken leaf, of old crop, were withdrawn, it being understood that these were sold previously for export at about 4d. per lb. A few bales of new crop broken leaf—also withdrawn—realised, it is said, 5d. per lb., and the broker announced that he had sold all that was known to be coming forward "to arrive." *Pods* sold at 4d. per lb. *Tinnevelly*: About 50 bales, in first hands, of very low quality sold at 1½d. to 2¼d. per lb. In the steamer "Peninsular," due here next week, about 70 bales are arriving. Advices from America state that stocks there are getting very low. 10 bales *Mecca* were held for 2d. per lb.

Scammony.—19 cases were all bought in at 26s. per lb. for seconds down to 10s. 6d. per lb. for inferior.

Scammony Root.—80 bales all bought in at 23s. per cwt., a bid of 21s. 6d. for part being declined.

Squills.—10 bags of fair quality were held for 3d. per lb. *Angosturas* being taken out at 3s. per lb.

Star Aniseed.—10 cases fair China were held for £5 10s. per cwt.

Sulphate of Quinine.—2 cases, each 1000 oz., *Amsterdam* brand, were held for 1s. 4½d. per oz., and 5 cases of unknown brand, "guaranteed B.P. test" for 1s. 4d.

Tonquin Beans.—6 cases foxy *Paras* sold at 5d. per lb., 4 casks

Wax.—Fair to good *Zanzibar* sold at £6 5s. to £6 7s. 6d. per cwt.; rather lower at £5 7s. 6d. to £5 15s. 6d. Fair *Calcutta* at £5 12s. 6d., down to 80s. for inferior. 6 bags *Californian* sold at £7. 1 cask *Italian* bought in at £6 10s. per cwt. 2 barrels fair *Jamaican* sold at £7 5s. per cwt.

per lb.

Vanilla.—Only 97 tins were offered, it being understood that a larger quantity will be brought to auction this day fortnight. *Tahiti* is strongly held, finest quality being limited at 12s. per lb., ordinary selling at 10s. 6d. per lb. to 11s. per lb. A few tins only sold of *Seychelles* at last auctions' rates.

Wahoo Bark.—4 bags damaged sold without reserve at 5½d. per lb.

Yellow Berries.—31 bags taken out at 20s. per cwt.

10d. per lb. Other 15 bags of better quality, bolder appearance, for 1s. per lb.

Owing to the Easter holidays the next Drug Sales will be held this day four weeks, viz., April 13.

Liverpool Market Report.

March 15, 1899.

Since last week Linseed Oil, Cottonseed Oil, and Spirits of Turpentine have advanced in price. A good varied business has been done in Beeswax, Chillies, Ginger, and Kola Nuts. In seeds, River Plate Linseed has sold well, and spot parcels are now 3d. per 416 lbs. dearer. Turkish Linseed has sold to the extent of 500 bags, and Turkish Canaryseed to some 300 bags, at last week's rates. In heavy chemicals there has not been much doing, and prices are as last week, except as regards Sulphate of Ammonia, Sulphate of Copper, and Yellow Prussiate of Potash, which have risen.

Ammonia Salts.—*Carbonate* is very firm at 3d. per lb.; *Sal Ammoniac*, 33s. to 35s. per cwt.; *Sulphate*, £10 12s. 6d. per ton.

Beeswax.—Sales of *Peruvian* have been made at £7 per cwt.

Canaryseed.—There is only a little business passing, and that at 26s. per 464 lbs. for Turkish seed, of which 300 bags have been sold.

Carnauba Wax.—This has been in brisk demand, especially "yellow," of which 90 bags sold at 65s. per cwt., and 104 bags of grey Maranham at 38s. 6d. per cwt.

Chillies.—20 bags of medium quality Sierra Leone sold privately from store.

Cochineal.—Black Teneriffe has been selling at full rates in retail amount.

Copperas—Is firm at 37s. to 39s. per ton.

Copper Sulphate Is dearer at £23 17s. 6d. to £24 per ton.

Ginger.—21 bags Sierra Leone sold ex-quay at 20s. 6d per cwt.

Kola Nuts.—32 bags of dried went at 1¾d. to 2d. per lb. ex-store.

Linseed.—Calcutta is still held for prices above buyers' ideas. River Plate has been selling at 35s. 6d. per 416 lb. ex-quay, but has now risen to 35s. 9d.

Oils (Fixed and Spirits.—*Castor* is selling well at better prices. Calcutta is quoted at 2⅝d. to 3d. per lb., and 75 cases have been sold at the first-named figure. French 1st pressure sells at 2⅞d. per lb., and for shipment at an advance of 10s. per ton. Madras, 2⅞d. per lb. *Olive* commands only a medium amount of attention, but prices are steady. Spanish is quoted £31 5s. to £31 15s. per tun. *Linseed*, of Liverpool make, is 19s. to 19s. 6d. per cwt., with a fair amount doing. *Cottonseed* has risen to 17s. and 17s. 6d. per cwt., at which price it remains steady. *Spirits of Turpentine* are very steady at 33s. 6d. per cwt.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate*, 3½d. to 3¾d. per lb. *Cream of Tartar* is steady at 75s. to 80s. per cwt., but business done is small. *Pearlashes* are dull at 33s. to 34s. per cwt. *Potashes* slow of sale at 24s. per cwt. *Prussiate*, dearer, 8d. per lb. *Saltpetre*, 22s. per cwt.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax* is quiet at £16 to £16 10s. per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton; 70 to 72 per cent., £7 per ton. *Crystals*, £3 per ton. *Nitrate* sells fairly at 8s. to 8s. 3d. per cwt.

Manchester Chemical Report.

March 15, 1899.

There is not much change to report on last week. In drysalteries generally a fair business is passing without material change in prices, but heavy chemicals are somewhat easier. Bleaching Powder is in moderate request only, and Ammonia Alkali, 58 per cent., is rather lower. Caustic Soda is firm. Salt Cake is dull at 27s. 6d. to 30s. per ton, in bulk, on rails. Coal Tar products remain variable. Anthracene and Creosote are firm at the late advance, and Pitch is scarcer at 22s. 6d. per ton, *f.a.s.*, Manchester Ship Canal. The outlook in Benzols remains bad. Arsenic is the turn firmer at £16 10s. to £16 15s. ex-ship, Garston. Sulphate of Copper rules 5s. per ton lower, and some holders quote £23 10s., but for best brands £24 to £24 15s. are the current rates, delivered here. Acetate of Soda is improving, at £13 to £13 10s., *c.i.f.* Acetate of Lead is £26 per ton, *c.i.f.*, and Tin Crystals 7¼d. Aniline Oil and Salts, 4¾d. and 4¼d. respectively.

Newcastle Chemical Report.

March 15, 1899.

This chemical market finds Bleaching Powder moving with more freedom. Soda Crystals are a good inquiry, but not much new business passing. The position of other heavy goods unchanged. Prices are:—Bleaching Powder, £5 5s. to £5 10s. Soda Crystals, 45s. to 47s. 6d. Caustic Soda, 70 per cent. basis price £7. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Sulphur, £4 15s. to £5 per ton.

Partnership Dissolved.

(From the London Gazette.)

J. G. Wiseman and G. S. Mill, Surgeons, Ossett, Yorks.

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Advertisement.

(Received too late for Classification).

CAPABLE, energetic young gentlemen, who are well up in pharmacy and therapeutics, will find full scope for their abilities in the positions now open on the travelling representative staff, both at home and abroad, of a high-class firm of manufacturing chemists. Apply, with full particulars of experience, &c., to F. S. C. I., "Pharm. Journal" Office, 5, Serle St., W.C.

Calendar for the Week.

Sunday, March 19. Fifth in Lent. Sun rises 6.8; sets 6.9.

Monday, March 20. ☽ 3.24 M. Sun rises 6.6; sets 6.11.

Tuesday, March 21. Sun rises 6.3; sets 6.12.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—The Morphology of the Mollusca, by Professor E. Ray Lankester.

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—"Automatic Adjustment of the Half Tone Screen," by W. Gamble.

Wednesday, March 22. Sun rises, 6.1; sets, 6.14.

EDINBURGH CHEMISTS', ASSISTANTS', AND APPRENTICES' ASSOCIATION, 36, York Place, at 9.15 p.m.—Ordinary meeting.

MIDLAND CHEMISTS' ASSISTANTS' ASSOCIATION, Birmingham.—Notes on Practical Pharmacy, by T. Spilsbury.

NEWCASTLE-ON-TYNE AND DISTRICT CHEMISTS' ASSOCIATION, Hotel Métropole.—Annual dinner.

PLYMOUTH, DEVONPORT, STONEHOUSE AND DISTRICT CHEMISTS' ASSOCIATION, Technical Schools, Plymouth, at 7.30 p.m.—Lecture on Electricity, by F. R. Talbot.

Thursday, March 23. Sun rises 5.59; sets 6.15.

CHEMISTS' ASSISTANTS' ASSOCIATION, Portman Rooms, Baker Street, W.—Cinderella Dance.

MIDLAND PHARMACEUTICAL ASSOCIATION, Mason University College, Birmingham.—Discussion on Trade Subjects.

Friday, March 24. Sun rises, 5.57; sets 6.17.

ABERDEEN JUNIOR CHEMISTS' ASSOCIATION, North Silver Street Hall, at 9.30 p.m.—General Meeting.

ROYAL INSTITUTION, Albemarle Street, W., at 9 p.m.—Lord Rayleigh on "Transparency and Opacity."

Saturday, March 25. Sun rises 5.54; sets 6.19.

ROYAL INSTITUTION, at 3 p.m.—Lord Rayleigh, on "The Mechanical Properties of Bodies."

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Joseph Clipshand, Optical and Photographic Dealer, 43, London Street, Southport.

J. W. Flintoff, Drug Store Proprietor, 35, Whalley Range, Blackburn.

Harry M. Hames, Chemist, 9 and 11, High Street, Rushden, Northampton.

EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magnificent Model Vertical Engine, tubular boiler, glass gauge, whistle, double-action slide-valve cylinder, bronzed stand, exhibition model, silver-plated, high speed and perfect; worth 42s., accept 12s. 6d., free; photograph 1d.—"Manager," Marshgate Chemical Works, Stratford.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

Lancaster's No. 6 Astronomical Telescope, with best object-lens, 4 in. clear aperture, 60-in. focus, pancratic eye-piece, magnifying power from 60 to 120, 2 eye-pieces, 85 and 200; mounted on garden-stand; best achromatic finder and strong steadying-rod. Cost £25; will take £18, or offer.—Bradshaw, Tickhill, Yorkshire.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Obituary.

BROOKS.—On March 5, Thomas Brooks, Chemist and Druggist, Wandsworth. Aged 52.

PILLEY.—On March 7, Samuel Pilley, Chemist and Druggist, Boston. Aged 80.

JESSOP.—On March 9, Josiah Benjamin Jessop, Chemist and Druggist, Walsall. Aged 50.

WALKER.—On March 10, Edward Walker, Chemist and Druggist, Willenhall. Aged 64.

WILLIAMS.—On March 10, Martha Williams, Chemist and Druggist, Manchester.

GLOSSOP.—On March 11, George Edward Glossop, Chemist and Druggist, Shirehampton. Aged 52.

JEFFERY.—On March 11, Henry Jeffery, Chemist and Druggist, Bristol. Aged 55. Mr. Jeffery had been a member of the Pharmaceutical Society since 1872.

SHELLEY.—On March 11, Henry Shelley, Chemist and Druggist, Twickenham. Aged 61. Mr. Shelley had been a member of the Pharmaceutical Society since 1873, and was at one time local secretary of the Society and a constant subscriber to the Benevolent Fund. He was greatly esteemed by his fellow-townsmen, his death being much deplored.

HARVEY.—On March 7, from exhaustion following gastric hæmorrhage, Louisa, wife of W. S. Harvey, the Central Pharmacy, Margate, in her 45th year.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Adamson, Allen, Atkinson, Attfield, Burrell, Burroughs, Butler, Corpe, Cox, Davis, Ellinor, Ferrall, Forret, Gilderdale, Hardley, Harley, Harvey, Hewlett, Hill, Hughes, Johnson, Josty, Keen, Lorenz, Lloyd, Luff, Lunan, Manning, Proetor, Robins, Stokoe, Thwaites, Waind, Warren Watkins, Watts, Williamson, Wyatt.

ENGLISH NEWS.

The Metric System.—At the annual meeting of the Association of Chambers of Commerce held on March 15, 1899, Mr. Arthur Lee (Bristol) moved :—

> That, in view of the time wasted in teaching a system of weights and measures which, according to the First Lord of the Treasury, is "arbitrary, perverse, and utterly irrational," and in the opinion of Her Majesty's Consuls is responsible for great injury to British trade, this Association urges Her Majesty's Government to introduce into and endeavour to carry through Parliament as speedily as possible a Bill providing that the use of the metric system of weights and measures shall be compulsory in this country within two years from the passing of the Bill, and suggests that meanwhile the system should be adopted in all specifications for Government contracts.

—Mr. Rowlett (Leicester) mentioned that a deputation was about to wait upon Mr. Ritchie on the subject from the Decimal Association of London, and asked the meeting to unanimously pass the motion in order that the hands of the deputation might be strengthened.—The motion was unanimously agreed to.—On Wednesday, the 22nd inst., the President of the Board of Trade, Mr. Ritchie, received at the House of Commons the deputation, which urged upon the Government the desirability of the compulsory adoption of the metric system of weights and measures.—Amongst those present were Sir Samuel Montagu, M.P., President of the Decimal Association, Sir Edward Hill, Sir Henry Roscoe, Mr. G. D. Kelby (Manchester Trades Council), Mr. Walter Hills, President of the Pharmaceutical Society, and other gentlemen.—Mr. Ritchie, in reply to the deputation, said his own view was that the arguments used in favour of the metric system were very strong. So far as our external trade was concerned, the metric system was undoubtedly the better of the two. So far as scientific research was concerned, the system had already been adopted. There was no reason why those doing foreign trade should not adopt the system, and so far as the textile trades were concerned, he was able to express the opinion that there was not the difficulty which some feared in the way of adopting the metric system side by side with the present system. Compulsion in connection with the system was not at present possible, and he thought there was no evidence that public opinion on the subject was advancing. Chambers of Commerce did not largely represent the small traders, who would be greatly affected by the suggested change. He did not dispute that education would be rendered more simple by it; but the code already provided for its compulsory teaching. The small trader was the first difficulty in the matter in this country. Local authorities and Chambers of Commerce could do much to develop public opinion in the matter, and anything that the Board of Trade could do to spread information would be done.—Mr. H. Cunynghame, writing to the editor of the *Times* with respect to the opposition of engineers to the metric system, points out that the defenders of the English inch and the easy duodecimal division of the foot do not any of them venture to say a word in favour of the present system of weights. But the case as to the measure of length is different. Apart from the fact that there is no confusion with regard to the inch, the screw systems of the country depend upon it, and a change would involve very serious alterations in existing machinery and plant. He, therefore, appropriately suggests an immediate change in the weight system, leaving the metric linear measure system, which is not necessarily connected with the weight system, for future consideration.

Optical Instruction.—Mr. Lionel Laurance announces that he will commence an evening class on April 11, for candidates who wish to enter for the modified examination of the Worshipful Company of Spectacle Makers to be held in June.

Liverpool Pharmaceutical Students' Society.—A smoking concert was held on Thursday evening, 16th inst., at the Kardomah Café, Church Street, Mr. Cowley presiding. As the final event of the winter session, something special in the way of entertainment was naturally looked for, and the expectations of the members were not disappointed. The programme, containing a well-chosen collection of vocal and instrumental pieces, had been specially designed by Mr. C. W. Cooke, the Treasurer, who managed to successfully illustrate how easily adaptable certain pieces of chemical apparatus are to convivial purposes, a task in which he exhibited an amount of ingenuity worthy of Dickens's immortal "sawbones," Ben Allen and Bob Sawyer. During the evening "the Pharmaceutical Quartette," Messrs. C. Davis, E. G. Smith, Nicholson, and C. W. Cooke, contributed what was styled on the programme "A Pharmaceutical Nursery Rhyme—Tinct. Cinchonæ Co., by A. Pill," which was received with great applause and encored. The other items were rendered by Messrs. Catley, Davis, A. H. Morgan, M. Hall, Sydney W. Smith, E. G. Smith, Rousell, and Bottomley, the latter gentleman giving a couple of recitations in Yorkshire dialect of a very humorous character. The usual collection for the Benevolent Fund was taken up, and resulted in a sum of over £2. Votes of thanks to the artistes, and to Messrs. Jenner and Cooke, the Hon. Secretary and Treasurer, for their efforts to make the affair the undoubted success it was, terminated a very pleasant evening's enjoyment, in which about seventy members and their friends participated.—The programme was supplied gratis by Mr. Egan, lithographer, of Fleet Street, Liverpool.

Competition at Exeter.—Some premises in High Street, Exeter, will, it is announced, shortly be opened by Coleberd and Co., Ltd., "cash chemists," under the management of a qualified chemist. Coleberd and Co. promise to supply the public with genuine drugs, "patent" medicines, etc., at considerably less than the so-called Exeter store prices, "in many cases about one-half." The establishment is to be known as the London and South-Western Drug Stores.

Prosecutions under the Food and Drugs Act.—At the West Riding Police Court, Dewsbury, on Friday, March 17, Thomas John Welburn, described as a chemist, but not registered as such, trading as Messrs. Hughes and Welburn, chemists, Birkenshaw, was summoned for compounding a medicine which was not in accordance with the prescription.—The defendant did not appear, but was represented by his son.—Ernest Crabtree, an inspector under the Food and Drugs Act, gave evidence to the effect that he visited the defendant's shop on January 19, and handed to defendant a doctor's prescription, and asked for a bottle of medicine according to the prescription. He paid a shilling for it and afterwards divided the medicine into three parts. The public analyst had examined the medicine, and certified that it contained 149 grains of citrate of iron and quinine, instead of 120 grains, as ordered.—In reply to the magistrates, the inspector said it was a bad case, as it was very necessary that prescriptions should be carefully compounded.—The Chairman (Mr. F. Ellis) remarked that it was a serious matter to alter a doctor's prescription. It might mean life or death.—Replying to the magistrates' clerk, defendant's son admitted that neither he nor his father were qualified chemists. It also transpired that defendant had another shop at Dudley Hill.—The magistrates, after deliberating in private, decided that it was a very bad case indeed, especially as defendant was not a qualified chemist. It was a question of protecting the public, and they thought they were dealing very leniently with defendant in ordering him to pay a fine of £5 and costs, and also to pay the analyst's fee.——Powdered Borax.—At the Wednesbury County Police Court, on Tuesday, March 14, Charlotte Tomlinson, described as a chemist, but not registered as such, carrying on business in the Market Place, was charged with selling powdered borax which contained 100 per cent. of bicarbonate of soda.—Evidence was given by Samuel Toy, assistant inspector, who stated that on January 19 he purchased two ounces of powdered borax at the defendant's shop, for which he paid 1½d.—Mr. E. W. T. Jones, public analyst, spoke to analysing the substance, and to finding that it contained 100 per cent. of bicarbonate of soda. He had since received a packet of powdered borax from defendant, and found it to be genuine.—It was urged in defence that the manager misunderstood the order of the assistant inspector, believing that he asked for crushed soda.—His Worship remarked that it seemed to be a case of reckless trading. One thing was asked for and another thing supplied.—Defendant was fined £3 and the costs.——Milk of Sulphur Cases.—The Ossett Borough magistrates were occupied some time on Monday morning last in hearing charges brought against local tradesmen of selling adulterated milk of sulphur. In the first case the Ossett Co-operative Society was the defendant.—Mr. Ernest Crabtree, one of the West Riding County Council's inspectors proved to purchasing at one of the Society's branches, 4 oz of milk of sulphur, which on analysis was discovered to contain 79 per cent. calcium sulphate. A fine of 1s. and costs was inflicted.—In the second case John Giggal, grocer, Ossett, was ordered to pay 1s. and costs for selling adulterated milk of sulphur, and 1s. and costs for selling adulterated camphorated oil.—J. Sax-

ton Wilby, grocer, Ossett, was mulcted in 1s. and costs for selling adulterated milk of sulphur.—The question of costs was subsequently raised, and complaints were made that the cases had been brought before tradesmen had been notified of the standard fixed by the B.P. 1898. The magistrates suggested that the new standard should have been advertised. They thought notice should have been given to tradesmen of the new requirements before the summonses were taken out. They only allowed the analyst's fees in one case, and disallowed the inspector's fees.

Sheffield College of Pharmacy.—On Saturday, March 18, the students of the Sheffield College of Pharmacy, accompanied by the Principal, Mr. J. W. J. Turner, went for a botanical outing to the nurseries of Mr. Keeling, Broomhill, where cyclamens, orchids, cinerarias, peach, genistas, cactuses, freezias, tulips, daffodils, lily valley, azalias, were seen in flower, and acubas in fruit. They then visited the conservatories of the late Sir John Brown. Mr. Harrow, late Curator of the Sheffield Botanical Garden, showed the party round, and among the interesting botanical specimens were :—Cladodes of *Carmichelia australis* (a leafless plant), Leguminosæ ; *Ficus stipulata*, a small-leafed climbing plant ; *Darlingtonia californica* (Sarraceniaceæ) ; *Phormium tenax* (New Zealand flax) ; *Dicksonia antarctica* (tree fern), as well as a large number of other exotic plants. On Tuesday last the Grimesthorpe Chemical Works proved most instructive. Mr. Calvert, the resident chemist and manager, most ably explained the technical points of interest, including the intricacies of the Gay Lussac or denitrating tower, and the Glover or nitrating tower in the sulphuric acid plant ; the ignition of the "oxide" from the gas-works containing 50 per cent. S in a set of twenty-four flues. Each is charged every hour. After the combustion the "black oxide" is drawn off. The whole of the sulphuric acid manufactured is used to prepare ammonium sulphate, of which there is plant for making 80 tons a week, requiring 23 tons sulphuric acid. The works are owned by the Sheffield Gas Company, who supply the "oxide" for manufacture. The nitre pots are charged with soda nitre. The laboratory, where the chemists were engaged in the analysis of coal-gas and its bye-products was then visited. Among the hydrocarbons of interest shown was pyridene, which is removed from the ammoniacal liquor by a complicated process. Mr. Holton, who conducted this part of the visit, was thanked for his able guidance.

Poisoning by Carbolic Acid.—The *British Medical Journal* points out that it is now more than two years since a letter was received from the Privy Council stating that the question of placing restrictions upon the sale of carbolic acid was under the consideration of the Privy Council with a view to legislation on the subject. "From the reply given by Mr. Jesse Collings to Dr. Farquharson in the House of Commons on March 13 it appears that the Privy Council has at length prepared a Bill for the purpose. Mr. Collings, however, was unable to give any promise that the Bill would be introduced this session. The lamentable mistake which caused the death of Dr. A. K. H. Boyd is a further proof of the necessity for including carbolic acid in the Poison Schedule, as the supply of the article would then be subject to the regulations and require observance of other precautions besides the mere "Poison" label, which is not actually necessary in the sale of carbolic acid under existing conditions. The adoption of regulations as to the keeping, dispensing, and selling of poisons can only be partially effectual in preventing accidents so long as carbolic acid and many other dangerous or deadly drugs remain unscheduled as poisons. We trust, therefore, that the Council of the Pharmaceutical Society, which is empowered to take the initiative in this matter for the protection of the public, will not fail to discharge that important duty, and press its recommendations upon the Privy Council for approval in accordance with the provisions of the Pharmacy Act, 1868."

Poisoning by Prussic Acid.—An inquest took place at Alnwick, on Tuesday last, into the circumstances attending the death of John Newham Heatley, aged 40, a contractor, of Blyth, who was discovered dead near a house which he was engaged in building. On his person a packet containing 10 grains of hydrochlorate of morphine was found, and it was therefore suspected that death was caused by morphine poisoning, but an analysis of the contents of the stomach, made by order of the coroner, by Mr. Lesslie Newbigin, pharmaceutical chemist, revealed no morphine, but a considerable quantity of Scheele's prussic acid. The jury returned a verdict to the effect that the unfortunate man had committed suicide by taking prussic acid while temporarily insane.

Lewis and Burrows' Drug Stores.—The fourth annual general meeting of Lewis and Burrows' Drug Stores, Limited, was held on Friday, March 17, at Winchester House, E.C., with Mr. J. R. Brough in the chair. He said the sales showed an increase of £2243 over the same period of last year ; the extra cost of rentals and salaries was £396. The profits of the firm, he explained, had been reduced consequent on a robbery (by a branch manager, who was now in prison) of £300 in cash and goods. £416 had been laid aside for "Depreciation reserve account." The company's financial position remained strong, and the working capital was sufficient, being ample to pay promptly for all goods bought.—Mr. Mitchell (a shareholder), said the balance-sheet showed a miserable £224 as the net result of six months' working—a profit which he considered any one of the company's shops should have itself produced. But even this sum of £224 had not been earned ; and he went into details to show that there had been an increased value put on the company's fixtures, which increased value was counted as profit. A further important item which had helped to swell this nominal profit was the dispensing with the services of the late manager, and thereby saving £500 in salaries. He therefore, concluded that either this company was grossly over-capitalised or very badly managed.—Mr. Griffiths, the former managing director, and now one of the largest shareholders, deeply regretted (as a vendor) that he had ever sold his interest in the company, he had lost about £1600 a year.—Mr. Tapp roundly declared the accounts were "cooked," but later on he said he would withdraw that word and call them "roasted," or he would say they were not presented in anything like a satisfactory manner.—Several other shareholders joined in the discussion of the accounts, and the Chairman went into a very lengthy reply to the points raised. Ultimately the directors' report was carried ; a dividend of 6 per cent. on Preference shares (less tax) for the half-year, and 3 per cent. per annum on Ordinary shares was declared. It was also agreed to call an extraordinary general meeting later on to alter the name of the company from that at present used to "Lewis and Burrows, Limited."

Arsenic in Oatmeal.—In connection with the inquiry with respect to the strange poisoning cases at Southsea reported in last week's Journal (page 262b), it was suspected that "Rough on Rats" was the cause of the mischief. Constable Sheppard, Coroner's officer, deposed to receiving parcels of oatmeal from Mr. Smith, Mr. Barnes (manager to Messrs. Dittman), King's-road, and from Dr. Newby, which he handed to Mr. Murray. He also received from Mr. Smith a box marked "Rough on Rats."—Mr. J. Moore Murray, public analyst for the borough, stated in his report that he failed to obtain any indication of arsenic in the stomach, but there were traces in the intestines. In the oatmeal from Mr. Bullock he found 4·83 grains of arsenic. He was unable to find any arsenic in the oatmeal from Mr. Dittman. He found 5·42 grains in the meal from Mr. Smith. The small box marked "Rough on Rats" contained a grey powder, part of which he examined. In 10·29 grains he found 4·87 grains of arsenic. He thought the arsenic in the oatmeal was in the same state of combination as that found in the poison—arsenious acid, commonly called white arsenic. It was not to be assumed, however, that the arsenic in the oatmeal came from the rat poison.—Mr. Frederic Gall, Chemist, of Landport, writes, however, as follows :—"In reference to the case of poisoning by arsenic found in oatmeal there is very little doubt of the article, 'Rough on Rats' being the source of the poison. What I wish to ask is, 'How is it that the laws relating to the sale of arsenic should be so easily evaded by the proprietors of this particular poison, also why the Pharmaceutical Society through their Council should have no power in the matter, or if they have the power why they do not exercise it. This is the second mysterious arsenical poisoning case in the town?'"

Students' Visit to a Drug Warehouse.—On Monday last the students of the Imperial College of Pharmacy were conducted over the warehouses of Messrs. Evans, Lescher & Webb. The party was divided into two portions, the one under Mr. T. E. Lescher, the other under Mr. Sidney Webb. The materia medica

and chemical warehouses were especially interesting. It appears that the original casks arriving from the works at Liverpool are transferred to separate bins, hence a mistake in placing subsequently in smaller bottles is practically impossible. Each bin averages about 5 cwt. capacity. Aloes in its many varieties were explained to the students, many original cases, skins, and gourds being shown. Hyoscyamus, digitalis, belladonna, stramonium, and other dried leaves were carefully studied. The chemicals and galenicals manufactured at Liverpool are all shipped to London. At the conclusion the students were entertained by Mr. Lescher in his private room, and after refreshments Mr. F. Davis proposed a vote of thanks to Mr. Lescher, Mr. Webb, and the firm generally.

Arsenic in the Pepper.—At an Occasional Court at Fakenham on Monday, March 20, Sarah Vyse, of Tivetshall, domestic servant, was brought up under remand charged with "unlawfully and maliciously causing to be taken by Samuel Francis Barber, of West Raynham, clerk in holy orders, a certain poison, called arsenic, so as thereby to inflict upon him grevious bodily harm." Prosecutor stated that the defendant was engaged as cook in his service, and had been in his employ since September last. About February 5, after recovering from an attack of influenza, he experienced intense purging and an inordinate amount of cramp, and some sickness. The cramp gradually increased. They were in the habit of having made-up dishes seasoned rather highly with pepper, curry powder, and other hot seasonings. On February 17, when his suspicions were aroused, he left off using certain articles in the cook's store cupboard, amongst which was a tin of mixed black and white peper. This tin with the contents he afterwards took to Mr. F. Sutton, Norwich, for analysis. After February 17 he was not further troubled with the sickness.—Other members of the family gave evidence of having suffered from sickness after partaking of seasoned soups, etc. Evidence was also given to the effect that after defendant had notice to leave she refused to partake of all made-up dishes and burnt the remains, and that she also refused to use pepper at her meals.—Mr. Francis Sutton, public analyst, Norwich, said he received from prosecutor a tin containing about 2 ozs. of pepper for analysis. On doing so he found therein three-quarters of a grain of white arsenic. He could not say whether it was put in dry or in a soluble state. Arsenic would not readily dissolve in water, but was capable of being mixed up into a watery paste. The quantity was not sufficient to endanger the life of a grown-up person, but would make one feel very ill. He afterwards received and examined some ground allspice, which he found to contain white and blue arsenic.—Inspector Basham said he apprehended the accused at her father's house at Tivetshall. He having asked if there was any arsenic in the house, the mother unlocked a drawer, from which he took samples of blue and white arsenic, which he produced. He also handed samples to Mr. Sutton. He had made inquiries of all the chemists within a radius of five miles of Raynham, but could not find that any of Mr. Barber's household had purchased arsenic. He could not say from whom or where the mother obtained the key to unlock the arsenic drawer.—The accused, who by the advice of her solicitor reserved her defence, was committed for trial at the next Assizes, bail being allowed.

Poison by Post.—Mr. S. J. Broad, the Watford coroner, held an inquiry at the Metropolitan Asylum for Imbeciles at Leavesden, on Saturday afternoon last, concerning the death of an inmate named Caroline Ansell. On Thursday, the 9th inst., Ansell received through the post a parcel containing cake. She ate some of it, and also gave some to four other women, and soon afterwards they all complained of pains and vomited. Ansell continued ill until Tuesday, March 14, when she died, whilst Mary Smithers, another woman who ate some of the cake, lay seriously ill in the infirmary. In all cases the symptoms were practically the same. Nurse Felmingham, who had charge of the case, said there was no note with the cake to say from whom it came, and the wrapper had been lost. After the death the doctor, having his suspicions aroused, communicated with the coroner, who ordered Dr. Cox to make a post-mortem examination. Dr. Cox told the jury that the appearances were compatible with the death from an acute irritant poisoning, and that he had handed over the contents of the stomach to the police. The inquiry was then adjourned, the coroner intimating that he would order an analysis of the contents of the stomach to be made.

Taking Rat Poison by Mistake.—A married woman named Harriet Stabb, who was nursing a sick person, died at Totnes on Thursday, March 16, from the effects of rat poison taken in mistake. She found in the kitchen a tin apparently containing oatmeal, and cooked some for herself. After eating it she noticed a peculiar taste. She was taken ill immediately and died within a few hours. It subsequently transpired that the substance partaken of was wheatmeal mixed with arsenic.

Dr. A. B. Griffiths has been elected a Membre honoraire de la Société de Pharmacie du Sud-Ouest (Toulouse), in recognition of his researches on the ptomaïnes.

SCHOOL OF PHARMACY NEWS.

The Next Meeting of the Students' Association of the School of Pharmacy will be held this (Friday) evening, March 24, at 5 p.m., when a paper will be read by Mr. Horace Finnemore, entitled "The Sagacity of Plants," and illustrated by numerous lantern slides. Mr. Cyril Baker will be in the chair.

The Pharmaceutical Football Club played the Old Boys on Saturday last, and after a very fast and exciting game won a brilliant victory by two goals to love. This annual match is always looked forward to, both by past and present students, as a pleasant occurrence, for after the match a smoking concert is held, where old friendships are renewed, and a most enjoyable evening spent with songs and social intercourse. The weather was bright, and the ground in the pink of condition when the ball was set rolling, and the game soon became interesting as the Old Boys commenced pressing, and seemed to imagine they could carry all before them, but the present "Square" backs soon relieved, and then the forwards getting into their stride worked the ball dangerously near their opponents' goal. For a time very even play ensued, the ball travelling very fast up and down the field, the flying runs of the wing forwards, Lloyd and Warren, being especially noticeable. Wilde, receiving a centre from Lloyd, promptly despatched the ball into the net, but the whistle had blown for off-side, so the goal was nullified. At half-time there was no score, and the teams appeared to be remarkably well balanced.

On re-starting, the present "Square" men, led on by their captain, made determined efforts to score, and were at last rewarded. Lloyd centring, Wilde secured and shot into the net, amidst much cheering by the spectators. This reverse to the Old Boys seemed to put them on their mettle, but try as they would they found it impossible to record a goal, the backs on both sides playing a sound game. Nelson seemed to have a magnetic attraction for Warren, spoiling many of his sharp runs, and Evans, the "Square" centre-half, worked like a Trojan. Once more the present "Square" men, by some clever passing, recorded the second goal from the foot of their captain, but still the Old Boys stuck to their work with commendable pluck, and but for the splendid play of the "Square" defence, must have scored. Stokoe, at back, played a superb game, his kicking and tackling being especially noticeable, and, indeed, the whole team seemed in a state of rejuvenescence, and every man played well. Nor must the merits of the Old Boys' team be underrated, as they made it very warm work for their juniors, and at the start it certainly looked as if they would come out the winners. The teams were as follows:—Old Boys: Goal, S. A. Sturton; backs, A. F. Surfleet (captain), T. E. Lescher; half-backs, E. C. Butler, B. Webster, W. B. Nelson; forwards, E. Spurge, C. Morley, J. Fothergill, P. Tebbutt, and A. N. Other. P. F. C.: Goal, K. J. Padwick; backs, T. J. Stokoe and W. Owen; half-backs, W. F. Collinette, J. Evans, P. B. Gray; forwards, W. M. Lloyd, W. Garsed, W. J. Wild (captain), H. S. Durbin, W. Warren. Referee, Mr. T. Tickle.

After the Match the teams and other students, both past and present, who had assembled to witness the game, adjourned to the Bush Hotel to finish up the day in real good pharmaceutical style. About forty sat down to an excellent meat tea, with the captain of the present team at the head of the table, and good appetites seemed to prevail, owing no doubt to the keen air at Shepherd's Bush. Tea being removed, the company—now augmented by the arrival of several late members, thus raising the number present to considerably over fifty—sat down to enjoy an evening of music and smoke, with its necessary accompaniment. Mr. Wild (captain) was in the chair, and in opening the proceedings proposed the usual

royal toast, accompanied by the National Anthem, after which a lengthy programme of songs was entered upon, commencing with the good old "Square" anthem, "Cock Robin," sung in capital style by Mr. Garsed, who was well supported in the chorus. Songs were also given by Messrs. Baker, Harold Wilson, Battle, Morley, Stokoe, Greaves, Sturton, Owen, Tebbutt, Lescher, and some excellent comic recitations were given by Mr. Morley Taylor. The chief toast of the evening was the "Old Boys," proposed by Mr. P. B. Gray and responded to by Mr. Surfleet, who congratulated the Square team on their well-earned victory. The "Health of the Captain" was next proposed by Mr. Surfleet, and drank amid great uproar and the singing of "He's a Jolly Good Fellow," for which Mr. Wild returned thanks in a short speech. The last toast of the evening was that of the "Football Club and Committee of the Smoker," proposed by Mr. Nelson, who made particular reference to the Inter-Pharmacy Football League, originated by Mr. Evans, and to be started next season, the first cup having been already presented by Mr. Watson Will, of the Metropolitan School of Pharmacy. As Sunday morning was rapidly approaching, "Auld Lang Syne" was sung, and the company dispersed to various parts of the Metropolis, after what was acknowledged by all to have been a most fitting wind-up to the Square football season.

SCOTTISH NEWS.

Burned on the Face with Vitriol.—Joshua Green, 152, Garngad Road, Glasgow, has brought an action for £500 damages in the Court of Session, Edinburgh, against his employers, Stevenson, Carlisle and Co., Limited, Chemical Works, Millburn Street, Townhead, Glasgow, in respect of personal injuries sustained on April 24, 1898. He was attending to the vitriol machines or tanks, and stood on a platform to turn off a spigot. When he was in the act of getting off the platform the vitriol spurted out and injured his face and body. The defenders denied fault, but it was intimated to the Court on Friday, March 17, that the case had been settled by pursuer accepting a sum of £60.

Association Football.—Students, Royal Dispensary School of Pharmacy, Edinburgh.—A match between representatives of England and Wales on one side and Scotland on the other, was played at Harrison Park, Edinburgh, on Saturday last. Teams, England and Wales (combined): Goal, Allison; backs, Wilford, Roberts; half-backs, Robson, Selby, Bell; forwards, Davis, Williams, Hay (captain), Hattersley, Binks. Trainer, Mr. C. German. Scotland: Goal, Jack; backs, Leadbetter, Mason; half-backs, Foulis, Walker, Stuart; forwards, McKecknie, Watts, Strachan (captain), Mitchell, Swan. Trainer, Mr. G. Kennedy. Referee, Mr. Magee, Ireland. Prompt to time teams lined up, the Scotsmen, having lost the toss, had to defend the north goal. Ten minutes from the start, the Thistle forwards carried the ball towards the English goal, Mitchell passing the ball to Strachan; the centre tipped to Swan, who capped the effort by a stinging shot from the right wing, which found the net. Nothing daunted by this reverse, the Rose and Leek from a break away by Davis were promptly heading for the Scotch goal, but were smartly brought up by Leadbetter, and as the result of another piece of dashing play by the Scotsmen, Strachan found the net again with a swift low shot. During the next fifteen minutes play was almost confined to the south end, Scotsmen pressing hard, but, owing to splendid defensive work by Wilford and Selby, failed to score. At this juncture Williams unfortunately had to leave the field, and Rose and Leek subsequently played one man short. A severe scrimmage at the English goal nearly resulted in a goal, a penalty being claimed by Scotland, on account of Binks handling the Ball, but was not granted by the referee. McKechnie scored for the Thistle a minute later, after beating the English backs. A few minutes from half-time another brilliant run by the Scottish forwards ended in Mitchell scoring the fourth goal for Scotland. Half-time: Scotland, 4; England and Wales, 0. On resumption of play England displayed their first bit of passing, Davis and Binks in succession having hard lines in not scoring. Davis had another try for goal, but failed to find net. Scotch forwards once more broke away, and a pass from their centre gave Swan the chance of notching the fifth and last goal. No further scoring was effected, and a stubborn game ended in favour of Scotland by 5 goals to 0.

Death of Mr. Charles Thomson.—A figure familiar in each of the coast towns in East Fife passed away on Sunday, March 19, in Mr. Charles Thomson, chemist and druggist, Elie. He was a native of Cupar, and there served his apprenticeship as a chemist, and thirty-five years ago settled in Elie. He grew with the place, and his shop became a bazaar, it being a frequent saying that he could supply anything. Many stories are coupled with his name and with the miscellaneous character of his business, of which the following from the *Dundee Courier* is a good specimen:—"Hoot, you'll get a'thing you want at Thamson's," said a bailie to a visitor who was making some inquiries. By way of joke the visitor professed to take this literally, and asked, "Do you think he could give me a pulpit?" "Fine that," was the reply. At once the boast was put to the test, and the bailie led the way to the chemist's shop. "Ou aye," said Mr. Thomson, when the want of the customer was told, "come this way and I'll show you one." Sure enough, in the back garden stood an old pulpit. The bailie explained later to a friend that he knew Mr. Thomson had got this sent for another purpose from a church which was about to be extended.

WELSH NEWS.

Camphorated Oil or Embrocation.—A case of alleged unlawful exposure for sale at his establishment of bottles containing a mixture of vaseline and camphor as camphorated oil, preferred against Mr. Robert Skinner, of Mumbles, has just been dismissed by the Swansea magistrates. It was pointed out on behalf of the defendant that the police officer who purchased the article was told that the bottle contained camphor embrocation, and that the mixture was not sold as camphorated oil.

Sale of Drugs by Ironmongers.—The Glamorganshire County Council, at their annual meeting, held on Thursday, March 16, at Pontypridd, had presented to them a report from the Local Government Committee, which included a clause to the following effect:—"One of the inspectors was requested to report as to the probable object with which milk of sulphur purchased by him from an ironmonger was dealt in by that tradesman. No prosecution was to be taken in the present instance, but the vendor warned." The report was adopted.

The Pharmaceutical Society under Criticism.—The Rhondda Valley and Merthyr and District grocers, at their Association meetings on Monday and Tuesday night respectively, passed resolutions urging the Grocers' Federation to take such steps as would safeguard the interests of the grocery trade against the proposed restrictions on grocers under the new pharmacy legislation contemplated. Mr. Arthur Daniel, the Chairman of the Merthyr Association, remarked that these measures were generally brought forward under the ægis of the Pharmaceutical Society. They knew perfectly well that the chemists were no friends of the grocers. The chemists would sell certain articles indiscriminately which they said the grocers were unfit to sell. And he referred to "patent" medicines which, when the chemist sold, he did not give the buyer any greater protection against the percentage of poison which they were supposed to contain than the grocer did. He urged that the action taken by the chemists was, after all, one of trade protection, and not for the public protection.

Publications Received.

HOLOCAINE IN OPHTHALMIC SURGERY: Its Superiority over Cocaine; Its Therapeutic Value. By HASKET DERBY, M.D., Boston. Reprinted from the *Archives of Ophthalmology*. From the Author.

HAND-BOOK OF PHYSIOLOGY. By W. D. HALLIBURTON, M.D., F.R.S. Fifteenth edition, with upwards of six hundred and fifty illustrations. Pp. xix. + 872. Price 14s. London: J. Murray, Albemarle Street. 1899. From the Publisher.

ETUDE CRITIQUE DES PROCÉDÉS DE RECHERCHE DE L'ACÉTONE DANS LES URINES. Par RAYMOND VAN MELCKEBEKE. Reprint from *Annales de Pharmacie*, February, 1899. From the Author.

LA LEGISLATION PHARMACEUTIQUE EN SUISSE. By L. BUTTIN and C. BÜHRER. Reprinted from the *Journal Suisse de Chimie et Pharmacie*, 1899. From the Authors.

Trade Notes.

Messrs. Burroughs, Wellcome & Co. send a copy of a little booklet entitled 'Practical Points,' which, in a concise and practical way, tells all about "Tabloid" photographic chemicals. The second edition is now ready, and will be sent gratis and post free to all who send a request to the firm at Snow Hill Buildings, Holborn, London, E.C. Practically the whole of the booklet is devoted to actual working directions of the numerous developers, toning baths, etc., and their very simplicity is one of the most powerful advertisements that "Tabloid" photographic chemicals could possibly have. The new edition contains interesting information concerning the new and very valuable formate-toning bath and ammonium persulphate density corrector.

"Tabloid" Pyro. Soda Developer (Ilford Formula).—To the many users of Ilford plates this will be a very welcome addition to the list of "Tabloid" developers issued by Messrs. Burroughs, Wellcome & Co. Instead of the stock pyro. solution No. 1 solution and No. 2 solution requiring two 20-oz. and one 6-oz. bottle, we have a tube containing "Tabloid" pyro. accurately divided into 2-grain quantities and a small bottle of "Tabloid" soda compound divided to correspond. Two of the former in an ounce of water form solution No. 1, and two of the latter in an ounce, solution No. 2; these solutions mixed in equal quantities form the normal developer. Errors of exposure are compensated for in the usual way. Sufficient for at least forty quarter-plates is supplied for a shilling in a neat little cardboard case measuring only 2 by 4 by 2 inches. We understand that "Tabloid" pyro. soda developer (Ilford formula) is now given as an alternative to the regular developer on all the labels of all the plates issued by the Britannia Works Co., Ltd. It may therefore be safely assumed that the results obtainable by its use have been found excellent after the most critical examination and comparison. The "Tabloid" developer is certainly simpler and cleaner to use and prepare than any stock solutions can hope to be.

Ophthalmic "Tabloid" Fluorescein.—Messrs. Burroughs, Wellcome & Co. also submit samples of their new preparation, "Tabloid" fluorescein. This chemical, as is well known, is soluble in the lachrymeal secretion, and is employed for the diagnosis of corneal lesions. The normal cornea is not stained, but ulcers or parts denuded of epithelium become green and remain so for a few hours. The increase of its use by oculists for diagnostic purposes is thought to justify its introduction as a "Tabloid" preparation, and it is therefore issued of a strength of 1/2000th of a grain.

Messrs. A. and M. Zimmermann, of 9 and 10, St. Mary-at-Hill, London, E.C., send samples of Naftalan, which is a medical ointment, procured from a special and peculiar crude naphtha, differing considerably from any other raw naphtha in its physical and chemical properties. In spite of a high specific gravity of 0·960, this naphtha does not contain any resinous products, dissolves completely in ether, and burns with an agreeable aromatic smell, without leaving any residue. The flash point of this crude naphtha is beyond 140°, and the point of freezing is 20° C. In the fractional distillation of the naphtha it does not give off light oils, such as benzine, kerosene (petroleum), etc., but immediately as first product (distillate) a heavy oil with a specific gravity of 0·890 passes over. It can be distilled to dryness without noticing a trace of paraffin. The ointment and the oil used with it are prepared without employing any acid or free alkalies, and without admixing any animal or vegetable fat. It shows strong antiseptic action, and is said to be an excellent remedy in various diseases of the skin.

Mr. E. J. Reid, 11, Dunedin House, Basinghall Street, E.C., writes to say that he has been appointed the sole agent in this country for the Etna Chemical Co. of New York, and sends samples of that firm's preparation Phenalgin. The highest opinions of this article have been received from American sources, and it is reported to be antipyretic, antimalarial, hypnotic, and to a marked degree a vascular stimulant. Samples will be sent post-free on application.

Receiving Order in Bankruptcy.

(From the London Gazette.)

Walter Broxap, Analytical Chemist, 31, The Cliff, Broughton.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

March 23, 1899.

Business has been somewhat quiet during past week, althongh a moderate number of transactions has taken place. The chief centre of interest has again been Quinine, which has advanced another 4d. per oz. during the week, to a price which is causing prudent men of business to shake their heads. There are now rumours that it is the intention of speculators to endeavour to drive the price to 2s. 6d. per oz. (as against a price of 10d. per oz. not so many weeks ago). but the question naturally arises, first, will they succeed, and, secondly, even if they do succeed, will they be equally successful in unloading at the high price? This all remains to be seen. As a rule, corners of this kind have not generally been successful, will the present one prove an exception? The results of to-day's Amsterdam bark sale show an enormous advance in price paid for the unit, viz., 13 cents, as against about half that price at the previous bark sale in Amsterdam, but would not this fact tend to increase the danger that shippers of bark may be tempted to hurry forward supplies to meet the active demand at such satisfactory prices? and then! Anyhow, we think buyers cannot be far wrong if they decide for the moment only to cover their requirements in the article just from hand to mouth. There are practioally no changes of importance to report in any other articles of chief interest, of which the following are the prices actually ruling:—

Acetanilide.—So far the predicted advance in price has not come to pass; in fact, there are sellers even below the combined makers' price of 11d. per lb. for 5-cwt. lots. Buyers of such cheaper makes will, however, be wise to look to the quality.

Acid Carbolic.— Aquiet but steady market at 6⅝d. to 6¾d. per lb. for 34-35° *ice crystal*, in 2½ cwt. drums and overcasks; 7d. to 7¼d. per lb. for 39-40° *ice crystal*, and 8d. to 8¼d. per lb. for the B.P. quality, viz., 39-40° *detached crystals*. *Crude*, 60° F., 2s. 1d. per gallon; 75° F. 2s. 7d. per gallon. *Liquid*: 95-98 per cent. of pale-straw colour, in 40-gallon casks, 1s. 2d. to 1s. 3d. per gallon, according to quantity.

Acid Citric—Very quiet at, nominally, 1s. 3½d. to 1s. 4d. per lb. for *crystals*.

Acid Tartaric—Steady at 1s. 1d. per lb. for *English* and 1s. 0½d. per lb., *c.i.f.*, for *foreign*.

Aloin—Is scarce and inquired for. American is offered at 2s. per lb. to arrive, but very little is to be had.

Ammonia Compounds.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to make, quantity, and packing. *Iodide*: 14s. 3d. per lb. *Muriate*: White, free from metals, 25s. to 27s. 6d. per cwt.; chemically pure, small crystals, 30s. to 32s. 6d. per cwt. *Sal ammoniac*: Crushed for batteries, firsts, 37s. per cwt.; seconds, 35s. per cwt.; sublimed, 35s. and 33s. per cwt. respectively. *Sulphate*: Gray 24 per cent., prompt, £10 7s. 6d. to £10 10s. per ton, London or Hull. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb.

Antipyrine—Both *Dr. Knorr's* article and the lower-priced *Phenazone* are in good demand at steady prices.

Antimony.—*Regulus* is quoted £39 per ton, and *Crude Japan* (*Black Sulphide*) £23 10s. per ton landed, and £22 10s. per ton *c.i.f.* to arrive.

Asafetida.—To-day a special sale was held of this article.

In the catalogues of two brokers 472 cases were offered. For soft pinky block the demand for America was very strong, but only a few cases of this quality were offered, the bulk being common heavy block and of a very mixed character. The 9 cases of good soft pinky block realised 77s. 6d. per cwt., and 1 case slightly inferior 75s. per cwt. For pea size free gum 70s. per cwt. was paid, and for medium block hard and heavy. but part almondy, 39s. to 43s. was paid. Broken block, slightly pinky, and with loose gum, realised 54s. to 57s. per cwt. The lower qualities part sold down to 20s. per cwt.

ATROPINE—Is firm at 15s. 6d. per oz. for the *Sulphate B.P.*, and 17s. 10d. per oz. for the pure *alkaloid*.

BISMUTH.—The metal is unchanged at 5s. per lb. for the commercial quality, the *subnitrate* (B.P.) being quoted 5s. 1d. per lb., and the *carbonate* 5s. 8d. per lb.

BORACIC ACID.—Makers' prices remain unchanged at 28s. per cwt. for *powder*, and 26s. per cwt. for *crystals*.

BORAX—Steady at 17s. 6d. per cwt. for *powder*, and 16s. 6d. per cwt. for *crystals*.

BROMIDES AND BROMINE—Are without change and in good demand at 1s. 10d. per lb. for *Potass. bromid.*, 2s. 1½d. per lb. for *Sodii bromid.*, 2s. 2d. per lb. for *Ammon. bromid*, and 2s. 2d. per lb. for *Bromine* (in case lots).

CAMPHOR—Is quiet but steady at unchanged prices both for the *crude* and the *refined* article.

CASCARA SAGRADA—Is quiet but steady at 37s. 6d. to 42s. 6d. per cwt. according to the age of the bark.

CASTOR OIL—Is quiet but steady.

CINCHONA BARK.—Results of to-day's Amsterdam sale as far as same had become known up to time of going to press showed an advance of just 100 per cent. as against previous Amsterdam sale, price opening at 11 cents per unit, and advancing to 13 cents.

CLOVES.—Privately *Zanzibar* quiet but steady. Business done comprises January-March delivery at 3 13/32d., March-May and April-June at 3⅜d. to 3 13/32d. Of 23 cases *Penang* in auction, 6 cases sold at easy rates; fair bright picked, rather damp, at 6¾d. to 7d. No *Zanzibar* offered.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*, commercial, 1s. per gallon; pure, 1s. 3d. per lb. *Benzole*, 8d. per lb. for both the 50 and the 90 per cent. *Creosote*, 3d. per gallon. *Crude Naphtha*, 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*, 95 per per cent., at 160° C., 1s. 6d. per gallon; 90 per cent., at 160° C., 1s. 2d.; 90 per cent. at 190° C., 1s. 3d. per gallon. *Anthracene*, A, 3¾d. per unit; B, 2¾d. per unit. *Pitch*, 26s. per ton *f.o.b.* *Tar*, 12s. per barrel, 2½d. per gallon, for both refined and crude.

COCAINE—Is quiet. Makers are firm at 11s. to 12s. per oz., according to quantity and brand, for the *Hydrochlorate salt* in 25-oz. tins, and a further advance in price is considered probable. There are, however, sellers from second hand at slightly lower figures than those mentioned above.

CODEIA—Is firm at 12s. 3d. to 12s. 6d. per oz., according to quantity.

COD-LIVER OIL.—Market is not quite so firm at 60s. to 62s. 6d., *f.o.b.*, for best new non-congealing *Norwegian* oil in tin-lined barrels of 25 gallons, while good 1898 oil is offering at 5s. per barrel less money.

CREAM OF TARTAR—Steady at 76s. to 77s. per cwt. for first white *crystals*, and 78s. to 82s. per cwt., according to percentage, for *powder*.

GINGER.—*Cochin* continues dull and easy; of 204 bags washed rough, 54 bags sold, medium and small at 23s. to 24s., good cuttings at 17s.; of cut kinds 81 cases sold, rough scraped, badly cut, bold little medium at 75s., medium little bold roughly scraped at 52s. 6d., small and medium ditto at 34s. 6d., small and ends ditto at 30s. to 31s. *Jamaica* in fair demand and prices steady; of 362 packages, about half sold, hard bold some medium at 88s., good medium and bold at 82s. 6d., good medium 74s. to 75s., fair ditto 67s. to 68s. 6d., ordinary to good ordinary 57s. to 64s. 6d.

GLYCERIN.—*English* makers quote 52s. 6d. per cwt. for best white double-distilled chemically pure 1260° quality in tins and cases, while the best *German* brands are quoted 55s. to 60s. per cwt. for same quality and packing. *Crude* is quiet but fairly steady at £29 to £31 per ton.

IODIDES AND IODINE—Are in brisk demand at unchanged prices, viz., *Potass. Iodid.*, 10s. 6d. per lb. *Sodii Iodid.*, 11s. 10d. per lb. *Ammon. Iodid.*, 14s. 3d. per lb. *Iodine Resublimed*, 12s. per lb., and *Iodoform Crystals*, *Powder*, or *Precipitate*, 13s. 10d. per lb. *Commercial Iodine* is still quoted 7½d. per oz.

IPECACUANHA.—*Rio* is again firm at 12s. per lb. from first hands, but a shade less might be taken by second-hand holders. *Carthagena* firm at 7s. 9d. to 8s. per lb. according to quality and quantity.

MERCURIALS.—Maker's prices are unchanged at 2s. 6d. per lb. for *Corrosive Sublimate* and 2s. 10d. per lb. for *Calomel*.

MORPHIA—Is quiet at 4s. 6d. per oz. for the *Hydrochlorate powder*, and 2d. per oz. more for the *crystalline salt*.

OILS (ESSENTIAL).—*Peppermint* continues very dull of sale. American H.G.H., small sales at 5s. 3d. per lb., but for large lots less would be taken. Wayne County nominally quoted 3s. to 3s. 6d. per lb., as to quality. Japan, 40 per cent. oil is to be had on the spot at 5s. per lb.; dementholised is rather scarce for immediate delivery. *Star Aniseed* is weak at 5s. 10d. to 6s. per lb. *Lemongrass* quiet at 2⅞d. per oz. *Clove* is weak, and a reduction in price seems probable.

OILS (FIXED) AND SPIRITS.—There are no special changes to report, the markets for the various articles usually reported under this heading having been quiet but steady.

OPIUM—Is fairly steady at unaltered prices, say 10s. 3d. to 11s. per lb. for common to fine *Persian*, 10s. 9d. to 11s. 6d. per lb. for good to fine *Druggists*, 9s. 9d. to 10s. 6d. per lb. for fair to good *seconds* and manufacturing kinds, 12s. to 13s. for good to fine *soft shipping* qualities, and 10s. to 10s. 6d. per lb. for *seconds* ditto.

OXALIC ACID—Is still quoted 3d. to 3⅛d. per lb., delivered in London.

PHENACETIN—Is dull and weak, demand not being very active, while the pressure to sell on part of makers continues; 3s. 9d. to 4s. per lb., according to quantity, is the price for both crystals and powder, while for a large quantity it would be possible to buy even below the lower figure.

POTASH COMPOUNDS.—*Bicarbonate*, 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*: 1s. 10d. per lb. *Chlorate*, 3¾d. per lb. for *crystals* and 4d. per lb. for *powder*, on spot. *Iodide*, 10s. 6d. per lb. *Permanganate*: Small crystals, 52s. 6d. per cwt.; large crystals, 57s. 6d. per cwt., in 1-cwt. kegs; 2s. 6d. per cwt. less for ton lots. *Prussiate*: Yellow English, 8d. to 8¼d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

POTASH PERMANGANATE—Is rather firmer, especially for really good and reliable makes, there being a lot of inferior and dusty rubbish on the market. A good article can still be bought for 52s. 6d. per cwt. for *small crystals*, and 57s. 6d. per cwt. for *large crystals*, in 1 cwt. kegs.

QUICKSILVER.—Is somewhat weak at £8 5s. from first hand and £8 2s. 6d. per bottle from second hand.

QUININE.—The market for this article has simply run wild. Makers now decline to name a price, while from second hand there are buyers at 1s. 9¼d. per oz. for *B. & S.* and or *Brunswick* for May delivery, and at 1s. 10d. per oz. for August delivery. The business appears to be wholly speculative, and it still remains to be seen whether the future course of price for cinchona bark will justify the enormous advance in price of the manufactured article. At to-day's Amsterdam bark sales, the full results of which had not become known at time of going to press, the price opened at 11 cents per unit, advancing to 13 cents, a figure which shows just 100 per cent. advance on prices which ruled at the previous Amsterdam sale, and an advance of over 50 per cent. on the figures of last bark sale in London. The future course of price will depend more or less upon the shipments of bark from Java, although there appear to be also other factors in the case which have to be reckoned with.

RAD. HYDRASTIS CANADENSIS.—This is again lower in New York, although there is no stock in first hands on this side. Nominal price, delivered in London, is 3s. per lb.

ROSIN.—4s. 6d. per cwt. *ex* wharf is the price for strained on the spot.

SARSAPARILLA.—Further sales of *Honduras* have been made at 1s. 5d. per lb. since the sales, and the market is firm at this price.

SENNA.—Medium to good leaf of *Tinnevelly* variety is very scarce, and holders are asking even more money for the small quantity available. Spotty leaves are in better supply, and consumers will, soon have to draw upon this quality. *Pods* are also becoming scarce, the market having been cleared of all cheap parcels. For pale pods 2¾d. per lb. is the price, whilst dark are held for 2d. to 2½d. per lb. *Alexandrian* leaf of new crop is scarce, sales of broken leaf of old crop have been made at 3½d. per lb., *siftings* at 2½d. per lb., and *pods* at 4d. per lb.

SODA COMPOUNDS.—*Crystals*: 52s. 6d. per ton, bags; 55s. per ton, barrels, ex ship, Thames. *Ash*: £5 to £5 10s. per ton, according to quantity and percentage. *Bicarbonate*: £7 to £8 per ton

for the 97 per cent. and 18s. 6d. to 19s. 6d. per cwt. for the fully bicarbonated. *Bichromate*: 2¾d. per lb. *Caustic*: White 70 per cent. £7 10s. per ton, 60 per cent. £1 per ton less. *Hyposulphite* (*Antichlor.*): 6s. 6d. to 8s. 6d. per cwt., according to quantity and packing. *Iodide*: 11s. 10d. per lb. *Nitrate*: £8 to £8 2s. 6d. per ton, according to quality.

Soda Crystals—Unchanged at 55s. per ton, in barrels, and 52s. 6d. per ton, in bags, ex-ship London.

Spices (Various).—*Black Pepper*: Only 5 bags *Ceylon* offered and these bought in at 6d. *White Pepper*: 70 packages *Singapore* bought in, good to fine, at 9½d. to 11d. *Chillies*: Of 470 packages *Japan* only 10 cases sold, without reserve, at 35s. 6d.; 150 bales *Zanzibar* bought in at 35s. *Cassia Lignea* dull; 500 cases offered and only 20 sold, selected new, at 47s.; 250 bales broken sold, new at 34s. *Cassia Chips*: 200 packages bought in at 42s. to 45s. *Cinnamon*: 1 bale *Ceylon* sold at 9½d.; 35 bales *Tellicherry* bought in at 9½d. *Cinnamon Chips*: 123 bags *Ceylon* bought in at 3½d. to 3⅝d. *Mace*: Of 12 cases *Penang* 5 cases sold, pickings at 1s. 2d., the remainder bought in, including good pale wormy at 1s. 8d. *Pimento*: 496 bags all bought in at 4⅝d. to 4¾d.

Strychnine.—Makers' prices are 1s. 10d. per oz. for the *pure cryst.*, and 1s. 9d. per oz. for *pure precip.*; 1s. 9d. per oz. for the *muriate*, and 1s. 7½d. per oz. for the *nitrate*.

Sulphate of Copper—Rather weaker at £23 to £25 per ton, according to quantity and brand, for spot delivery.

Sulphonal.—Makers quote 17s. per lb. with a reduction for 4-cwt. contracts for both *crystals* and *powder*, while second-hand still offers in limited quantity at rather below these figures.

Newcastle Chemical Report.

March 22, 1899.

Bleaching Powder on this market is still fairly well sought after at the advanced prices. Soda Crystals find more orders passing, in view of the approaching Baltic shipping season. Ash and Caustic Soda similarly situated. Prices: Bleaching Powder, according to markets, £5 5s. to £5 10s. Soda Crystals, basis, 45s. to 47s. 6d. Soda Ash, 40 per cent., £4 10s. Caustic Soda, 70 per cent., £7 5s. Alkali, 50 per cent., £5. Sulphur, £4 15s. to £5.

Manchester Chemical Report.

March 22, 1899.

The course of matters in the chemical trade continues to have a downward tendency. Caustic Soda is very dull, but Bleaching Powder is fairly maintained, especially for export. Ammonia Alkali is firm, and there is no change in Soda Crystals and Bicarbonate. Brown Acetate of Lime has declined to £4 15s. per ton, Welsh and American, delivered Manchester. Alum and Sulphate of Alumina are somewhat lower. Arsenic has advanced and ranges from £16 15s. to £17 per ton, ex ship, Garston. Sulphate of Copper has gone up rather sharply, and is quoted £24 10s. to £24 15s. per ton, best brands, delivered Manchester. Coal Tar products are fairly steady. Pitch is unchanged, and a fair quantity is being shipped from Manchester to Belgian ports. Creosote is the turn higher. Green Copperas is dull, but unchanged for best Lancashire. Chlorate of Potash is quiet at 3¼d. to 3½d. Yellow Prussiate fairly firm at 7¾d. to 8d. Glauber Salts easier at 30s. to 32s. 6d., and Epsom Salts, 52s. 6d. to 35s., bags, or rails here. Tin and Zinc Salts continue firm.

Liverpool Market Report.

March 22, 1899.

The higher rates for Cottonseed Oil and Spirits of Turpentine noticed last week have increased, the latter article to the extent of 1s. per cwt. The other changes are in Nitrate of Soda, Sulphate of Copper, and Sulphate of Ammonia, which have risen in price.

Ammonia Salts—Unchanged, except *Sulphate*, which is £10 15s. per ton.

Bleaching Powder.—£5 per ton.

Canaryseed—Is neglected and the nominal rate of 26s. to 26s. 6d. per 464 lbs. holds for Turkish.

Carnauba Wax.—55 bags of yellow sold at 70s. per cwt., 68 bags of medium changed hands on private terms.

Copper Sulphate—Is dearer, £24 to £24 10s. per ton, and very firm.

Linseed.—The demand latterly has increased, but sellers ask prohibitive prices, 300 tons of River Plate sold ex-quay at 35s. 3d. to 35s. 6d. per 416 lbs., and 50 tons of Calcutta at 38s. ex-quay.

Oils (Fixed) and Spirits.—*Castor* is slow of sale, but prices are firm at 2⅛d. per lb. for Calcutta, and 2⅞d. per lb. for French 1st pressure; 1500 cases of Calcutta sold privately "to arrive"; 2 tons of 2nd pressure French ex store went for 2⅝d. per lb. *Olive* is steady, price unchanged, demand retail for Spanish oils, at £31 to £31 10s. per tun. *Linseed*, in export casks, Liverpool pressed, is in fair demand at 19s. to 19s. 6d. per cwt. *Cottonseed* in export barrels, Liverpool refined, has advanced to 17s. 6d. and 18s. per cwt. *Spirits of Turpentine*: The price has risen to 34s. 6d. per cwt. in consequence of the scarcity here and because of rise in London and American prices.

Potash Salts.—*Cream of Tartar* is still steady at 75s. to 80s. per cwt. *Yellow Prussiate* is very firm.

Soda Salts.—Caustic Soda is firm at £7 15s. per ton for 76 to 77 per cent. *Nitrate* has risen to 8s. 3d. and 8s. 6d. per cwt., and is in good demand.

Turmeric.—153 bags of Cochin bulb sold at 10s. per cwt.

Obituary.

Andrew.—On March 12, William Andrew, Chemist and Druggist, Aberdeen. Aged 83.

Stevenson.—On March 18, John Crabtree Stevenson, Chemist and Druggist, Todmorden (Lancashire). Aged 63. Mr. Stevenson had been a member of the Pharmaceutical Society since 1890.

Thomson.—On March 19, Charles Thomson, Pharmaceutical Chemist, Elie (Fifeshire). Aged 58.

Jackson.—On March 18, Thomas Jackson, Pharmaceutical Chemist, Strangeways, Manchester. Aged 82. Mr. Jackson was an apprentice with the late Mr. Booth, of Rochdale, and commenced business in Manchester on his own account in 1837. He was one of the founders of the Pharmaceutical Society, and was well known amongst the older members of the trade. He was active and well up to March 4, when he had an attack of influenza, which developed into spasmodic asthma, and succumbed through want of strength.

Partnerships Dissolved.

(From the London Gazette.)

F. W. Spurgin and C. L. S. James, Physicians and Surgeons, 35, Welbeck Street, and 16, Thayer Street, Manchester Square.

Henry F. Holland and C. G. Stein, Physicians and Surgeons, Ampthill, Beds. Debts will be received and paid by H. F. Holland,

TERMS OF SUBSCRIPTION

The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

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NOTICE TO ADVERTISERS.

On account of GOOD FRIDAY occurring next week, the PHARMACEUTICAL JOURNAL *will go to press on Wednesday. Advertisements intended for the issue of April 1 must reach the Publishing Office, 5, Serle Street, Lincoln's Inn, London, W.C., not later than*

WEDNESDAY next, March 29.

Advertisement.

(Received too late for Classification).

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Calendar for the Week.

Sunday, March 26. Palm Sunday. Sun rises 5.52; sets 6.21.

Monday, March 27. ○ 6.19 M. Sun rises 5.50; sets 6.22.

Tuesday, March 28. Sun rises 5.48; sets 6.24.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION, County Restaurant.—Debate on P.A.T.A. matters, introduced by S. N. Pickard.

ROYAL COLONIAL INSTITUTE, Whitehall Rooms, Hotel Métropole, London, S.W., at 8 p.m.—Paper on "British New Guinea," by Sir W. MacGregor.

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—Paper on "Ozotype with Carbon Tissues, a New Method of Pigment Printing," by T. Manly.

Wednesday, March 29. Sun rises, 5.45; sets, 6.26.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 3 p.m.—Anniversary meeting; election of officers and council; President's address.

FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION, Lamb's Hotel, Dundee, at 5 p.m.—Exhibition of the most recent productions in poison bottles, poison cupboards, poison labels, etc. The New Poison Regulations will also be explained by J. Rutherford Hill. All persons interested are cordially invited. If time permits there will be a discussion on the suggestions for a Draft Pharmacy Bill. Tea will be provided.

Thursday, March 30. Sun rises 5.43; sets 6.28.

Friday, March 31. Good Friday. Sun rises 5.41; sets 6.30.

Saturday, April 1. Sun rises 5.38; sets 6.31.

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BRITISH PHARMACOPŒIA

1898

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COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Akhurst, Andrews, Ashwin, Bartlett, Beacock, Bradshaw, Brady, Branson, Breeze, Brownscombe, Bührer, Burdon, Burroughs, Clayton, Cummings, Davis, Dell, Dickins, Dixon, Druce, Gall, Galt, Gaul, Green, Hall, Hill, Hogg, Hussey, Ireson, Jones, Knight, McClumpha, Martin, Martindale, Middleton, O'Halloran, Passmore, Planchon, Presley, Reynolds, Ridyard, Smith, Tullock, Turner, Turney, Vinson, Walker, Warren, Watts, Williams.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Foreign Stamps, arranged in countries in small books and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. W. Franklin, Exchange Buildings, Birmingham.

Water-Bed, 72 by 36, cost 7 guineas (Ferris) 2 years ago; been used twice; 6 weeks each.—Offers to Gatward and Wright, Yeovil.

About 100 gross glazed porcelain unions for feeding-bottles, in 5-gross cartoons, 1s. 6d. per gross, or 10½d. to clear; 30 gross glazed porcelain comforter mounts, in 5-gross cartoons, 1s. 6d. per gross, or offer; 10 gross collapsible tubes for 1d. tooth paste, etc., 3s. per gross in 1-gross boxes; 100 gross brass clips for carding comforters, etc., 2d. per gross; or what offers to clear? Sample parcels forwarded on receipt of amount.—Brooke, 344, Mare Street, N.E.

Bernthsen's 'Organic Chemistry,' 7s. 6d., price 4s.; Scott's 'Botany,' 2 vols, 3s. 6d., price 2s. 3d.; J. W. Oliver's 'Systematic Botany,' 4s. 6d., price 3s. Latest; good condition. What offers?—Hulme, 20, Brittox, Devizes.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

ENGLISH NEWS.

Sunderland Chemists' Association.—The members of this Association will be glad to receive samples of bottles, appliances, etc., for storage of poisons in connection with the recent regulations to be sent to Mr. R. H. Bell, Hon. Sec., 27, Thornton Place, Sunderland.

Manchester Pharmaceutical Association.—The annual meeting, which, in accordance with the new rule, takes place on April 12, will have a more important character than usual. In addition to the routine business, a discussion will be introduced on the "Suggestions for the Draft Pharmacy Bill," "The Dispensing of Medicines by Unqualified Assistants in Surgeries," and "The Misuse of Chemists' Titles." The members of the retiring Council (who are eligible for re-election) are Messrs. A. Blackburn, H. Kemp, W. Kirkby, W. Lane, A. J. Pidd, Chas. Swinn, J. W. Walton, G. H. Westmacott, J. Wild, G. S. Woolley, E. Yates, J. Rymer Young, and the auditor, Mr. John Blyton.

Chemists' Assistants' Association.—The last Cinderella dance of the season was brought to a very successful issue on Thursday, 23rd ult., a date which appeared to be happily chosen, in that it afforded an opportunity, which in some cases was made available, for temporarily casting aside the perturbation that not unnaturally precedes the ordeal of the examination rooms. The dancers were many, a fact which, considering the arctic weather and the prevailing epidemic of influenza, was particularly gratifying to the Committee; indeed, had the number been more than slightly supplemented, the attendant discomforts of overcrowding could scarcely have been avoided. Amongst those present were Mr. and Mrs. E. W. Lucas, Mr. and Mrs. J. C. Umney, Mr. E. W. Hill, Mr. T. Morley and Miss Taylor, Mr. F. W. Gamble, and others. Messrs. C. W. Martin, and A. H. Solomon jointly shared the duties of M.C.'s, and Mr. Bacon supplied the band.

Mr. F. H. Glew, chemist and radiographer, of 156, Clapham Road, has purchased from Mr. James Smart the business known as Kendall's Drug Store, 126, Clapham Road, and intends to carry on the same under the old title as a branch establishment.

North of England School of Chemistry and Pharmacy.—The students of this school visited the Ouseburn Lead Works, by kind permission of Messrs. James and Co., Ltd., on Wednesday, March 22, where the refining of lead from the crude metal as imported was shown in all its stages, from the removal of antimony and other metals as oxides to its desilverisation by Parke's process with subsequent recovery of the zinc used. Then its conversion into white lead by the Dutch method, by means of fumes from acetic acid and spent tan was seen, followed by the levigation and grinding of the product with oil. The preparation of red lead, specially pure for glass manufacture, was also seen. All the processes were fully described, together with the admirable sanitary arrangements for protection of the workers from injurious dust and fumes. The following day the manufacture of copper was seen at the works of the Bede Metal and Chemical Co., Hebburn-on-Tyne, where the residues from pyrites burners are extracted by grinding and roasting with salt and subsequent lixiviation of the copper chloride. The liquor first deposits lead sulphate containing some gold, and still contains silver, which is removed by the addition of sodium iodide, after which the copper is obtained by deposition on scrap iron. This metal is then further purified in reverberatory furnaces, where the iron is got rid of as silicate in the form of slag. Each process was fully explained, and the determination of the metal in the raw material by electrolytic deposition upon platinum demonstrated in the company's laboratory. On the Friday afternoon the manufacturing side of pharmacy was seen in the laboratory of Messrs. Wilkinson and Simpson, Ltd. Mr. G. F. Merson, F.C.S., former principal of the school, kindly conducted the party, and illustrated the use of vacuum pan, hydraulic press, nitre still, tablet machine, and other apparatus, by means of various preparations in course of manufacture. On the motion of the principal, Mr. F. R. Dudderidge, hearty votes of thanks were accorded at the termination of each visit.

Is Bread "Meat"?—Such was the question the County Magistrates were called upon to decide at St. Albans on Saturday, March 18, before adjudicating in the case of Aubrey Simmons, who was charged, at the instance of the R.S.P.C.A., with wilfully placing upon certain land meat—to wit, bread—impregnated with poison intended to destroy life. The magistrates decided that bread was included in the term "meat," and thus came under the Act. The question being thus settled, evidence was taken, and Mr. A. E. Ekins, pharmaceutical chemist, St. Albans, deposed to having analysed the contents of a box containing bread, upon which a substance had been spread which he found to be phosphorus, in the form of paste. The defendant was fined £3 and costs.

Selling a Poisonous Preparation Without a "Poison" Label Affixed.—Mr. Edward Presley, chemist, of 12, St. Augustine's Bridge, Bristol, has been fined for a technical offence under Section 17 of the Pharmacy Act, 1868. Mr. Presley had supplied the morphine suppositories which were shown, at a recent inquest, to have caused the accidental death of a school teacher named Arthur Wickham Cooke, and he was summoned for selling the suppositories without the box containing them having affixed to it a label indicating the poisonous nature of the contents. Mr. Pomeroy prosecuted and Mr. T. D. Sibly defended. Mr. Sibly said that Mr. Presley ought undoubtedly to have affixed the "poison" label, but the man who came in for the preparation was a soldier, and had, he believed, served in the Soudan. He told Mr. Presley he understood the use of suppositories, which he had been ordered by the doctor. He believed that in the case of suppositories not being used internally the doctor did not order them to be labelled. As a matter of fact, the offence was committed most innocently and in the press of business. The magistrates said that though they did not think for a moment it was done intentionally, they felt that the sense of the offence should be marked by an appreciable fine. They therefore imposed a fine of £2 and costs.

Royal Institution.—The following are the lecture arrangements after Easter at the Royal Institution:—Professor J. Cossar Ewart, three lectures on "Zebras and Zebra Hybrids"; Professor Silvanus P. Thompson, two lectures on "Electric Eddy-Currents" (the Tyndall Lectures); Professor W. J. Sollas, three lectures on "Geology"; Professor Dewar, three lectures on "The Atmosphere"; Mr. Lewis F. Day, three lectures on "Embroidery"; Professor L. C. Myall, two lectures on "Water Weeds"; Mr. Louis Dyer, three lectures on "Machiavelli"; Mr. W. L. Brown, two lectures on "To Iceland in Search of Health"; Mr. Edgar F. Jacques, three lectures on "The Music of India and the East, and its Influence on the Music of Europe" (with musical illustrations). The Friday evening meetings will be resumed on April 14, when a discourse will be delivered by Professor A. W. Rücker on "Earth Currents and Electric Traction." Succeeding discourses will probably be given by Dr. F. W. Mott, Professor C. A. Carus Wilson, Dr. W. J. Russell, Professor T. Preston, the Right Rev. the Lord Bishop of Bristol, Sir William Martin Conway, Mr. H. G. Wells, and other gentlemen.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—An interesting lecture on electricity was delivered last week before the Junior Section of this Association by Mr. F. R. Talbot, B.Sc., A.R.Sc., at the Technical School, Plymouth, Mr. C. J. Park, President, in the chair. The lecturer showed several practical experiments, fully explaining the following points: Positive and negative electricity, insulators and conductors, electrification by influence or induction, and the peculiar way in which a metallic point behaves. Mr. Park proposed and Mr. Reynolds seconded a hearty vote of thanks to Mr. Talbot for his very interesting and instructive lecture, which was unanimously passed.

Company Mongering.—Two cases of Fraser *v.* Taylor and Fraser *v.* Taylor and another, both relating to the same matter, came before Lords Justices A. L. Smith, Collins, and Romer on Monday, March 27, on appeal from an order made by Mr. Justice Bigham in Chambers on March 20, by which he confirmed an order made by the Master, giving the defendants liberty to defend the actions only on condition of bringing £500 into Court in one case and £1000 in the other. Mr. Dodds, who appeared for the appellants, submitted that the defendants ought to have unconditional leave to defend. It appeared that the plaintiff, Mr. Jos. Wilson Taylor, advanced the defendant, Fraser, £500 for the purpose of paying a deposit to a Mr. Magor for an option to purchase a number of chemists' shops belonging

to him in the neighbourhood of Birmingham, the defendant agreeing that in the event of the company which he was about to promote proceeding to allotment he would within seven days thereafter repay the £500 with a bonus of £500, and also cause to be allotted or transferred to plaintiff one thousand fully paid shares of £1 each in the said company. On the other hand, should the company from any reason whatever not proceed to allotment, the plaintiff was not to call for repayment of the £500 advanced unless it should be returned to defendant by Mr. Magor. According to the statement of counsel, though a company called Magor, Limited, had been formed and gone to allotment, it was not the company which the plaintiff and defendant were contemplating, but one promoted by some one else; nevertheless Mr. Magor had refused to return the £500 deposit paid him by defendant. After some discussion their lordships gave defendants leave to defend without bringing the money into Court, but ordered them to pay the costs of the appeal, as the original affidavit before the judge was unsatisfactory, and but for a further affidavit now produced his order would have been confirmed.

A New Form of Spectroscope was exhibited by Lord Rayleigh at the Royal Institution last week. It consisted of ten right-angled prisms arranged side by side in a long tube filled with a mixture of carbon bisulphide and benzol, having the same refractive index as the glass. Among the advantages attributed to this mode of construction are that the light undergoes no refraction for that part of the spectrum for which the adjustment is made, that irregularities in the glass become of less effect, and that loss of light by reflection is got rid of. A disadvantage of the arrangement is that it is greatly affected by changes of temperature, as they alter the refractive index of the liquid. The resolving power of the instrument is very great, and by its aid Lord Rayleigh was able to exhibit on the screen the separation of the yellow sodium line.

FRENCH NEWS.

The Corn Microbe!—An eminent French doctor and chemist, equally noted for his dexterity with the microscope as the bistouri, has recently made a discovery which will be hailed with no small measure of delight by sufferers from that common and painful torturer, "the common or garden variety corn." After long and patient research he has at last succeeded in isolating the "corn microbe," which he has dubbed with the name *Bacillus diaboticus* (perhaps *Bacillus diabolicus* would be nearer the mark). Sufferers can prepare their own by the following method, and hand them round to their "best friends." This is how the bacteriological *savants* of Louvain prepare theirs for microscopical examination: Having pared a small scale from the corn, it is boiled for five minutes in a small quantity of sterilised water. It is then removed from the water and, whilst hot, is placed in a porcelain capsule, and one or two drops of fuming nitric acid poured upon it. The capsule is then covered with a watch glass, and allowed to remain for twenty-four hours. At the end of that time the removal of the watch-glass will reveal thousands of the *Bacillus diaboticus* scattered about and easily recognisable under a powerful microscope by the following typical characteristics: "fine elongated form, trumpet-shaped proboscis, and three tails." Not satisfied with having simply discovered the enemy, the worthy medico set about discovering a means of annihilating him, and to this end tried all the infallible corn-cures hitherto foisted upon a gullible public, but without avail. Finally, due to a hint from a monk of the "Abbaye de la Trappe," he had recourse to a procedure which proved effectual. It would perhaps not be *mal à propos* to remark that the *Bacillus diaboticus* is propagated and developed more readily when woollen socks are worn, and under the pressure of malformed boots. Apparently, the hour when an attack upon the enemy is attended with the best results is that of tumbling out of bed when the skin is impregnated with that moist heat which renders it more supple and more easy to remove. The corn is then attacked quietly with the finger-nails and the horny surface gradually pared off, adding occasionally a few drops of the following "sovereign balm," which has received the euphonious name of "beaume anticorripède," and of which the monastic formula is:—

Eau bénite sterilisée	30 grammes.
Laudenham de Sydenham	30 drops.

After a few days' application the skin where the corn was situated will have assumed its normal state. The eau bénite is a solution of perchloride of mercury, and the laudenum de Sydenham of the French Codex contains about 1 in 8 of opium with cinnamon, saffron, cloves, and wine. With these data, readers can experiment and produce a "beaume anticorripède" of their own.

A Remarkable Phenomenon.—Monsieur le Doctor Drouet, of Meulan, has just related to the *Journal de Médecine de Paris* a curious incident which happened in his own household, and one which has few parallels. A short time ago one of his youngsters, aged 2½ years, complained of feeling unwell during the night. Thereupon the doctor arose out of bed, and proceeded to the examination of the child's throat, arming himself with the traditional tallow dip in order to see better. As soon as he had depressed the tongue with the handle of a spoon, and approached the mouth with the light, a blue flame, like that of alcohol, instantly shot out from the child's mouth, singeing his own moustache at the left side, and very superficially burning the child's lips. Needless to remark, this peculiar phenomenon somewhat alarmed those who beheld it. The only explanation for it, if explanation it may be called, is that the contact of the spoon whilst depressing the tongue had determined the emission of an inflammable stomachic gas, which ignited in presence of the flame of the candle.

SCHOOL OF PHARMACY NEWS.

No Doubt this Column is Scanned weekly by many of those who still take an interest in their "alma mater," and as the football report to most must be the most interesting item of news, a brief *résume* of the season's matches will not be unwelcome. It must have often been remarked "What a bad season the Square are having," or "When are they going to win a match?" but if the whole season is reviewed and the accounts are not too much "cooked," it will be evident that such remarks are quite out of place. It will perhaps be remembered by many that a game was played with a certain military team, the details of which are shrouded in obscurity, and such malicious reports were spread that if a true statement was made it would not be credited, so that match will not be included in the following:—Matches played: won, 5; lost, 7; drawn, 1; total, 13. Goals scored: For, 19; against 18. The above figures speak for themselves, and it must be added, for the benefit of old players, that the teams engaged have been above the average of the last few years. The only other school of pharmacy engaged was Muter's, whom the "Square" defeated in the first match and drew with in the second. Let us hope that the "Square" will put as good a team in the field next season, and bring back to "No. 17" the first Inter-Pharmacy Football Cup.

Judging from the Deserted Appearance of the Chemical Laboratory last Saturday morning, it seemed that some unusual event must be happening to cause those usually studious Minor students to absent themselves, and in truth there was, although not of a pharmaceutical character. The "battle of the Blues," appeared to interest them, so they took it upon themselves to represent the Pharmaceutical Society, though unauthorised. After Professor Collie's morning lecture a goodly number turned out to witness the "Cambridge and Oxford" boat race, and were well repaid by witnessing a good race. Being a bright morning, one party fancied a coach ride, and were fortunate enough to secure such a vehicle in the Strand, and had a very enjoyable drive to Putney, where the start was witnessed; they then drove on to Mortlake to witness the finish, and join in with a lusty pharmaceutical cheer for the winners. The drive reminded them of the good old coaching stories of "Tom Brown's Schooldays," only, unfortunately, there was an absence of any form of musical instrument on which to exercise their lungs.

By the time this Column of School News is in the press the majority of "Square" students will be far away enjoying themselves, *chacun à son goût*, and as a matter of course this column will be closed until their return next month. Let them remember how welcome news is at the Square, and that all items of news from the outside world of pharmacy are doubly welcome; also (but this needs no reminder) that this is the last vacation before that much dreaded ordeal in July, through which all must pass before entering the "promised land" of pharmacy. It is really the only opportunity given for doing practical field botany, and should not be missed; those flowers being especially looked

for which are included in the schedule, a few of which may be found in flower, especially in the south. Perhaps it would not be out of place here to reprimand those students who failed to put in an appearance at the last Students' Association meeting; it showed great want of *esprit de corps*, and if they had only known what was in store for them, would certainly have been present. It was a paper over which the author had spent a great deal of time and labour, and was certainly of great assistance to anyone studying botany. Those who did attend were amply rewarded.

Pleasant Holidays to all Minor Students, and may success crown the efforts of our Major students in their examination now drawing so near.

SCOTTISH NEWS.

The Supply of Poisonous Medicines. — The followfng letter has been sent to all chemists in Edinburgh who supply medicines for the recipients of poor relief:—"I am instructed by my Council to call your attention to the Order issued by the Privy Council regarding the sale of poisonous substances, which must be supplied to patients in special bottles. You will please carry out this Order so far as we are concerned, and charge the Council for the bottles supplied. (Signed) Arthur Ferrier, Inspector and Clerk to the Edinburgh Parish Council." The class of work referred to, so far as poisonous medicines and special bottles are concerned, has hitherto been done in a somewhat rough and unsystematic way. In Edinburgh it has probably been, on the whole, as carefully, if not more carefully, done than in any other part of the country. But even in Edinburgh the observance of the regulations will involve considerably greater discrimination and care in the sending out of medicines to the poor. This will mean some extra cost, but it will be admitted that the poor, who are often the least able to protect themselves, are justly entitled to all the safeguards the law can afford. It is satisfactory, and a sign of the times, to see a large public body like the Edinburgh Parish Council taking action of this kind. This deals only with the supplying of medicines to the out-door poor, but it is reasonable to hope that in time the dispensing and compounding of poisons and medical prescriptions in all infirmaries, hospitals, asylums, workhouses, and other public institutions will be regulated in accordance with the spirit of the Pharmacy Acts, as is already the case in many of the best known of these establishments.

IRISH NEWS.

In Connection with the Recent Prosecution at Killemore (County Galway) Petty Sessions, of John O'Meara, a local trader, for offences under the Pharmacy Act, and for which he was convicted and fined, Mr. O'Meara promptly memorialised the Lord-Lieutenant for a reduction of the penalty. A copy of the memorial was forwarded by the authorities to the Council of the Pharmaceutical Society, asking the views of the latter body before acting in the matter. The Council acknowledged with thanks His Excellency's courtesy, and stated they had nothing to add on the general principles of those reductions to what they had urged on previous occasions, except that the actions are brought on the information of the police, that before they can sanction the prosecution they have to procure the analysis of the article at the cost of one guinea in every case, and one-third of the penalty went to the Police Benevolent Fund where the policeman was the means of bringing the offender to justice. If the sergeant reported the case to be a critical one, and asked for assistance, the Society had the expense of sending a barrister down, the expenses of which were not covered by the full fine laid down in the Act. In reference to the case in question, the Council pointed out a discrepancy between the memorial and the police report they received. The memorialist stated that the summons No. 3 was dismissed; the report said that the magistrates imposed a fine of one penny and one shilling costs, which showed their appreciation of the public safety. The Council submitted that such a fine for not labelling, as required by the Act, a poison most prolific in accidental poisoning would not have a deterring or beneficial effect on illegal sellers, and that the remarks of the magistrates as reported by the memorialist were not such as to encourage the Pharmaceutical Society in its efforts to maintain the law. If it is the view of His Excellency and his advisers that the Pharmaceutical Society should cease to prosecute in those cases, the Council add they would be pleased to receive notification to that effect and give it due consideration. To this communication a formal reply has just been received to the effect that the matter, having been laid before the Lord-Lieutenant, his Excellency has been pleased to reduce the fine imposed on John O'Meara at Killimore Petty Sessions on January 7, 1899, to the sum of £2. Not a word is said on the general question, and the concluding paragraph of the Society's letter is studiously ignored. The document conveying His Excellency's decision is merely a printed official form, the blanks being filled up in manuscript. Comment on the encouragement given to the Society to carry out the laws for the maintenance of which it was created is superfluous.

At a Meeting on March 20 of the Dublin Corporation a communication was received from the Pharmaceutical Society of Ireland on the subject of company trading in pharmacy, and the Corporation were asked to express their disapproval of such trading by passing a resolution to that effect. The matter was debated at some length, and finally a motion was adopted practically on the lines indicated by the Society.

The Question of Night Attendance is certainly hedged around with difficulties. A pharmacist in a country town was awakened one cold midnight by a fearful ringing in his ears; it was not tinnitus, it was the bell. He heeded it not till he thought the handle was coming out by the roots, and then, surmising it might be urgent, he went down. "Well." A country gawk bawled: "A want a stawmp." The language which ensued would be only faintly expressed by dashes and notes of admiration.

Mr. John H. Parker, registered druggist, of the firm of Messrs. Smith, Parker and Fitt, Limerick, has purchased the premises 54, William Street, Limerick, and is about to open a drug and chemical establishment.

Mr. W. J. Baxter, M.C.P.S.I., Chairman of the Coleraine Urban District Council, has been appointed a Justice of the Peace for the County of Londonderry, and was sworn in last week before the Lord-Lieutenant of the county. Prior to the institution of the new Local Government Act Mr. Baxter was Chairman of the Town Commissioners.

Dr. J. C. McWalter, M.P.S.I., proprietor of Leonard's Medical Halls, Dublin, is opening a new branch pharmacy at 28, James's Street, Dublin. A feature of the opening is the gift of a box of toilet soap to the first two thousand customers who present themselves. This makes the sixth pharmacy in Dublin belonging to Dr. McWalter, who is yet on the sunny side of 30 years of age.

Trustworthy Tradition confers upon Dr. Butler (who founded the firm of Messrs. Butler and Co., Dublin), the honour of having introduced pharmacy into Ireland. He came over from England in 1817 with the qualification L.S.A., and started a medical practice. The Apothecaries' Hall, of Dublin, notified him that he would have to cease dispensing unless he got their licence. He replied that his own degree was much higher than the L.A.H.D., and refused to close his premises. They prosecuted him and he was fined £25, the result being that he entered for examination. He passed. And now the moment of his triumph was at hand. When the secretary or whoever officiated in the diploma department was handing him his permit, he, with true Irish fervour, began to congratulate Dr. Butler, expressed sorrow at the unavoidable inconvenience—was sure Dr. B. would be glad to receive their certificate. This was the word for which the doctor waited. "No," he thundered, "No, I am not." He then ripped the gorgeous roll into strips, cast them on the floor, and executed an emphatic war-dance an the fragments. "That is what I think," he indignantly exclaimed, as he strode from the room, "of your certificate."

He subsequently Opened up Shop as a chemist and qualified as an M.D. He appears to have been a man of singular strength and originality of character. It is, at any rate, placed to his credit that he brought into Ireland from Paris the first ounce of quinine, costing £20. There is a rumour also that he received a fabulous sum for a half-pint bottle of castor oil; but it would find but little credence in these cutting times. In those primitive pharmaceutical days sarsaparilla root was in great demand, and

it was put up in little trimmed bundles, the inartistic pieces being cut off, and one day, seeing a pile of these minute radicles about to be thrown out, Dr. Butler remarked "Can nothing be done with these, for they are as good as the others?" His ingenuity soon devised a use, for he made with them an extract sarzæ co., the first time it had ever been compounded in the annals of pharmacy. In his own laboratory he manufactured everything he required, drugs, infusions, extracts, etc. So enormous was the volume of his business as medical man, manufacturing and retailing chemist, that for some years it is estimated he made £20,000 per annum.

The Firm of Butler gave birth to another great house, Messrs. Grattan and Co., and it is not a little strange that the repetition of history should be illustrated in this case, for the combat of the certificate was fought a few years back by an apprentice of Messrs. Grattan against the Society.

It was in the Twenties that Mr. John Grattan (whose bust has just been presented to the Museum) came north, and walking down Corn Market with a friend entered a chemist's. He inquired for some simple drug, which was put into a bag, twirled round, and flung on the counter like a grocery. As they passed out his friend said, "This is the place for you," an idea which had already occurred to Mr. Grattan. The net profits for the first year were £35. Upon the trade-label of Messrs. Grattan it is declared that they were the "original makers of ginger ale." It is said, and with truth, perhaps (for the idea was worth a pile of money), that owing to their selling the refreshing beverage only to private customers and probably to the fact of not patenting the name, that they thereby missed a golden opportunity which they themselves had created.

Every Pharmacist is Aware of the Annoyance entailed by being rung up at uncarthly hours for after-thoughts. Messrs. Grattan & Co. have, like all great houses which cater for urgent medicines nocturnally, a clockwork system that does not press unduly upon one victim, as is the custom in smaller pharmacies. By means of a numerous staff, night-duty only falls to a couple every seven or eight weeks. They arrange the week between them, usually, however, responding alternately at night to the summons of the watchman. He, however, only calls them up if he cannot supply the article himself, and refuses parley of any kind with those who wish to buy postage stamps or with any belated reveller desiring to purchase a packet of peppermints to demonstrate to his "sullen dame" the fact of his sobriety.

Pharmaceutical Society of Ireland.—The usual fortnightly meeting for the discussion of scientific and practical subjects was held on March 13, at 67, Lower Mount Street, Dublin, the President, Mr. R. J. Downes, in the chair. Dr. Walsh referred to the examination in chemistry, and to the supply of pharmaceutical chemists in country districts. There was a diversity of opinion as to the severity of the test in chemistry, one holding that the prescribed course was inadequate, and another the reverse. Personally, he believed that a thorough knowledge of chemistry was essential, and he instanced the case in which a country pharmacist was applying his knowledge of advanced chemistry to good purpose in the analysis of water and other things. Dr. Walsh also spoke on the advisability of a post-graduate course for chemists. If the young men in pharmacy could be got to take an active interest in a post-graduate course it would be a step in the right direction. The President said he was distinctly in favour of a post-graduate course. The remainder of the evening was devoted to a discussion on the commercial aspects of pharmacy and the safe keeping of poisons.—On Monday, March 29, a lecture was delivered by Dr. J. L. Baskin, M.P.S.I., on "New Official Preparations." The President regretted that the attendance was not a great deal larger, as the occasion warranted, and felt bound to express the opinion that the members did not give the lecturers that support by their presence as they might do with advantage to themselves and the Society. He trusted that those present would appreciate the trouble to which Dr. Baskin had gone, and show that they had grasped the subject matter thoroughly. On the motion of Mr. Ashe, seconded by Mr. Hunt and supported by Mr. Brown, each of whom spoke of the lecture in laudatory terms, a cordial vote of thanks was accorded to Dr. Baskin for his very able and interesting lecture. The President having announced the next meeting for April 10, when the advisability of the poison regulations would be discussed, the proceedings terminated.

ANALYTICAL NOTES.

ANALYSIS OF BISMUTH SALICYLATE.—The following method is given by W. Kollo for the determination of the amount of salicylic acid and of bismuth oxide in bismuth salicylate. Two grammes of the salt are shaken up with about 30 C.c. of water in an Erlenmeyer flask, and exactly 10 C.c. of normal potash solution is added. The mixture is gradually heated to boiling, the separated bismuth hydrate collected, thoroughly washed, and dried at 100° C., and weighed as bismuth hydrate, BiOOH. The filtrate and washings are made up to exactly 250 C.c., and the salicylic acid determined in 125 C.c. of this solution by retitrating the uncombined potash by means of normal acid solution.—*Pharm. Post*, 32, 2.

LEAD DIOXIDE IN URINE ANALYSIS.—Cloudy or fermenting urine, which is usually difficult to filter bright, may be rendered perfectly limpid by the use of lead peroxide, as suggested by Loubiou. 10 C.c. of the urine to be examined are treated with a few drops of phenol-phthalein solution, a little normal soda solution is added until a faint pink colour is produced. 1 Gm. of lead peroxide is then added and the mixture is briskly shaken for about a minute, then filtered. A few drops of Tanret's reagent is added, and the mixture is boiled. In the presence of albumin more or less opalescence is produced according to the quantity of that body present. Quantitative experiments show that the dioxide is without action on albumin in neutral solutions.—*Bullet. de la Soc. de Pharm. de Bordeaux*, 38, 209.

DETERMINATION OF HYDRASTINE IN FLUID EXTRACT OF HYDRASTIS.—Rusting proposes the following simple method for determining the hydrastine value of the fluid extract: 10 grammes of extract are weighed into a large flask mixed with 20 Gm. of water, and evaporated to below 20 Gm. After cooling, the fluid is made up to exactly 20 Gm. with water, shaken with a little sand, and filtered; 10 grammes of the filtrate are then shaken with ether 25 C.c. and ammonia, 3 C.c. After a few minutes 25 C.c. of petroleum ether are added, and the mixture again shaken, and subsequently 2 Gm. tragacanth are added and the whole is again agitated; 40 C.c. of the clear ethereal solution are drawn off, of which about 25 C.c. are removed by evaporation or distillation, after which the flask is corked and left to stand in a cool place for two hours. The fluid is carefully poured off the separated crystals which form, and the flask dried on the water-bath. The author finds the average yield of hydrastine by this method to be of 2·08 per cent.—*Pharm. Ztg.*, xliii., 97, 866.

SEPARATION OF GERANIOL AND CITRONELLOL.—J. Flatau and H. Labbé propose the following method for the separation of geraniol and citronellol from essential oils which contain both alcohols, such as geranium oil, citronella, etc. The oil is saponified with alcoholic potash, and rectified *in vacuo*. The portion distilling between 120° C. and 140° C. at 30 Mm. pressure is dissolved with an equal weight of phthalic anhydride in an equal volume of pure benzene; after boiling for an hour under a vertical condenser, the benzene is evaporated, and the residue treated with sodium hydrate; the gelatinous mass thus obtained is dissolved in tepid water, and the solution washed with ether to remove impurities; the esters are then liberated with dilute hydrochloric acid, and washed out with petroleum ether at 20° to 25° C.c. The petroleum solutions are then cooled to —5° C., when the geranylphthalic ester separates out completely in well-formed crystals. On removing these and evaporating the mother liquor, the citronellylphthalic ester is left as a yellow oily residue, which does not crystallise. The two esters are then saponified separately with alcoholic potash and the alcohols subsequently purified by redistillation. Pure geraniol thus obtained boils at 228° C. at ordinary pressure without decomposition, and at 122° C. under 29 M. Its density is 0·8965 at 0° C. Citronellol boils at 221°·5 C., and has a stronger rose odour than geraniol. According to this method the alcohols contained in Indian geranium oil amount to 80 per cent., composed of geraniol, 63, citronellol, 17. Citronella oil contains 46 per cent. of alcohols, geraniol, 40, and citronellol 6 per cent. African (Bourbon) geranium oil, with 80 per cent. of alcohols, gave 70 per cent. citronellol and 10 per cent. geraniol. Otto of rose, 85 to 90 per cent. alcohols, geraniol, 70, and citronellol, 15 per cent. Melissa oil, 32 per cent. of alcohols, geraniol, 20 per cent., linalool, 12.—*Comptes rendus*, 126, p.

Trade Notes.

Easter Holidays.—Holloway's Wine Company, Ltd., 61, New Oxford Street, W.C., intimates that the office and warehouse will be closed from Thursday, 6 p m. till Tuesday following.

Messrs. Sainsbury, of lavender water renown, announce that early in April they will remove from the Strand to 136, Regent Street, W. This change has been necessitated by the demolition of their premises in the Strand, which has been occupied by the firm for upwards of sixty years.

The Proprietors of Edgar's Croup Lotion have introduced a smaller bottle of their preparation, which retails at 1s. 6d. and contains half the quantity of the 2s. 9d. size. This has been placed on the P.A.T.A. schedule. Chemists can have a supply of new show cards, etc., on application to the proprietors at Dartford.

The Poison Regulations.—Mr. W. Hardy, Thistleton, Oakham, sends a model of a metal band for the corks of bottles containing dangerous drugs. The band has a roughened surface, and fits tightly round the upper part of the cork, so that, unless the person has extremely hard fingers, it cannot fail to draw the attention of even an absent-minded person to the fact that caution is requisite with regard to the contents of the bottle. The cost of the band should be very small. A patent has been applied for.

Messrs. Evans, Lescher, and Webb, 60, Bartholomew Close, E.C., are issuing a card to hang in the pharmacy, upon which the new poison regulations are printed, together with a list of poisons within the meaning of the Act of 1868, and the conditions under which they may be sold by retail. Upon the back of the card different styles and prices of poison bottles are shown, also a cabinet for storing poisons, designed by the firm. An order form is also published by the firm, giving a list of the chief poisons for which special bottles are required.

Messrs. Ayrton & Saunders, Liverpool, wish to inform their friends in Queensland that they have appointed, as their representatives and agents for Queensland, Messrs. Carl Zoeller & Co., who not only have on show a complete selection of samples of the various manufactures of the firm, but also hold stock of many leading lines, and trust chemists visiting Brisbane will not fail to call upon Messrs. Carl Zoeller & Co. Messrs. Ayrton & Saunders also wish particularly to state that, in the event of any of their friends visiting England, it will be a real pleasure if they can be of any service to them, and they trust they will make a call at 34, Hanover Street, Liverpool, before returning home.

The Patent Caution Label Co., Upper Hagley Road, Birmingham, sends a specimen bottle with a patent caution label attached, which has been designed for the prevention of accidental poisoning. It is a red label, with a strip of sand-paper placed immediately below the words "Patent Caution Label, indicating that the contents of this bottle are Not To Be Taken." The advantages claimed for these labels over poison bottles are that they can be readily attached to or detached from any bottle; they can be made in any form to meet the requirements of customers, and their cost is trifling as compared with other suggestions for carrying out the poison regulations. Inquiries should be addressed as above.

Fallowfield's 'Photographic Annual,' 1899 (Jonathan Fallowfield, 146, Charing Cross Road, W.), just to hand, is a bulky volume of some 852 pages, containing much useful information, in addition to a comprehensive catalogue of photographic materials, chemicals, and apparatus. As a book of reference for photographic dealers, it occupies a prominent place in the first rank amongst similar publications, and no one interested in the trade can well afford to be without a copy. The illustrations include a series of sixteen snap-shots taken with the "Facile" and "Premier" hand cameras, and are probably the finest of the kind yet produced.

Obituary.

Trimming.—On March 18, Alan John Trimming, Chemist and Druggist, Alton, Hants. Aged 53.

Taylor.—On March 25, Edmund Bamford Taylor, Chemist and Druggist, Rochdale. Aged 65.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

March 29, 1899.

Business has not been excessively brisk during the past few days, in consequence, no doubt, of the near approach of the end of the quarter, and also by the approaching Easter holidays. There are practically no changes of any particular importance to report. At the London bark sales on Tuesday Cinchona again sold at a tangible advance, but this was expected in many quarters. Quinine remains firm, and speculation in the article appears to have by no means died out. The general impression amongst those who are usually best informed appears to be that price will probably be driven even higher in the near future. The question, however, still remains as to what will happen then. This is very difficult to foresee, and even the most knowing ones do not venture to predict with any tone of certainty. Sulphate of Ammonia is also dearer. The following are the ruling quotations for articles of principal interest:—

Acetanilide.—The price of the combined makers remains at 11d. per lb. for 5 cwt. lots, up to 1s. 2d. per lb. for smaller quantity.

Acid Carbolic—Is firm at about the prices quoted last week.

Acid Tartaric.—English spot, 1s. 1d. per lb., foreign, 1s. 0½d. per lb., *c.i.f.*

Alum.—Loose lump £5 7s. 6d. per ton; ground, in bags, £6 per ton ex-store.

Ammonia Compounds—Are unchanged, with the exception of *Sulphate*, which is dearer and very firm at £11 to £11 2s. 6d. for grey 24 per cent. prompt, London; Hull £10 18s. 9d.; Leith £11 2s. 6d.; Beckton £10 15s.; Beckton terms £10 15s. per ton.

Angostura Bark—Continues very scarce; nominal value here 6½d. per lb.

Antimony.—*Regulus* is quoted £38 to £39 per ton. *Crude* (*Black Sulphide*), £23 to £23 10s. per ton. on the spot for *Japan*.

Arsenic—Is steady at 18s. per cwt. for powder and 34s. per cwt. for lump.

Asafetida.—Several sales have been made privately since last week's auctions, and the inquiry still continues for quality between 40s. and 55s. per cwt.

Bleaching Powder (Chloride of Lime).—English, £6 per ton.

Blue Flag Root—Is scarce, and price has been raised to 7½d. per lb. on the spot.

Boracic Acid.—*Crystals* 26s. per cwt., *powder* 28s. per cwt.

Borax.—*Crystals*, 16s. 3d.; *Powder*, 16s. 9d. per cwt.

Camphor.—There is no change to report either in *crude* or in the *refined* article.

Cannabis Indica.—Demand has slackened off, and holders being anxious to move their stocks would probably be ready to shade last price obtained.

Citric Acid—Very quiet at nominally 1s. 2¾d. to 1s. 3½d. per lb. for *crystals*, on the spot.

Cloves.—*Zanzibar* are dull and easier, business done comprising March-May and April-June delivery at 3⅝d.

Bromides and Bromine—Without change.

Castor Oil—Is easier. *Belgian* first pressing, spot, £25 per ton; July-December, £24 10s.; second pressing, £24 per ton, ex-

wharf Hull; manufactured, £23 15s. to £25 5s. per ton in barrels: 2⅛d. to 2⅛d. per lb. in cases for prompt delivery, ex-wharf, London. *London* pressed, 25s. per cwt. in barrels. *French*, 25s. 6d. to 26s. per cwt.

CINCHONA BARK.—Moderate supplies were offered at these auctions to-day, amounting to 3446 packages of all descriptions, against 2608 packages at the preceding sales. A strong demand prevailed throughout, good rich bark being in active request, the inferior qualities being less sought after, and fully two-thirds changed hands. The biddings at the opening were on a parity of the recent Dutch auctions, but as the sale progressed still dearer rates were paid, the average unit obtained being 2¼d., or fully 10 per cent. above the Amsterdam prices of Thursday last. This result shows an advance of about ⅛d. on the last London auctions. *Ceylon*: 631 bales and 18 cases offered and 240 bales sold, according to analysis: Succirubra, stem chips and shavings, fair at 4½d., renewed ditto good rich at 11⅛d. to 11⅜d., broken quill and chips at 4d. to 6⅝d. Officinalis, chips and shavings, fair to good renewed at 7d. to 11¾d. Ledger, stem chips and quillings at 4⅞d., fine chips and shavings at 11½d. to 1s. 1⅜d., hybrid stem chips at 6⅝d. *East Indian*: 732 bales 14 cases and 87 bags offered, and 629 bales sold; red, stem chips and shavings, ordinary to good at 3¼d. to 8⅛d., renewed ditto 7⅛d. to 9¼d., root 3⅝d. to 6d. Officinalis, chips and shavings, common to good rich 3⅛d. to 10d., renewed ditto 6d. to 1s. 0¾d., good root at 7⅞d. Ledger, stem chips and shavings, good at 10½d. to 10⅞d. broken quills and chips at 7¼d. to 8½d. *Java*: Of 95 bales 156 bags and 166 cases offered 235 packages sold. Ledger, branch at 6¼d.; stem chips, ordinary to fine rich 5½d. to 1s. 3½d., root at 6½d., quill at 6d. to 7⅛d. *South American*: 443 bales Bolivian cultivated Calisaya offered and 417 bales sold, ordinary to good quill at 6d. to 1s. 2⅛d., ditto flat at 8⅝d. to 1s. 1⅝d., chips at 11d. to 1s. 1¾d. *Carthagena*: 116 bales bought in, flat at 5½d. to 9d. *Cuprea*: 495 bales offered and sold at 2¼d. to 4d. *Red*: Of 21 cases 15 sold, damaged quill and chips at 7d. to 7⅞d. *Lima*: 107 bales offered and bought in at 4d., also 14 bales damaged Maracaibo at 4d. *African*: 351 bales offered and 263 bales sold, quills at 4½d. to 8¼d., broken quill and chips 6⅛d. to 8¾d.

COAL TAR DISTILLATION PRODUCTS.—There are no changes of any significance to report.

CODEIA—Is firm and in good demand at 12s. 3d. to 12s. 6d. per oz.

COD-LIVER OIL.—Market is very quiet at about 62s. 6d. to 65s. per barrel, *f.o.b.*, according to brand, for best new non-congealing *Norwegian oil* in 25 gallon tin-lined barrels, while 1898 oil is obtainable at 57s. 6d. to 60s. per barrel.

COLOCYNTH.—The supply is very moderate and prices are higher, a few cases medium quality might be obtained at 1s. per lb., really good apple being very scarce.

CREAM OF TARTAR—Quiet; first *white crystals* spot 76s. per cwt., *powder* 78s. to 82s. per cwt.

GLYCERIN.—*Crude* is quiet but steady at nominally unchanged prices. *Refined* is quoted 52s. 6d. to 55s per cwt., according to quantity and make, for English, and 53s. 6d. to 60s. per cwt. for German for the best white double-distilled chemically pure 1260° quality in tins and cases.

GUM TRAGACANTH.—A good business has been done this week mainly in the lower grades at very full values. Firsts are quoted £14 10s. per cwt.; seconds, £13 per cwt.; thirds, £11 15s. per cwt.

IODIDES AND IODINE—Unchanged from last week.

IPECACUANHA—Has been quiet this week, and we have not heard of any business. *Rio* held firmly for 12s. per lb., and a new arrival of 31 bales comes to firm hands. *Carthagena* held for 7s. 9d. to 8s. per lb. according to holder and quality.

JALAP ROOT.—Advices from New York state that this is arriving freely, and it is therefore expected that prices will decline—but it must not be forgotten that new root frequently loses 10 per cent. in weight before thoroughly dry.

MERCURIALS—Are without change at 2s. 10d. per lb. for *calomel* and 2s. 6d. per lb. for *corrosive sublimate*.

MORPHIA—Is very quiet, makers quoting 4s. 6d. per oz. for the *hydrochlorate powder*, and 2d. per oz. more for the *crystal salt*.

NITRATE OF SODA—Is quoted £8 15s. per ton for *refined* on the spot.

OILS (ESSENTIAL).—*Peppermint*: American H.G.H. is lower at 5s. to 5s. 1½d. per lb., on the spot, whilst *c.i.f.* offers come from the other side at rather below this parity. Wayne County 3s. to 3s. 6d. per lb., as to quality. Japan dementholised, 3s. per lb.; 40 per cent, 4s. 9d. per lb. *Aniseed* (*Star*) is slow of sale at 5s. 9d. to 6s. per lb. *Cassia* quiet at 4s. 6d. to 5s. per lb., as to quality *Lemongrass* rather easier at 2⅞d. per oz. *Citronelle*: 1s. 1d. per lb. for drums. *Cinnamon* steady at 1s. 6d. per oz. for fair, and 2d. per oz. for leaf oil.

OILS (FIXED) AND SPIRITS.—*Linseed* quiet, and slightly easier. London spot pipes, £17 15s. to £18 per ton; barrels, £18 5s.; April, £18 2s. 6d.; May-August, £17 7s. 6d.; September-December, £17 2s. 6d. Hull spot, naked, £17 2s. 6d.; April, £17; May-August, £16 5s.; September-December, £15 15s. per ton. *Rape* quiet, ordinary brown spot, May-August, and September-December, £21 to £21 5s.; refined spot, £22 10s. to £22 15s.; Ravison naked spot, £17; April and May-August, £17 5s. per ton. *Cotton* steady. London crude spot and April £15 2s. 6d., May-August £15 7s. 6d., refined spot £16 10s. to £17, according to make; Hull naked refined spot £15 10s., April and May-August £15 12s. 6d.; crude spot £14 12s. 6d., April and May-August £14 10s. *Olive*: Mogador £30 to £31, *Spanish* £30 to £32 per ton. *Coconut* steady. Ceylon spot £25 15s., landed March-April and April-May £24 10s. *c.i.f.*, Cochin £29 10s. landed, April-June £26, July-September and August-October £25 10s. per ton *c.i.f.* *Palm*: Lagos £24 10s. per ton on the spot. *Lubricating Oil*: Pale American spot 5s. 6d. to 7s. per gallon; black 5s. to 5s. 6d.; Russian black 5s. to 5s. 6d.; pale 5s. 6d. to 8s. *Turpentine*: After having been somewhat weak and depressed has again slightly hardened, the latest quotations being American spot and April 32s. 6d. per cwt., May 32s., June 30s. to 30s. 3d., July 26s. 9d. to 27s., Sept.-Dec. 26s. 6d. to 26s. 7½d., Jan.-April, 1900, 27s. to 27s. 3d. per cwt. *Petroleum*: Dull. Russian spot 5d. per gallon, American spot 5⅜d. to 5⅞d.; water white 7d. to 7½d. per gallon. *Petroleum Spirit*: *American*, 8½d. per gallon. *Deodorised*, 9d. to 9¼d.

OPIUM.—Market has remained exceedingly quiet; there have been, however, some small sales of medium quality at 10s. 4½d. to 10s. 6d. per lb. In Smyrna the article was reported to be slightly firmer at the end of last week.

OXALIC ACID—3d. to 3⅜d. per lb. net, free delivered in London.

PEPPER.—*Singapore* is firm at 5¼d. per lb., basis fair on the spot, and 5⅛d. June-August steamer shipment, but business is restricted.

PHENACETIN—Quiet and weak, at 3s. 6d. to 4s. per lb., according to quantity, for both *crystals* and *powder*. *Bayer's* article is quoted 6s. 1d. per lb., and *Riedel's* 5s. 5d. per lb., in original 1 lb. bottles.

POTASH COMPOUNDS.—There are no changes of any importance to record.

QUICKSILVER—Is weak, price being nominally still £8 5s. per bottle from first-hand, while same can be purchased from second-hand at 4s. per bottle less money.

QUININE —The excitement in the article has somewhat abated, price remains, however, very firm, the agents of the favourite *B. & S.* brand quote 1s. 9d. per oz. for 1000-oz. lots in 100-oz. tins; they are, however, by no means free sellers at the price, while speculators are paying up to 1s. 9½d. per oz. for May delivery. Everything would appear to point to even higher prices for the article in the near future, while it is exceedingly difficult to predict as to what the ultimate result will be.

RAD. HYDRASTIS CANADENSIS—Continues scarce here, 3s. per lb. being asked. From New York it is reported that whilst more is offered stocks are really small, and that with renewed demand prices are sure to rise, as the spring-gathered root is of comparatively little value.

ROSIN—Slightly easier at 4s. 4½d. to 4s. 6d. per cwt, ex-wharf, for strained on the spot, and 4s. 1d. per cwt. for March-May, and 4s. 2d. for July-September shipment per sailing vessel.

SALTPETRE.—English refined is quoted 20s. per cwt. in casks and 21s. per cwt. in kegs.

SENNA.—*Alexandrian* leaf is wanted, and reports are current that the new crop will be short. *Pods* have all been cleared from first hands at up to 4½d. per lb. *Tinnevelly* is quiet but very firm; the steamer "Egypt," due here on the 31st inst., brings nothing

from Bombay. *Pods* are wanted at 2¼d. per lb., but holders ask 2½d. to 2¾d. per lb.

Soda Compounds—Are practically without change from last week.

Soy.—China is quiet at 1s. 3½d. per gallon.

Star Aniseeds—Are tending lower, 110s. per cwt. being asked on the spot, but for forward delivery 90s. per cwt. *c.i.f.* is quoted; 325 cases just arrived are to be sold on April 9, "without reserve," for account of the underwriters.

Sugar of Lead—Firm at 31s. per cwt. for English and 26s. 6d. per cwt. for foreign.

Sulphate of Copper—Is quoted £22 15s. to £25 10s. on the spot, according to quantity and brand.

Sulphonal.—Makers are firm at 17s. per lb. for both *crystals* and *powder*. Stock in second-hand appears to be getting low, small lots can, however, still be picked up here and there at somewhat below makers' quotations.

Sulphur—With a good inquiry, prices are firm. *English* roll 7s. 9d. to 8s. per cwt.; flowers, 10s. per cwt. *Foreign*, roll, 6s. 6d. per cwt.; flowers, 7s. per cwt.

White Pepper—Quiet but steady. *Singapore* has sold to a limited extent at 8⅝d. per lb., basis fair, on the spot, and at 8¾d. per lb. for June-August steamer shipment. In *Penang* no business has been reported.

Manchester Chemical Report.

March 29, 1899.

There is a fair amount of inquiry, and there is a somewhat better feeling than existed last week, especially for miscellaneous chemicals. Ammonia Alkali, 58 per cent., is in request, and Caustic Soda is dull, though steady. Sulphate of Copper has again advanced, and best brands are quoted £25 per ton, delivered here. Brown Acetate of Lime is rather lower, and ranges from £4 12s. 6d. to £4 15s. per ton, Welsh and American, according to quantity. Chlorates of Potash and Soda continue unaltered, and Acetate of Soda is dull at £13 10s. per ton, spot. Arsenic is rather higher at £17 per ton, ex-ship, Garston. Makers continue well sold forward in Naphthas, but Benzols are still disappointing, 90's being as low as 7½d., while 50's to 90's range from 7¾d. to 8d. Pitch is very firm at 22s. 6d. per ton, *f.a.s.*, Manchester Ship Canal, while 27s. is mentioned, *f.o.b.*, West Coast. Green Copperas, Lancashire make, is very dull, and the export demand is far from active. Yellow Prussiate is scarce and a shade higher at 7⅞d. to 8d. per lb. Glycerin is quoted £47 10s. per ton, naked, ten-ton lots, delivery U.K., and tins and cases are now quoted only 3s higher. Aniline oil and salt again lower. The oil trade is steadily improving on the Ship Canal, and arrangements are being made for dealing with much larger quantities in the future.

Liverpool Market Report.

March 29, 1899.

The rapid advance noted in the price of turpentine recently, continued well into this week, but latterly a slight reaction has been manifest, and the present quotation shows a fall of 3d. per cwt. Good business has been done in Beeswax of African and South American origin at full prices. South American Honey has also occupied a fair share of attention, and a parcel of good Sierra Leone Ginger changed hands at fully late prices. Oils generally have fluctuated very little, Castor Oils being the only ones showing a weaker tendency. The demand for chemicals has only been limited, but prices are firm, and advances are chronicled in Sulphate of Ammonia and Sulphate of Copper. Large consumers would do well to note the firm tone and inclination to advance shown just now by lead salts generally.

Ammonia Salts.—*Carbonate* continues very firm at 3d. per lb. *Sal Ammoniac*, 33s. to 35s. per cwt. *Sulphur* higher, £10 18s. 9d. to £11 per ton.

Beeswax.—Sales of African have been made at £6 2s. 6d. per cwt. for Sierra Leone; £6 12s. 6d. to £6 15s. for Gambia, and £6 15s. for Bissao. First-rate Peruvian has made £7 5s. to £7 15s. per cwt.

Bleaching Powder—Is firm at £5 per ton.

Canaryseed.—Turkish is in very slack demand, and is only selling in retail amount at 26s. to 26s. 6d. per 464 lbs.

Copperas—Is firm at 39s. per ton for Lancashire, and 37s. per ton for Welsh.

Copper Sulphate—Remains very firm, closing at £24 10s. to £24 12s. 6d. per ton.

Ginger.—34 bags of Sierra Leone made 20s. 6d. per cwt. ex-quay.

Honey.—25 barrels of Chilian Pile 1, brought 24s. 6d. per cwt., and Pile X 30s. to 32s. 6d.

Lead Salts.—Acetate English, £28 per ton; foreign white, £26; brown, £19. Nitrate, £22 10s. Litharge, £17 10s. to £18 10s. per ton.

Linseed.—500 tons of River Plate, 4 per cent., sold at 33s. 3d. to 33s 6d. per 416 for March to April delivery, and Calcutta is reported to have sold to considerable amount on a like basis at full prices for April delivery, but the exact figure is kept secret.

Oils (Fixed and Spirits).—*Castor* is somewhat quiet as regards spot lots, but forward receives a fair amount of attention. Calcutta "good seconds" is quoted at 2 15/16d. per lb. on the spot, and 500 casks for delivery July, September and October have sold at a slightly easier rate. French 1st pressure, 2¾d. per lb.; 2nd pressure 2⅝d. Madras, 2¾d. per lb. *Olive* is selling quietly at £31 10s. per tun for Malaga and £31 for Seville. *Linseed* of Liverpool make is steady at 19s. 3d. to 19s. 6d. per cwt. in export casks. *Cottonseed* is still firm at 17s. 6d. to 18s. per cwt. packed for export in barrels. *Spirits of Turpentine* is in moderate demand at the full price of 34s. 9d. per cwt.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate*, 3½d. to 3¾d. per lb. *Cream of Tartar* is steady at 75s. to 80s. per cwt., but the transactions effected are of small amount. *Pearlashes* are nominal at 33s. to 34s. per cwt. *Potashes*, 24s. *Prussiate* (*Yellow*), 7½d. to 8d. per lb. *Saltpetre*, 22s. per cwt.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax*, £16 to £16 10s. per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton. *Crystals*, £3 per ton. *Nitrate* has gone up to 8s. 6d. and 8s. 9d. per cwt., and is in fair demand.

Turmeric.—39 bags of *Cochin* bulb sold ex-store at 10s. 6d. per cwt.

Newcastle Chemical Report.

March 29, 1899.

Now that preparations are being made in earnest for the approaching Baltic shipping season, a shade more life is apparent in this local branch of trade. The first steamer for St. Petersburg will soon now be put on the berth for loading, when heavy chemicals will be called on to provide the principal part of the cargo. Bleaching Powder is still very steady quoted against fair orders. Soda Crystals are moving a shade better to the Channel ports. Sulphur a trifle scarce. Prices keep as follows:—Bleaching Powder, £5 5s. to £5 10s. Soda Crystals, 45s. to 47s. 6d. according to markets. Soda Ash, 50 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Sulphur, £4 15s. to £5. Caustic Soda, 70 per cent., £7 5s. per ton.

TERMS OF SUBSCRIPTION.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

For Sale, cheap, set 'Pharmaceutical Journal,' 61 volumes set 'Year-Book of Pharmacy,' both complete and perfect.—A. B., 'Pharmaceutical Journal,' 5, Serle Street, London, W.C.

Offers wanted for regular supplies of zinc ashes.—Address, John Cochrane, Graham Street, Leith.

Bismuth Subcarb., 5s. 3d. per lb.; 4 lb., 20s., post free, for cash.—Eastman, Forest Lane, Stratford.

Microscope.—Woolley's 1 in. to ¼ in. objective, substage condenser, micrometer eyepiece, polarising apparatus, etc. Bargain, 35s. Half-gallon bichromate battery, good as new, 6s. Wagner's 'Chemical Technology' as new, 7s. 6d.—Micro, 'Pharmaceutical Journal' Office, 5, Serle Street, London, W.C.

Hooper's Water or Air Bed for 4 ft. bedstead. Cost £15 three months ago. Used in amputation case.—John Ettles, Chemist, Burnham-on-Crouch.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

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Calendar for the Week.

Sunday, April 2.	Easter Sunday.	Sun rises 5.36; sets 6.33.
Monday, April 3.	(11.56 M.	Sun rises 5.34; sets 6.34.
Tuesday, April 4.		Sun rises 5.31; sets 6.36.
Wednesday, April 5.		Sun rises 5.29; sets 6.37.
Thursday, April 6.		Sun rises 5.27; sets 6.39.

IRISH PHARMACISTS' ASSISTANTS' ASSOCIATION, Dublin.—Annual Dinner.

LINNEAN SOCIETY, Burlington House, London, at 8 p.m.—Papers will be read on "Carex Wahlenbergiana," by C. B. Clarke, and on "The Discovery and Development of Rhabdites in Cephalodiscus," by F. J. Cole.

Friday, April 7. Sun rises 5 25; sets 6.41.

PUBLIC DISPENSERS' ASSOCIATION, 46, Clarendon Square, N.W., at 8 p.m.—Discussion on the poison regulations, to which all dispensers are invited. Any unable to attend are requested to send their views, stating the steps they are taking in the matter.

Saturday, April 8. Sun rises 5.23; sets 6 43.

Publications Received.

PRACTICAL LESSONS IN BOOK-KEEPING. By THOMAS CHALICE JACKSON, B.A., LL.B. (Lond.). Pp. viii. + 372. Price 3s. 6d. London: University Correspondence College Press. 1899. From the Publishers.

MEDICAL ANNUAL AND PRACTITIONER'S INDEX. Pp. lxxx. + 879. Price 7s. 6d. net. Bristol: John Wright and Co. 1899. From the Publishers.

UEBER DIE THERAPEUTISCHE ANWENDUNG DES JODIPINS BEI ASTHMA BRONCHIALE UND BEI EMPHYSEM. By Dr. OTTO FRESE. Reprinted from the *Münchener Medic. Wochenschrift*. From the Author.

WILLING'S PRESS GUIDE AND ADVERTISER'S DIRECTORY AND HAND-BOOK. 1899. Pp. xii. + 398. Price 1s. London: J. Willing, jun., Ltd., 125, Strand, W.C. From the Publisher.

Partnerships Dissolved.

(From the London Gazette.)

H. S. Hogg and W. G. McDonald, Wholesale and Retail Chemists, Ulverston.

Thos. R. Judson and John R. P. Graham, Physicians and Surgeons, 44, Mill Lane and 7, Eaton Road, West Derby, Liverpool. Debts will be received and paid by Thos. R. Judson.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Thos. Y. Morter (trading as T. and E. Morter), Photographer and Photographic Dealer, 8, Queen Street, Colchester.

Ethelbert Foster, Chemical Manufacturer, Moss Bank Works, Widnes.

Frederick Wells, Dentist, 2, Coventry Street, Prestonville Road, Brighton.

Saml. Wright, Arthur Wright, and Thomas G. Butcher (trading as A. S. Wright and Co.), Soap Merchants, etc., Balm Road Mills, Hunslet, Leeds.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Allen, Ayrton, Bell, Burdon, Cleugh, Davy, Dewing, Dudderidge, Evans, Farr, Fox, Frost, Gall, Gilderdale, Glew, Hardy, Helbig, Henry, Hill, Hicks, Holloway, Hudson, James, Keen, Kendrick, Kermath, Lescher, Ling, Morley, Murray, Palmer, Rabel, Rogers, Saunders, Squire, Wain, Wallace, Wathes, Webb.

PHARMACY IN AUSTRALASIA.

[*From our Melbourne Correspondent.*]

At the February Meeting of the Pharmacy Board of Victoria, it was unanimously decided that Mr. Blackett (President), and Mr. H. T. Tompsitt (Hon. Treasurer) be requested to retain their positions for another year. Both gentlemen pleaded guilty to the soft impeachment. At the same meeting Dr. F. Hobill Cole was appointed examiner in materia medica, *vice* the late Mr. J. Bosisto.

At the February Meeting of the Pharmaceutical Society of Australasia it was arranged that the forty-second annual meeting should be held at the Melbourne College of Pharmacy on March 23, when the annual report and balance sheet would be submitted, and the college prizes presented to the successful candidates.

The Staff at the Melbourne College of Pharmacy have all been reappointed for the current year, as follows :—Lecturer on Chemistry and Director of the Chemical Laboratory—Mr. A. W. Craig, M.A. Lecturer on Materia Medica—Mr. Sidney Plowman, F.R.C.S., Eng., F.I.C. Lecturer on Botany—Mr. D. McAlpine. Lecturer on Pharmacy to the Medical Students of the Melbourne University—Dr. F. Hobill Cole, M.B. Demonstrator and Assistant—Mr. B. G. Lewis.

At a Meeting of the Dental Board of Victoria on January 27, attention was drawn to the recent registration by the General Medical Council of Great Britain of a Victorian dental student (Ernest Harold Christopher Bailey, of Ballarat, Victoria, Australia), on the ground that he had passed an examination by the Dental Board of Victoria, after fulfilling all the requirements of a dental curriculum in Victoria "equivalent in all respects to the dental curriculum of Great Britain"; and it was resolved that a letter be written to the Registrar of the General Medical Council pointing out that (*a*) No dental student had passed through such a curriculum in Victoria; (*b*) No such curriculum was ever in existence in Victoria; (*c*) That such a curriculum had been passed by the Dental Board of Victoria, but the regulations by which it was founded were declared *ultra vires* by the Attorney-General before any practical advantage had been taken of them.

Referring to this Matter, the *Australasian Journal of Pharmacy* remarks that it seems almost incomprehensible that under the circumstances the mover of Mr. Bailey's application should have felt justified in stating that "after carefully going through all the papers he found that the curriculum and the lines of examination were exactly modelled upon those which obtain in this country, and unless the clause in the Dentists Act which allowed them to register certain foreign and colonial diplomas was to be a dead letter, this application could not logically be refused." The *Journal* adds: "We are not bringing into the subject here the question of Mr. Bailey's professional skill or knowledge, but we think it a matter of regret that this, 'the first case of the kind,' as it was described, should have been decided on an apparent misunderstanding of the conditions under which the applicant's Victorian certificate had been obtained."

Our Victorian Contemporary adds a postcript, which we reprint for the benefit of all those whom it may concern: "A map of Australia might at the same time be forwarded to the editor of the *British Journal of Dental Science*, whose geography, judging by the following paragraph, must have been woefully neglected. This is how our contemporary refers to the matter dealt with above: 'A Colonial L.D.S. accepted on our Register. Mr. Bailey, a Licentiate in Dental Surgery of the Victoria University, New South Wales, has been admitted to the Dentists' Register. The curriculum and examination of the Victoria University are practically identical with those of our bodies under the General Medical Council.'" Readers of the *Pharmaceutical Journal* do not need, we hope, to be informed that the University thus erroneously referred to is that of Melbourne, Victoria, and is as distinct from that of Sydney, New South Wales, as St. Andrews, in Scotland, is from Oxford, in England.

The First General Meeting of the Registered Pharmacists' Society of New South Wales—the circumstances leading up to the initiation of which have been explained in previous notes—was held on February 16, when the Chairman (Mr. H. A. Rose) stated that the Society had already secured over eighty paid members, which he expected to see doubled at an early date. They had already acquired rooms at 149, King Street, Sydney, which would serve as a pleasant rendezvous wherein the members could discuss the topics of the day bearing upon their business, and where lectures, readings, and social gatherings could also be indulged in. Referring to the proposed rules, which were unanimously adopted, Mr. Bellemey (one of the leading spirits of the movement) declared that they were drawn up with the express intention that the new society would shortly claim registration under a section of the (N.S.W.) Companies Act specially framed for literary, benevolent, and other such societies. The first Council of the Society have been elected as follows:—R. T. Bellemey, H. A. Rose, I. R. Willows, G. C. Wells, C. E. Newman, W. G. Cains, V. P. McManus.

An Early Closing Movement has been initiated in Sydney under the auspices of the Council of the Pharmaceutical Society, and according to the report of the Secretary (Mr. Forster), a considerable number of chemists have agreed to close their establishments every evening, except Saturdays and Sundays, at 9 p.m. Efforts are being made to have this understanding generally recognised by the craft. At present many of them keep open until 11 o'clock.

At the Annual Meeting of the Dental Association of New South Wales on January 31 officers were elected for the ensuing term as follows:—Dr. A. Burne, President; Mr. H. Pateson and Mr. S. Chain, Vice-Presidents; Mr. A. Davis, Hon. Treasurer; Committee, Messrs. H. S. Newton, J. S. Darton, C. Marshall, and F. A. Gabriel; Auditors, Mr. B. Corbett and Mr. C. Chandler; Hon. Secretary, H. Taylor. Hopes were expressed that the Dental Bill, shelved last session, might have better fortune in the near future. The Association starts the new year with a balance of £97 17*s.* 3*d.* in hand.

An Important Decision was Arrived at by the Pharmacy Board of South Australia at the January meeting. Among the letters dealt with was one from Mr. A. E. Edgar, applying to be registered on the ground of his registration in Tasmania. He further asked that, should the Board consider this qualification inadmissible, his apprenticeship in Tasmania and the fact that he had passed the Victorian Preliminary Examination might be accepted, and that he might be allowed to present himself for the Modified Examination. Another applicant (Mr. F. Holborn) desired to present himself for examination on the ground that he had served an apprenticeship in Victoria and was registered in Western Australia. While expressing sympathy with the applicants, the Board resolved that it did not see its way clear to accept apprenticeship served outside the province. Mr. White, one of the leading members, said that he did not see how such applications could be granted unless there were reciprocal relations between the colonies. When political federation of Australia is accomplished, as it very probably will be at an early date, it is to be hoped that another and successful effort will be made to federate the various colonial pharmaceutical societies into one grand and influential body.

At a Meeting of the (New) Pharmacy Board of New Zealand, at Christchurch, on January 26, Mr. G. Bonnington, who has had considerable experience on previous boards, was elected President. Mr. C. Widdowson, a local solicitor, has been appointed Registrar.

Partnerships Dissolved.

(From the London Gazette.)

Henry Hetley, M.D., and John C. Underwood, Physicians and Surgeons, Upper Norwood, so far as regards John C. Underwood.

Albert E. Boulton and John William Jessop, Surgeons and Apothecaries, Horncastle, Lincs., so far as regards John William Jessop.

William Foulds and Arthur S. Dean, Chemists and Druggists, 40, Low Street, Keighley.

L. Sawyer and Percy Lankester, Photographers, 230, Regent Street, London. Debts will be received and paid by L. Sawyer, who will continue the business.

ENGLISH NEWS.

Burnley and District Chemists' Association.—An open meeting to all chemists, etc., will be held at the Bull Hotel, Burnley, on Tuesday, April 11, at 7 p.m., to discuss the Pharmacy Bill as introduced by the Lord Chancellor, and a resolution thereon.

Deficient Camphorated Oil.—Frederick J. Yeatman, pharmaceutical chemist, of 122, Kentish Town Road, and William H. Aukland, chemist and druggist, of 46, Camden Road, were summoned at Marylebone before Mr. Curtis-Bennett, by the St. Pancras Vestry, for selling to the prejudice of the purchaser camphorated oil, from which, in Mr. Yeatman's case, 40 per cent. of camphor had been abstracted, and in Mr. Aukland's case where the article had been adulterated by the admixture of 76 per cent. of mineral oil.—The defence in the first case was that the mixture had been recently made, when the weather was cold, and the person who served it, being unaware of that fact, sold it without shaking up the contents of the bottle.—Mr. Aukland said his assistant exceeded his duty. Being asked for 8 ozs. of the mixture, and not having sufficient in stock he made up the deficiency with a mixture made of mineral oil—used by veterinary surgeons—instead of olive oil.—Dr. Stevenson said he failed to find any trace of olive oil in Mr. Aukland's sample.—Mr. Curtis-Bennett fined Mr. Yeatman 20s., with 23s. costs, and Mr. Aukland 40s., with 40s. costs.

Chemical Society.—At the anniversary meeting of this Society, held last week, Professor Dewar, the President, occupied the chair, and satisfactory accounts were given by the President and Treasurer of the condition of the Society. Votes of thanks having been passed to the various officers for the services rendered during the past year, the ballot for the election of new officers was then taken and resulted in the choice of Professor T. E. Thorpe to succeed Professor Dewar as President, of Professor W. A. Tilden in place of Professor Thorpe as Treasurer, and of Dr. A. Scott to succeed Dr. W. P. Wynne as one of the Secretaries, In the course of his presidential address, as reported in the *Times*, Professor Dewar discussed the means that might be used for measuring the range of temperature between the critical point of hydrogen and the zero of absolute temperature. The electrical resistance thermometer was of great delicacy, but it depended on a knowledge of the law connecting resistance and temperature and involved the necessity of extrapolation. At such temperature, however, conditions occurred which could not be anticipated, and hence no confidence could be put in the results given by the curve. Platinum, for instance, which was frequently used for the construction of such thermometers, approached its zero of resistance when immersed in liquid hydrogen, and theoretically only required to be cooled five or six degrees further to become a perfect conductor of electricity. Such a reduction should be effected by making the hydrogen boil under exhaustion, but in fact the lowering of temperature indicated by the platinum thermometer in such circumstances did not exceed one degree. Hence the platinum must have come to a limit. Two pure platinum thermometers which Professor Dewar had tried both behaved in this way. Next he experimented with a resistance composed of an alloy of rhodium and platinum, which gave a different temperature altogether. According to it the boiling point of hydrogen was minus 246° as against minus 238° shown by the pure platinum arrangement, and it, too, failed to indicate the expected lowering under exhaustion. A thermo-junction of iron and German silver was next tried without satisfactory results, and another junction of lead and iridium-platinum proved equally ineffective. Thus he was brought to an air thermometer and the use of hydrogen itself under diminished pressure to determine its own boiling point. In the instrument he had constructed the gas had a tension of 273 Mm. at the temperature of melting ice, so that a difference of one millimetre corresponded to one degree of temperature. The boiling point of hydrogen was by this thermometer given as about minus 252°, but various corrections had to be made, and in particular the possibility of the hydrogen being contaminated with a slight impurity of air or oxygen allowed for, so that it was uncertain what exactly was the true boiling point. Assuming it to be minus 252°, or 21° on the absolute scale, Professor Dewar went on to illustrate the difficulties of nearer approach to the absolute zero itself. By exhaustion the experimenter could not practically get more than 6° lower, and at that point he was barred and blocked with no means of bridging over the remaining 15°. Even supposing that a new substance was discovered as volatile in comparison with hydrogen as hydrogen was in comparison with nitrogen, that under exhaustion would only give a temperature 3½ degrees above the zero, and it would require a second hypothetical substance as volatile compared with the first as the first was compared with hydrogen to enable the experimenter to come near the extreme of temperature he was aiming at.

What is Oil of Juniper?—Parke's Drug Stores (Limited), 151, Kensington High Street, was summoned at Clerkenwell by the Islington Vestry for selling, on February 14, oil of juniper which was not of the quality, nature, and substance demanded.—Mr. Bramall prosecuted, and Mr. Hicks defended.—Mr. Bramall said the purchase was made at one of the shops owned by the defendant company in Islington. The summons against them was for selling as juniper oil a substance not made from the juniper berry, but a concoction which contained a large percentage of turpentine and juice of juniper wood. The price of oil of juniper was 9s. 6d. per lb., whereas that retailed by the defendants was sold (wholesale) at 1s. 10d. per lb. The defendants charged for this particular oil at the rate of 7s. 6d. per lb.—Inspector Cowling proved the purchase of the drug from the defendant's shop.—Dr. Harris, medical officer to the Islington Vestry, said oil of juniper was used as a stimulant and antispasmodic, and as a diuretic in dropsy arising from cardiac, liver, and kidney disease. Oil of juniper wood would be inoperative if given in these cases.—Dr. Teed, public analyst, said the article purchased from the defendant contained 30 per cent. of juniper oil and 70 per cent. of turpentine.—Cross-examined: Oil of juniper wood was prepared by distilling turpentine over juniper wood. It was probable that the wood yielded the same oil as the berry. The sample answered the Pharmacopœia test for specific gravity. There were articles sold in commerce which were mentioned in the Pharmacopœia, but which would not comply with the test laid down in that book in relation to them.—Mr. Hicks, for the defence, contended that the oil sold by the defendant was an article of commerce, and that it was mentioned in the price-lists of wholesale druggists as oil of juniper. Oil of juniper berry was an article used only by medical men in compounding medicine.—Mr. Horace Smith adjourned the case in order that evidence might be called on the contention that juniper oil was an article of commerce, as distinguished from oil of juniper berry, a drug.

Oxalic Acid Poisoning Case.—At the Putney Parish Offices on Wednesday, March 29, Mr. A. Braxton Hicks resumed his adjourned inquest on the body of Miss Ethel Richardson, aged 30, a typewriter, who fell dead at the flagstaff on Wimbledon Common on March 1. It was thought that death was due to natural causes, but owing to a paper labelled "Oxalic acid—poison" having been found on the first morning of the inquest at a spot some little distance away from where deceased fell, the Coroner adjourned his inquiry so that the contents of the viscera might be analysed. The label of the poison packet bore the words "Parke's Drug Stores, High Street, Putney."—Thomas Morris, manager of Parke's Drug Stores, said that he could not remember serving any lady answering to the description of the deceased with oxalic acid. There were two unqualified assistants in the shop, but neither of those could have sold the poison in his absence. As oxalic acid was not a "scheduled poison" it was not compulsory to obtain the name of the purchaser.—Dr. Womack said the stomach alone contained 126 grs. of oxalic acid, and all articles of wearing apparel bore traces of the poison. Deceased had died from shock consequent on oxalic acid poisoning.—The Coroner said that it would greatly facilitate the business of the police if chemists selling such poisons as oxalic acid and carbolic acid were to demand the names and addresses of would-be purchasers.—A verdict of "Suicide while of unsound mind" was returned.

Marriage.

Ross—Bruce.—At Mather's Hotel, Dundee, on March 29, by the Rev. Stewart Galloway (Logie Church), assisted by the Rev. D. R. Robertson (Clepington), Alexander H. Ross, M.P.S., chemist, to Jane Anderson, daughter of Thomas Bruce, Esq., 7, Airlie Terrace.

SCOTTISH NEWS.

The Students of the Glasgow and West of Scotland School of Pharmacy, on Monday last, being Spring Holiday, along with their Principal, Mr. Barrie, went on the first botanical ramble for the season to Possit Marsh and Cadder Woods. There was a good turn-out of students, and the following plants were found in flower, viz. :—*Ranunculus ficaria, Salix viminalis, Tussilago farfara, Bellis perennis, Daphne mezereum, Cardamine pratense;* while the remaining well repaid the attention given them—*Cytisus scoparius, Digitalis purpurea, Oxalis acetosella, Vaccinium vitis idea, Boletus* sp., *Blechnum boreale, Marchantia* sp., etc.

Mr. Richard Birrell Carruthers, of Huntingdon Lodge, Dumfries, one of the best known pharmacists in the South of Scotland, died suddenly of pneumonia, at Southport, on Monday, April 3, 1899, aged 72 years. Mr. Carruthers was born at Blackburn, Lancashire, and served his apprenticeship with Mr. Halbert, chemist, Annan. In 1848 he purchased the business of Mr. Irving, 90, High Street, Dumfries, and in 1859 assumed as partner Mr. William Allan. The firm of Carruthers and Allan became widely known during the thirty-five years of the co-partnery. In 1893 the partnership was dissolved, and Mr. Carruthers retired, and Mr. Allan, opening a new shop at 172, High Street, the old business was transferred to Mr. Robert Curruthers, a son of the deceased. Mr. Carruthers was also connected with the firm of Carruthers, Son & Co., sheep dip and dye manufacturers, Glasgow, and had manure works at Gretna. The firm long held the sole agency for McDougall's sheep dip. Mr. Carruthers was one of the most highly respected citizens of Dumfries, and took an active part in ecclesiastical, political, municipal, and educational affairs. He was an elder in St. Michael's Church, Dumfries, and a Justice of the Peace for the county. For several years he was a member of the Town Council, and would have been Provost had he not declined the honour. He was also a member of the first School Board. Mr. Carruthers was one of the best known figures in the coursing world, was at one time one of the most successful coursers in the kingdom, and was nominator three times of the winners of the Waterloo Cup. He did not make bets, cared nothing about horse-racing, but had a passion for coursing, and his name was known far and wide as Honorary Secretary of the National Coursing Club and the Border Union Coursing Club. He commended himself to his fellow-townsmen by his probity in all business relations, by his pre-eminent dignity of deportment, by his suavity and graciousness, and by his conciliatory disposition. He was a lover of peace and a peace-maker. He is survived by a widow, four daughters, and six sons.

IRISH NEWS.

The Distribution of Poisons.—At a meeting last week of the Dublin Public Health Committee it was resolved to adopt the suggestion of Sir Charles Cameron, public analyst, to forward to the Premier, in view of further legislation, the following recommendations of Mr. Robert J. Downes, President of the Pharmaceutical Society of Ireland, and contained in a paper relative to the distribution of poisons read by that gentleman before the Public Health Congress in August last :—

> That "wholesale dealing" should be defined as (1) a sale to the person qualified to sell by retail; (2) a sale to the manufacturer for use in the process of his business; and (3) a sale to public bodies who usually buy by contract. That the principle of qualification of the proprietor should not be departed from. That "poisonous substances" recognised to be poison should be added to the Poison Schedule. That potent and seductive poisons in prescriptions should not be repeated, except by the special direction of the prescriber. That poisons may not be kept or sold in the shop or room in which groceries and excisable liquors are sold or kept, or in bottles in common use for the containing of beverages, and that a legal as well as a moral obligation should rest on the public as to the storage and distribution of poisons.

The Drumcondra (Dublin) Urban Council has passed a resolution disapproving of company trading in pharmacy, and approving of the action taken in the matter by the Pharmaceutical Society of Ireland.

Cookstown, the erst-while ether-drinking hamlet, considers half-a-guinea a sufficient remuneration for a water analysis. Dr. Hodges, as water is not included in the food and drugs, begged to be excused from charging less (which he had hitherto kindly done) than the regular fee, that is, two guineas. But the guardians are not satisfied and of course are instituting inquiries.

More Interesting is the Action of the Coleraine Council in endorsing the proposal of the P.S.I., which urges the Government to insert in the Companies Act a clause preventing unqualified persons compounding prescriptions as a trading company. It is very difficult indeed to convince people that there is any special protection in a qualification. Yet it was shown in Belfast some years ago in such a simple transaction as the purchase of a seidlitz powder which was made up by a druggist's apprentice, what should point a lesson through the thickest cranium. The woman who brought it back said "it wouldn't fizz," and when the master inquired into the matter he found to his horror that the contents of the blue paper had been strychnine! Well, indeed, that it didn't fizz. The same thing is exhibited in the case of a young gentleman who on one occasion searched the shelves patiently for "ejusdem," and of another who made up a prescription for quinine thrice its strength, which was only revealed when the father, a German Jew, came bursting into the shop the next morning, "Mein Gott," he shrieked, "What you put in this bottle; mein dotter's nearly vild?" Of course, as such apprentices are very sparsely sprinkled throughout the trade, their mistakes and blunders are in ninty-nine cases out of a hundred spotted by their shrewder associates; but if, as some legislators desire, the profession is to be "thrown open" on the Wopsle principle, then every patient may well cry *sauve qui peut.*

A Landmark in the Medical History of Belfast is about to be removed. "Beck's Medical Hall," situate in North Street, the hub of the old town, is offered as a going concern with "a profitable medical practice and general pharmaceutical trade." It was in the hands of the late Dr. F. Beck for twenty-seven years. His father, who had his premises on the other side of the street, was one of the early race of Belfast practitioners, who compounded, prescribed, diagnosed, and dispensed over their own counters.

PERSONALITIES.

Mr. J. E. W. McFall, F.R.S., pharmaceutical chemist, of West Derby, Liverpool, having passed the final examination of the Medical Faculty of the Victoria University, has had conferred the degrees of M.B. and Ch.B.

Mr. G. Stephen Bell, pharmaceutical chemist, Albert Terrace, Weston-super-Mare, was the third candidate on the poll in the election in West Ward for the Weston-super-Mare Urban District Council, polling 248 votes, whilst the candidate heading the poll secured 426 votes and the second 266 votes.

Mr. C. H. Clarke, chemist, is one of the new candidates nominated for the Chepstow School Board election. Eleven candidates were nominated for five seats.

Mr. J. F. Saunders, chemist and druggist, of Ilminster, one of the twenty-one candidates going to the poll for the election of twelve members of the first Ilminster Urban District Council, was unsuccessful, securing only ninteenth place with sixty-one votes, whilst the candidate heading the poll obtained 311 votes.

Dr. Frank Dendle (son of Mr. John Dendle, of Barnstaple), formerly apprentice to Mr. E. Pratt, pharmaceutical chemist, High Cross, Barnstaple, has been the recipient of very handsome presents from the people of Lochgelly, where he has resided for nine years, the occasion being his leaving for Dunfermline. At a town meeting attended by over eight hundred persons, Dr. Dendle was presented with a plate chest, a house watch, and a necklace for his *fiancée*. The plate cabinet bore the following inscription :—"Presented to Frank Dendle, M.B, C.M., by patients and friends in Westfield, Capledral, Lochore, Benarty, Glencraig, and Lochgelly, as a token of their appreciation and esteem on his leaving for Dunfermline, March 14, 1899."

Councillor W. Carr Hebden, chemist and druggist, 64, Northgate, Halifax (Yorks), has recently been appointed a Justice of the Peace for the borough. Councillor Hebden has taken an active interest in public affairs for many years, and being an effective speaker is exceedingly popular with the working classes of the town.

EXTRACTS FROM CONSULAR REPORTS.

Abortives, according to the report of Mr. R. J. Farrer, of the Straits Civil Service, are freely used in the Cocos Islands. They are obtained from one or two old native women who get their drugs from Java, and keep the composition of their preparations secret. Mr. Farrer expresses a hope that the knowledge of these drugs will be lost when the old wives die, since their use is said to be decidedly harmful, and may probably be one of the causes of the high death rate among the infants of the islands. The people prefer native to European medicines, and dose themselves with concoctions which are often entirely unsuited to their complaints. Mr. Farrer suggests that this may be the reason why the women lose their good looks so early, as at twenty-five many of them look quite ten years older.

Steam for Extinguishing Cotton Fires in the holds of vessels laden with bales has been successfully employed by the authorities at the port of Galveston (Texas). It is claimed that the extent of the damage is considerably reduced in cases of fire when steam is used instead of water, inasmuch as the damage is confined to the bales actually burnt or scorched. Two cases are quoted in a recent report to illustrate this: In the case of the ss. "Birchfield," where steam was used, the total number of bales damaged was 179, of which 53 were damaged by water; while in the case of the ss. "Burton," where water was used, 1026 bales were damaged, of which 726 were by water.

The Para India-Rubber Industry is the subject of an interesting article in a recent report by Consul W. A. Churchill. He states that rubber was first introduced from South America into Europe in 1736, by the French astronomer, La Condamine, who reported that the Peruvian Indians used it for various purposes. South American Indians inhabiting the Amazonian forest were the first manufacturers of india-rubber, and the world is indebted to them for the pear-shaped rubber syringe, goloshes, and rubber-waterproofing. In 1770, an English artist discovered that the new gum was admirably adapted for rubbing out pencil marks. He wrote a paper on the subject, and informed his contemporaries that a cubic inch of this substance, costing only 3s., would last for years. It was used for no other purpose in England than erasing lead-pencil marks for about half a century after this discovery, hence the name "rubber." It was first manufactured into waterproof clothing in Franco towards the end of the eighteenth century. Later on the firm of MacIntosh, of Manchester, took up the manufacture of waterproofs on a large scale, hence the term "mackintosh" applied to the garments.

The Chemical Industry in the Warsaw consular district is reported to be by no means developed as yet, there being a good opening in it for both foreign and native capital and enterprise. The works already existing, according to the report of Consul-General Murray, cannot meet the demand, a great many materials of importance—such as sulphuric, nitric, and hydrochloric acids—having to be imported from Germany. While admitting that the kingdom of Poland is not very advantageously situated for the development of chemical industry in general—there being a complete absence of raw materials, which must be imported—it is pointed out that, on the other hand, labour is cheap, coal abundant, and the market good and growing continually, as new districts of the empire are being thrown open year after year, so that the dividends paid by the different works are very good. Three new branches of the chemical industry have been started in Poland within the last few years—namely, artificial manures, organic dyes, and electro-chemistry.

Natural Sulphur is reported to be found in six places in the Empire of Russia, namely, the governments of Astrachan, Kazan, and Samara, in Daghestan, and Transcaspia, and in the government of Kielce. In the first three places the beds of sulphur have neither been examined geologically, nor from a commercial point of view, and remain untouched. In Daghestan, there are several rich and large beds of sulphur which are not worked for want of proper appliances, with the exception of that at Khioutska from which in 1896, 450 tons were extracted, 120 men being employed. In Transcaspia, there are very rich beds which have been properly surveyed and reported upon scientifically, but not as to their commercial value.

The Sulphur Beds at Czarkowsky, in the government of Kielce, are unique in Russia for their wealth and extent, and they also occupy the most favourable position, both geologically and from a commercial point of view. They lie not far from the Austrian frontier, on the bank of the River Nieder, about 5 versts from its junction with the Vistula. These beds were known in the thirteenth century, the sulphur lying in beds of a thickness of from 20 to 35 feet, containing 20 to 25 per cent. of pure sulphur, increasing to 50 per cent. as a greater depth is obtained. Several attempts have been made to work the beds without success, but it being evident that the attempts to derive profit from them failed only from the want of proper means, some Moscow merchants have formed a company for the exploitation of these beds, and have started works for the extraction of sulphur by a process invented by a Mr. Patcanoff. This method briefly is as follows: The ore is placed in a hermetically closed apparatus filled with water, which is heated by the aid of steam. The sulphur, when dissolved, falls through a kind of filter or sieve into a receptacle, where it solidifies into little balls or prisms; the useless part of the ore remains in the upper part of the apparatus, and is considered waste. The extraction of sulphur by this means costs less than half as much as by the means formerly employed, the sulphur obtained being chemically almost pure.

Calendar for the Week.

Sunday, April 9. Low Sunday. Sun rises 5.21; sets 6.44.

Monday, April 10. Sun rises 5.19; sets 6.46.

Dewsbury and District Chemists' Association, Town Hall, at 8 30 p.m.—Discussion on the Lord Chancellor's Pharmacy Bill.

Galen Lodge, Freemasons' Hall, Great Queen Street, London, W.C.—Installation Meeting.

Midland Pharmaceutical Association, Mason University College, at 8.30 p.m.—Lecture on "The Sterilisation of Milk," by Dr. C. Leedham-Green.

Society of Chemical Industry, Burlington House, Piccadilly, W., at 8 p.m.—Paper on "The Industrial Technical Treatment of Sherry and of British Colonial Wines," by Dr. J. T. W. Thudichum.

Tuesday, April 11. ● 6.21 m. Sun rises, 5.16; sets 6.47.

Burnley and District Chemists' Association, Bull Hotel, at 7 p.m.—Discussion on the Pharmacy Bill, 1899.

Royal Photographic Society, 12, Hanover Square, London, W., at 8 p.m.—"The Correct Exposures to be Given to Photographs of the Corona," by E. W. Maunder.

Wednesday, April 12. Sun rises 5.14; sets 6.49.

British Pharmaceutical Conference, 17, Bloomsbury Square, W.C., at 4.30 p.m.—Meeting of the Executive Committee.

Edinburgh Chemists', Assistants', and Apprentices' Association, 36, York Place, at 9.15 p.m.—Annual Business Meeting.

Manchester Pharmaceutical Association, Victoria Hotel.—Annual meeting, followed by a discussion on current pharmaceutical topics.

Newcastle-on-Tyne and District Chemists' Association.—Paper by the President, Mr. F. E. Schofield.

Sheffield Pharmaceutical and Chemical Society, New Surrey Street, at 8.30 p.m.—"The Chemical and Microscopical Aspects of Blood," by C. O. Morrison.

Thursday, April 13. Sun rises 5.12; sets 6.50.

Chemists' Assistants' Association, 73, Newman Street, London, W., at 9 p.m.—"Methods of Alkaloidal Assay in their Pharmaceutical Application" by H. A. D. Jowett.

Royal Institution, Albemarle Street, London, W., at 3 p.m.—Professor Dewar on "The Atmosphere."

Glasgow and West of Scotland Pharmaceutical Association, 94, West Regent Street, at 9 p.m.—Annual Business Meeting.

Friday, April 14. Sun rises 5.10; sets 6.52.

Royal Institution, Albemarle Street, London, W., at 9 p.m.—Professor A. W. Rücker on "Earth Currents and Electric Traction."

Saturday, April 15. Sun rises 5.7; sets 6.54.

MARKET REPORT

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

April 6, 1899.

The drug and chemical markets have so far hardly fully re-opened since the holidays. A firm tone nevertheless appears to prevail, and general hopefulness is apparent that we are entering upon a period of prosperous business activity. There are no changes of any special importance to report with the exception of a set back in Quinine. Quicksilver is also weak in second hand, due, it is stated, not to any lack of firmness in the importers' price, but to the fact that large speculative purchases were made for May delivery, which will shortly be falling due, many of the buyers preferring to clear out if possible now with a slight loss rather than face the attendant uncertainty of holding such a capricious article as Mercury. Cocaine is expected to advance. Opium and Morphia very quiet. Codeia firm. Cod-liver Oil in a somewhat uncertain position. Castor Oil slightly easier. Iodine and Iodides, Bromine and Bromides unchanged. The following are the actual prices of some articles of principal interest:—

Acetanilide—Is quiet at 11d. to 1s. 2d. per lb., according to quantity.

Acid Boracic—Is steady at 26s. and 28s. per cwt. for *crystals* and *powder* respectively.

Acid Carbolic—Is steady at 6⅝d. to 6¾d. per lb., according to quantity and make for 35-36° *ice crystal* in 2½ cwt. drums and over-casks, 7d. to 7½d. per lb. for 39-40° *ice crystal*, and 8d. to 8½d. per lb. for the 39-40° detached crystals, which latter is now the B.P. quality. *Crude* 60° F., 2s. 1d. per gallon; 75° F., 2s. 7d. per gallon. *Liquid* 95-98 per cent., of pale straw colour, 1s. 3d. per gallon in 40-gallon casks.

Acid Citric—Is very quiet at 1s. 2¾d. to 1s. 3½d. per lb. for *crystals* for prompt delivery.

Acid Oxalic—Is quoted 3d. to 3½d. per lb. nett., on the spot, delivered free London.

Acid Tartaric.—*English*: spot, 1s. 1d., delivered; *foreign*: 1s. 0½d. per lb., *c.i.f.*

Ammonia Compounds.—*Bromide*, 2s. 2d. per lb. *Carbonate*, 3d. to 4d. per lb., according to packing, quantity, and make. *Iodide*, 14s. 3d. per lb. *Muriate*, chemically pure small crystals, 30s. to 32s. 6d. per cwt., while the ordinary free from metals quality is quoted 25s. to 27s. 6d. per cwt. *Sal Ammoniac*, sublimed firsts, 35s.; seconds, 33s. per cwt.; crushed for batteries, 35s.; and 37s. per cwt. for seconds and firsts respectively. *Sulphate* has eased off slightly, and is now quoted: *Grey* 24 per cent. prompt London £11 per ton; Hull, prompt, £10 18s. 9d.; Leith, prompt, £11; Beckton, prompt, nominally, £10 15s.; Beckton terms, £10 15s. per ton. *Sulphocyanide*, 1s 2d. per lb.

Antipyrine.—Both *Dr. Knorr's* article and the cheaper *Phenazone* are steady at unchanged prices.

Antimony.—*Regulus* is quoted £38 to £39 per ton. *Crude* (*Black Sulphide*): Japan, £24 per ton landed, £23 per ton, *c i.f.*, to arrive.

Atropine—Makers are firm at 15s. 6d. per oz. for the *Sulphate*, and 17s. 10d. per oz. for the pure alkaloid.

Bismuth.—The commercial quality of the metal remains at 5s. per lb., price of the salts being also unchanged at 5s. 1d. per lb. for the *Subnitrate*, and 5s. 8d. per lb. for the *Carbonate*.

Bleaching Powder (Chloride of Lime).—English is quoted £6 per ton.

Borax—Is unchanged at 16s. 6d. per cwt. for *crystals* and 17s. 6d. per cwt. for *powder*.

Bromine and Bromides.—Prices are unchanged at 1s. 10d. per lb. for *Potass. Bromid.*, 2s. 1½d. per lb. for *Sodii Bromid.*, 2s. 2d. per lb. for *Ammon. Bromid.*, and 2s. 3d. per lb. for *Bromine*.

Camphor.—Market is unchanged both for *crude* and for *refined*; it is considered however quite possible that we may see a further upward movement next week, it being expected that there will then be some considerable buying, the higher price having up to the present rather caused buyers to hold off. Where they had not been so fortunate as to secure a stock before the advance it will not, however, it is thought, be possible for them to keep out of the market much longer, the season of chief demand being now so close, and it is consequently believed that such increased buying may lead to the further advance in price above hinted at. This will also no doubt in turn reflect upon the price of *crude*, the market for which is already in a somewhat tight condition.

Castor Oil—Dull, *Belgian* first pressing spot £25 per ton, July to December £24 10s., second pressing spot £24 per ton, ex-wharf. *Hull* manufactured £23 15s. to £25 5s. per ton, in barrels, 2 1/16d. to 2 1/16d. per lb. in cases for prompt delivery, ex-wharf London. London pressed 25s. per cwt. in barrels. *French* 25s. 6d. to 26s. per cwt.

Cinchona Bark.—The movements in London during March were: Landed 1568 packages, delivered 2751 packages, stock, March 31, 18,878 packages. The exports of *Java* bark for the month of March were 976,000 Amsterdam lb., against 713,000 Amsterdam lb. last year, making a total for the three months of 2,065,000 Amsterdam lb., against 2,369,000 Amsterdam lb. in 1898.

Cloves.—The market for *Zanzibar* is dull, and easier prices rule. Business done includes March-May delivery at 3 5/16d. to 3 7/16d., April-June at 3 3/32d. to 3¼d., June-August and July-September, at 3¼d. No spice auctions have been held this week.

Coal Tar Distillation Products.—*Toluol*: Commercial, 1s. per gallon; pure, 1s. 3d. per lb. *Benzole*: 50 per cent., 7¼d. to 8d.; 90 per cent., 7½d. per gallon. *Creosote*: 3d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*: 95 per cent., at 160° C., 1s. 6d. per gallon; 90 per cent., at 160° C., 1s. 3d.; 90 per cent., at 190° C., 1s. 3d. per gallon. *Anthracene*: A, 3¾d. per unit; B, 2¾d. *Pitch*: 26s. per ton, *f.o.b.* *Tar:* Refined, 12s. 6d. per barrel; 2½d. per lb.; crude, 12s. per barrel; 2d. per lb.

Cocaine.—Makers are firm at 11s. to 11s. 9d. per oz., according to quantity and brand, for the *Hydrochlorate*, while there are sellers from second hand at a little below these figures. It is confidently predicted that we shall see higher prices for this article before very long.

Codeia—Is firm at 12s. 3d. to 12s. 6d. per oz., according to quantity and packing.

Cod-Liver Oil—Market is quiet at nominally unchanged price, the future of the article now apparently depends upon the results of next few weeks' fishing. So far, although the number of fish taken has been far below the average of past few years, the actual yield of oil has, owing to the good condition of the fish, been equal, and, in fact, in excess of the average.

Cream of Tartar.—First white *crystals* are quoted 76s. per cwt. on the spot; *powder*, 78s. to 82s. per cwt., according to strength.

Glycerin—Is unchanged, both for the *crude* and the *refined* article.

Iodine and Iodides—Are still quoted as follows: *Potass. Iodid.*, 10s. 6d. per lb. *Sodii Iodid.*, 11s. 10d. per lb. *Ammon. Iodid.*, 14s. 3d. *Iodine resublimed*, 12s. per lb. *Iodoform cryst.*, *powder*, or *precip.*, 13s. 10d. per lb. *Commercial Iodine* is also unchanged at 7½d. per oz.

Mercurials—Are unchanged at 2s. 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive Sublimate*.

Morphia—Is very quiet at 4s. 6d. per oz. for the *Hydrochlorate Powder*, and 2d. per oz. more for *Crystals*.

Nitrate of Soda—Is higher at £8 7s. 6d. per ton for the commercial quality, and £8 15s. per ton for the refined.

Oils (Fixed) and Spirits.—*Linseed* easier. Spot pipes, London, £17 15s., to £17 17s. 6d. per ton; barrels £18 2s. 6d. to £18 5s., May-August £17 17s. 6d., September-December £16 17s. 6d., Hull spot naked £17, May-August £16 5s., September-December £15 12s. 6d. per ton. *Rape* quiet. Ordinary brown spot £21 per ton, May-August and Sept.-Dec., £21 to £21 5s., Ravison naked spot £17, May-August £17 5s. *Cotton* steady. London crude spot £15 5s., May-August £15 7s. 6d. to £15 10s., refined spot £16 10s. to £17, according to make, Hull naked refined spot and May-Aug. £15 12s. 6d., crude spot and May-Aug. £14 12s. 6d. per ton. *Olive*: Mogador £30 to £31, Spanish £30 to £32 per ton. *Cocoanut*: Higher prices are now asked for arrival. Ceylon spot £25 15s. per ton landed; April-May shipments £24 10s. *c.i.f.*; Cochin spot £29 10s. landed; for arrival April-June and August-October shipment £26 per ton *c.i.f.* *Palm*: Lagos spot £24 10s. per ton. *Lubricating Oil*: pale American spot 5s. 6d. to 7s. per gallon, black 5s. to 5s. 6d.; Russian black 5s. to 5s. 6d., pale 5s. 6d. to 8s. per gallon. *Turpentine* easier at 31s. 6d. per cwt, on the spot, May 31s. 3d., June 29s. 9d., July 26s. 9d., September-December, 26s. 3d., Jan.-April, 1900, 26s. 10½d. per cwt. *Petroleum* quiet. Russian spot 4⅛d. to 4⅞d. per gallon, American spot 5½d. per gallon, water white 6¾d. per gallon. *Petroleum spirit*, American 8½d., deodorised 9d. to 9¼d. per gallon.

Opium.—Market is quiet, prices remaining nominally unchanged at 10s. to 13s. per lb. for *soft shipping*, 9s. 9d. to 11s. 9d. per lb. for *druggists* and manufacturing kinds, and 10s. to 11s. per lb. for Persian.

Phenacetin—Remains weak at 3s. 6d. to 4s. per lb., according to quantity, for both *crystals* and *powder*.

Potash Compounds.—*Bicarbonate*, 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10d. per lb. *Chlorate*, 3¾d. and 4d. for *crystals* and *powder* respectively for spot delivery. *Permanganate*, 52s. 6d. to 55s. per cwt. for *small crystals*, and 57s. 6d. to 60s. per cwt. for *large crystals* in 1-cwt. kegs. *Prussiate* (yellow): English, 8d. to 8½d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

Quicksilver.—Market is somewhat weak, £8 5s. per bottle being the importer's price, while the second-hand offers at the unusually large difference of 4s. per bottle less money.

Quinine.—There is a rather better feeling apparent in the market to-day, the shipments of bark, although of good extent, being less than estimated in some quarters, but only a small business has been done, not exceeding 25,000 ozs. *B & S* and/or *Brunswick*, on the spot at 1s. 7½d. to 1s. 7¾d., June delivery at 1s. 8½d. to 1s. 8¾d., and August at 1s. 8½d.

Rosin.—Strained is quoted 4s. 6d. per cwt. *ex* wharf, and 4s. 1d. and 4s. 2d. per cwt. *c.i.f.* respectively to arrive March-May and July-December shipment, per sailing vessel.

Soda Compounds.—*Crystals*, bags 52s. 6d., barrels 55s. per ton, ex-ship London; *Ash* £5 to £5 10s. per ton, according to strength. *Bicarbonate* £7 2s. 6d. to £8 per ton for the 97 per cent., and 18s. 6d. to 20s. per cwt. for the fully bicarbonated. *Bichromate* 2¾d. per lb. *Caustic*, white 70 per cent. £7 10s. per ton, 60 per cent. £6 10s. *Hyposulphite* (*Antichlor.*) 6s. 6d. to 8s. 6d. per cwt. according to make, quantity, and packing. *Iodide* 11s. 10d. per lb. *Nitrate*: Refined £8 15s. per ton on the spot.

Sulphate of Copper—Is quiet at £23 to £25 10s. per ton, according to quantity aud brand.

Sulphonal.—There is little to be had now below makers' price of 17s. per lb. for *crystals* or *powder* (with a reduction for 4 cwt. contracts). The reported appearance of a new make in the market has so far not been definitely confirmed.

Newcastle Chemical Report.

April 5, 1899.

Bleaching Powder on this market is scarce, and at quoted figures prices are firm. Soda Crystals are moving with more freedom; otherwise there is little or no change. Prices are: Bleaching Powder, £5 7s. 6d. to £5 12s. 6d. per ton, according to markets. Soda Crystals, basis, 45s. to 47s. 6d. Soda Ash, 50 per cent., £5. Alkali, 40 per cent., £4 5s. to £4 10s. Caustic Soda, 70 per cent., £7 5s. Sulphur, £4 15s. to £5.

Manchester Chemical Report.

April 5, 1899.

The holidays have, as usual, materially interfered with the usual course of business in this centre, but it is a little-known experience on the part of "old hands" that there should have been such a good inquiry experienced at the end and beginning of a month as has been the case in March and April. Although heavy chemicals generally are unchanged in price, there is a fairly good feeling, while in some instances miscellaneous chemicals have again experienced an advance. Brown Acetate of Lime is perhaps the exception, and it is rather dull at £4 12s. 6d. to £4 17s. 6d. per ton, Welsh and American, Manchester. Sulphate of Copper is again the turn higher for good brands here, £25 to £25 15s. Pitch is firm at late rates, *f.a.s.* Manchester Ship Canal. Green Copperas remains steady for export. English Glycerin is quoted £47 10s. per ton, naked, *f.o.b.*, any port in the United Kingdom, and 3s. extra for tins and cases, a concession in favour of buyers. Yellow Prussiate is still scarce at 7⅞d. to 8d. Aniline oil and salt rather lower. Arsenic has advanced to £17 per ton, rails, Garston. The following vessels are bound for this port from Batoum, laden with oil: "Baku Standard," s., 2375; "Rocklight," s., 2119; "Orange Prince," s., 1220; and "Henri Reith," s., 1488 tons.

Liverpool Market Report.

April 5, 1899.

The amount of business done has been considerably curtailed by the holidays, but prices continue steady, and with the exception of a drop of 9d. per cwt. in Spirits of Turpentine they are practically as last report. The miscellaneous sales include two lots on private terms of Carnauba Wax and Sierra Leone Ginger. Chemicals have been dull and are unchanged in price, except for a slight rise in Ammonia Sulphate.

Ammonia Salts.—*Carbonate* very firm, 3d. to 3¼d. per lb. *Sulphate* is dearer, £11 to £11 1s. 3d. per ton.

Beeswax.—*Sierra Leone* at £6 2s. 6d. per cwt.

Canaryseed—Is very dull and neglected by buyers, *Turkish* nominal quotation 26s. per 464 lbs.

Copper Sulphate—Is lower in price, £24 to £24 2s. 6d. per ton.

Fœnugrec.—Egyptian has sold at 7s. per cwt., ex-store, to the amount of 35 bags.

Ginger.—419 bags of Sierra Leone were disposed of on private terms, ex-quay.

Linseed.—300 tons of River Plate, April shipment, sold at 33s. 3d. per 416 lbs., 4 per cent. basis, and 300 tons Calcutta ditto went for 35s. 3d., on like terms. The present price is firmer, and sellers do not show much desire to meet buyers' wishes.

Oils (Fixed) and Spirits.—*Castor* is steady but there seems no desire for business at present quotations, viz., 2 15/16d. per lb. for Calcutta "good seconds," 2¾d. to 2⅞d. per lb. for French first pressure, 2⅝d. per lb. French second pressure, and 2¾d. per lb. for Madras. *Olive* is quiet and unchanged in either price or demand. *Linseed* is selling quietly at 19s. 3d. to 19s. 6d. per cwt. for Liverpool pressed oil. *Cottonseed* shows a steady tone and enjoys a fair sale at 17s. 6d. to 18s. per cwt. for Liverpool refined oil. *Spirits of Turpentine* have experienced a rapid decline since last week to something like their normal price, and are selling quietly at 3s. 4d. per cwt.

Potash Salts unchanged.

Soda Salts unchanged.

Obituary.

Weston.—On March 23, Joseph Weston, Chemist and Druggist, Fenton (Staffs). Aged 66.

Young.—On March 25, Horatio Thomas Barmby Young, Chemist and Druggist, late of Liverpool. Aged 49.

Hill.—On March 30, Arthur Stephen Hill, Pharmaceutical Chemist, Clapham Park, London. Aged 96. Mr. Hill had been a member of the Pharmaceutical Society since 1842.

Carruthers.—On April 3, Richard Birrell Carruthers, chemist and druggist, Dumfries. Aged 72.

Trade Notes.

Mr. William Martindale asks us to notify that his "Ozonic Inhaler" will in future only be supplied stamped, to retail at 1s. 9d., unless ordered without medicament, when the retail price will be 1s., as formerly. Chemists holding stock of the medicated inhalers must affix a 3d. stamp to each, or they will be liable to penalties under the Medicine Stamp Duty Acts. The "Nasal Ozonic Inhaler" will require a 6d. stamp, and will in future retail at 4s. 6d.

Messrs. Davy, Hill and Son, Yates and Hicks, 64, Park Street, Southwark, S.E., send a sample bottle of their "Esvach" water, which is put up in screw-stoppered bottles to be sold at 1s. The water is a most agreeable and safe aperient for general domestic use, and has been very favourably spoken of by medical men. Taken in doses (for an adult) of a wineglassful before breakfast, its use is said to be followed by no after-griping, and is found to be invaluable in cases of chronic indigestion, constipation, etc.

Receiving Order in Bankruptcy.

(From the London Gazette.)

Samuel N. R. Palk-Griffin, Surgeon, Padstow, Cornwall.

ITEMS OF INTEREST.

Subcutaneous Injections of Quinine.—Santesson in 1897 recommended a solution of quinine and antipyrine for subcutaneous injection. It was said that the mixture of quinine with antipyrine produced a definite body called "quinopyrine." Santesson submitted himself to injections with this quinopyrine, and found that the resulting pain was no greater than that produced by a physiological salt solution. Prof. Stoffella now states that he has made use of subcutaneous quinine injections for years, and that he has found the following process absolutely safe and quite free from pain:—Neutral quinine hydrochloride, 2 grammes, are mixed in a test tube with 10 grammes distilled water. The tube is carefully warmed to dissolve the quinine, solution being complete at 40° C. The quinine remains in solution at blood temperature; should it fall below 32° C. it is readily re-dissolved by dipping the tube into hot water. The dose injected was never less than 2 decigrammes of quinine hydrochloride; in some cases three injections were given per diem. The author asserts that all the operations were perfectly free from pain and evil after-effects. The needle of the Pravaz syringe was dipped into carbolic oil, and the necessary antiseptic conditions being complied with, no irritation or painful abscesses occurred. Special stress is laid on the fact that only the hydrochloride of quinine is suitable for hypodermic use; the sulphate, when so employed, occasions great pain, and leads to the formation of abscesses.—*Wiener Klin. Rundsch.*, **12**, 5.

The Treatment of Warts.—Louvel-Dulongpre advocates the following painless treatment, which also has the advantage of leaving no cicatrix: A concentrated solution of bichromate of potash in boiling water is prepared by gradually adding to the latter enough of the salt to make a saturated solution. On cooling a certain quantity of the salt will again crystallise out. The supernatant fluid is to be applied once a day by means of a brush. —*Pediatrics*, 5, 279, after *Med. Neuigkeiten.*

The Omission of a Comma.—A newspaper proprietor was recently sued for damages by a patent medicine man for an error which was made in printing a testimonial. By the omission of a comma after the word "death," a testimonial was made to read thus: "I now find myself cured, after being brought to the very gates of death by having taken only five bottles of your medicine."—*Quart. Med. Journ.*, 7, 100, after *Med. Age*, 1898.

Sulpho-Guaiacolates of the Alkaloids.—By combining sulpho-guaiacolic acid with cinchona alkaloids, Schaefer has obtained a new series of salts, which are stated to possess valuable properties, being antipyretic and antiseptic. They are free from nauseous taste, odourless, and free from acridity.—*Zeitsch. des allgem. öster. Apot. Vereine*, lii., 673.

PRACTICAL PHOTOGRAPHIC NOTES.

Should any one Have any Waste Celluloid films they can be easily utilised for making things waterproof. It is necessary to clean off the gelatin, and this can be readily done with a little warm water, and the celluloid should then be wiped thoroughly dry, and then dissolved in acetone to the consistency of syrup. If paper be immersed in this solution, and hung up to drain and dry, it will hardly show any difference to the eye, but be waterproof; as a varnish for paper labels it is excellent.

Pyrocatechine, about which a correspondent asked a question a week or two ago, is an excellent developer for bromide paper, working cleanly and giving good black tones. We have found the following satisfactory:—

Water	1000 C.c.
Sodium sulphite	25 Gm.
,, carbonate	50 Gm.
Pyrocatechine	10 Gm.

Dilute with an equal quantity of water. This developer may also be made up into a concentrated form by reducing the quantity of water to 200 C.c. It keeps very well, the above having been kept in the concentrated form unchanged for over six months.

The Following Developer, which has lately been strongly recommended for instantaneous or under-exposed plates, has in our hands yielded excellent results:—

Pyrogallol	0·2 Gm.
Amidol	0·1 Gm.
Sodium Carbonate	0·65 Gm.
,, Sulphite	2·0 Gm.
Water	150 C.c.

For use, mix 1 part with 2 parts water and add a few drops of 10 per cent. solution of potassium bromide.

With Both these Developers no clearing bath is required, but it is in all cases advisable to use the acid-fixing bath. To sell the fixing bath ready made up, means, of course, large bottles and bulky parcels, but a strong solution of acid sulphite of soda may be put up with directions for addition to a certain quantity of fixing solution. If it is desired to make this, dissolve 250 g. of sodium sulphite in 750 C.c. of warm water, and add 62·5 g. of citric acid dissolved in 250 C.c. of water. The above quantity is sufficient to add to 4 litres of a 1 in 4 solution of sodium hyposulphite.

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OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Quinine, few 25-ounce tins, 1s. 9d. per oz. (B. & S. brand). —Mr. Gregory, 10, Hammet Street, Taunton.

What offers for Squire's 'Companion,' latest edition, unsoiled. —Hall, 6, Long Causeway, Peterborough.

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Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Wanted, old copy of Cæsar Parsing, by Wills, for backward but deserving apprentice. State price to Knibb, 34, Plaistow Grove, Bromley, Kent.

Proprietors or Firms giving window shows send particulars, etc.—Hare, Chemist, Nottingham.

Publications Received.

INDIGENOUS VEGETABLE DRUGS. By J. H. MAIDEN. Parts I. and II. Published by the Department of Agriculture, Sydney, New South Wales. 1898. From the Author.

AN INTRODUCTION TO THE CARBON COMPOUNDS. By R. H. ADIE, M.A., B.Sc. Pp. viii. + 90. Price 2s. 6d. London: W. B. Clive, University Correspondence College Press. 1899. From the Publisher.

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FOR THE EAST.—Good opening for a thoroughly competent qualified MANAGER with first-class City experience. About 27 to 30. Must be energetic, active and capable. Commencing salary, say, £225. Free passage out and home and free quarters. 4 years' agt. By letter to DAKIN BROTHERS, 87a, Leadenhall St., E.C.

AN experienced DISPENSER (male or female) wanted for London (E.C.) practice. Private and clubs. State age, experience and salary required. Reply by letter to Dr. B., 36, St. George's Rd., Abbey Rd., N.W.

ENGAGEMENT wanted as PART-TIME. 23. Unqualified. In or near London preferred. DISPENSER, "Pharm. Journal" Office, 5, Serle St., W.C.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Allan, Aspden, Barrie, Bartlett, Bell, Breetton, Clower, Cocks, Fairbank, Ferrall, Gardiner, Gibson, Gill, Gordon, Griffith, Hill, Hirst, Jepson, Kerr, Knight, Lancaster, Lewis, McFall, Mason, O'Halloran, Reynolds, Richards, Smith, Thomas, Trembath, Umney, Walden, Watkins, Whyte, Wood.

POLITICAL GOSSIP.

The Pharmaceutical Calling has a reproach to remove as well as a host of omissions to repair, and the time has arrived to set about the work. For years it has been politically inert—a body without organisation, though having in the Pharmaceutical Society an exceptionally advantageous basis for organised action; and for years it has viewed with indifference the passing opportunities, more or less golden. The Lord Chancellor has changed all that. Indifference has given way to anger at the "snub direct" administered from the Woolsack; and now, the chief difficulty is to hold back the enraged chemists and druggists who formerly stood with after-dinner speakers as ideal models of pharmaceutical apathy. This is a good sign, and if the action of Lord Halsbury leads the Pharmaceutical Society to embark upon the much-needed work of political organisation and mobilisation of the material at its disposal, that august personage will prove a blessing indeed, though at the present moment his disguise is effective. There is plenty of vitality in pharmacy, but vitality misdirected is as bad as apathy. Just now, the more vigorous members of the craft are sending in to Bloomsbury suggestions for crushing the Lord Chancellor, for flooding the House of Lords with petitions, and for bringing pressure to bear upon individual lordlings. This vigour is all very well, but it is being wasted. The occupant of the Woolsack is king of his realm, and is not affected by the ordinary means of applying political pressure. Secondly, petitions to the House of Lords do not go beyond the outside door; and, thirdly, members of the Upper Chamber have no constituents and fear no general election. No; the correct thing to do, and the only wise thing to do, is to accept the leadership of the Council of the Society and exert the maximum of energy whenever the signal for action is given. The Council has decided for opposition and the fight is bound to come; is it wise to wear ourselves out beforehand?

The Promoters of the Midwives Registration Bill now before the House of Commons are taking a novel way of creating favourable public opinion. Advertisements are appearing—sometimes in the "agony" or "personal" column—in several of the London daily papers, couched in a style which is usually associated with proprietary medicinal remedies. This is how the thing runs: "Wanted, the British Public to know that this beneficent measure will have the effect of re-instating registered women exclusively, and with perfect safety in all cases, etc, etc." If the announcement could have wound up with a testimonial—unsolicited, of course—it would have been undistinguishable from the real article. The British public might with advantage give its attention to the Midwives Bill, and with much more advantage to the Pharmacy Bill, but that attention is hardly likely to be aroused by anything in the "personal" columns of a halfpenny paper.

Leith Burghs are preparing for the next Parliamentary election, and have selected Mr. E. T. Salvesen, an Edinburgh advocate, to contest the constituency in the Unionist interest. Mr. Salvesen, who is stated to have accepted the position of candidate in prospective, has the advantage, from a pharmaceutical point of view, of knowing something of pharmacy law, for he has appeared for the Society in the High Court of Justiciary in connection with one of the Council's attempts to carry out the law in Scotland. Perhaps the Scottish pharmacists in Mr. Salvesen's division will use this knowledge to their advantage between this and the general election. There are many prominent chemist-politicians within easy range of York Place, but our recollection is that they are not of the same party complexion as the candidate-elect for the Leigh Burghs.

Notices respecting the Government Food and Drugs Bill, now relegated to the Committee on Trade, have commenced to grace the Committee agenda. Sir C. Cameron is the first in the field, and renews his application for amendment of the Bill in the direction recommended by the Select Committee. He also proposes to make another attempt to persuade Mr. Long and Mr. Chaplin to adopt the "Board of Reference" idea, which is one of the features of Mr. Kearley's Bill. The Pharmaceutical Society has expressed itself in favour of the Board of Reference, but the Government has little faith in the efficacy of such a Board, and believes that opinions are very much divided among chemists themselves as to the desirability of creating such a hybrid aggregation of incompatibilities. Apart from the question of the Board, however, the Government Bill is pure tinkering with a vast subject. The sale of drugs is sufficiently complex to merit separate treatment, and that treatment should be administered by those who know something of the pharmaceutical calling, and are able to diagnose its grievances. The Pharmaceutical Council has sufficient on its hands just now, or it might be appropriate to urge that official pressure should be exercised upon the Board of Agriculture.

MEDICAL JOTTINGS.

The Report of the Special Committee of the London Chamber of Commerce on Secret Commissions contained a statement to the effect that the Committee concluded, from the evidence before it, that secret commissions in various forms are prevalent in almost all trades and professions. The *British Medical Journal*, in a special article on the subject, points out that the medical profession is included in the implied condemnation without any qualification, though the inclusion depends on two statements only. One of these, made by a pharmaceutical chemist, was that "secret commissions are given by chemists to medical men on their prescriptions supplied to patients, in some cases amounting to from 25 to 50 per cent. on the price charged by the dispensing chemist." Our contemporary states that, "with regard to pharmaceutical chemists, we cannot ascertain that any such practice exists, nor so far as we can learn is there any floating gossip that such commissions are given." The other statement upon which the London Chamber of Commerce appears to rely was made by an optician, jeweller, and silversmith, who said it was an open secret that hospital doctors received commissions from makers of surgical instruments. The conclusion our contemporary arrives at from inquiries made is that the practice of giving commissions may exist in connection with the supply of orthopædic instruments, and with regard to makers of optical instruments that they do try to establish special relations with ophthalmic surgeons, and that it is, of course, possible that in some instances their efforts are successful.

A Verdict of "Accidental Death" has been returned by the jury at the Coroner's inquest on the bodies of the two nurses who were killed by the explosion of ether at the Rochdale Workhouse last month. The inquest had been adjourned in the hope that Nurse Barker might be able to give evidence, but she, unfortunately, had in the meantimo succumbed to her injuries. Three bottles of ether were supplied to the workhouse the day before the accident by a druggist, who had procured them from a Manchester firm. A representative of this firm stated in his evidence that the explosion could not have taken place at the instant the bottle was broken. The vapour of ether was very heavy and would sink and then travel along the ground to the fireplace, and an explosion would then follow and the room would be filled with a sheet of flame. The medical officer to the workhouse stated that he was not aware before the accident that there were three bottles of ether in the surgery cupboard, and that when they were received they ought to have been taken to the store in another part of the building. Nurse Barker told the medical officer that she lifted the first bottle by the neck and showed it to the superintendent nurse, and in attempting to put it in the cupboard she knocked it against another bottle and it broke, and all fell down on the ledge below. Instantly there was a flame. The jury added a recommendation to their verdict to the effect that ether should be kept in stronger bottles and placed under the regulations of the Petroleum Act, and that a better system should be adopted for receiving "medical drugs." The *Lancet* hopes that more care will be taken in other workhouses where matters may also be a little lax.

The Subject of Cancer Exclusively Occupies the April number of the *Practitioner*, in which are printed the opinions of a symposium of experts on this malignant disease. The researches of Mr. Alfred Haviland and Dr. D'Arcy Power upon the geographical distribution of cancer and cancer houses all tend to show that it is an infective disease, that locality is a predominant factor, and that the disease mostly flourishes in low-lying river valleys with clay soils. Professor McFadyean records his experience as to the occurrence of cancer in the lower animals, and has collected sixty-three cases, though not many years ago such an idea would have been scouted. Dr. Newsholme discusses the question as to whether cancer is increasing in the United Kingdom. Mr. Plimmer contributes an article on the etiology and histology of cancer, illustrated with a number of coloured plates showing the

organism which he is inclined to look upon as the cause of the disease, and which he has been able to isolate, cultivate, and inoculate in animals with results which he regards as likely to lead to the solution of the problem of the origin of cancer. Mr. Watson Cheyne answers the question "What can surgery do to relieve sufferers from cancer in various parts of the body?" The last paper is by Dr. W. B. Coley on the treatment of inoperable cancer, with special reference to the use of mixed toxins of erysipelas and *bacillus prodigiosus*. A "medico-literary causerie" gives interesting information on the self-styled cancer curers.

The Death is Announced of Dr. William Squire, M.D.St.And., F.R.C.P.Lond., who was born in 1826, and was consulting physician to St. George's, Hanover Square, Dispensary. Dr. Squire came of an old Bedfordshire family, and after completing his medical education at University College went into practice in Orchard Street, where he remained till ten years ago, when he removed his consulting rooms to Harley Street, but went to reside at Ealing, where he died. It was during Squire's studentship days that Liston performed in 1846 his first capital operation under ether, and young Squire was associated with his uncle, Mr. Peter Squire, in conducting some of the experiments previous to Liston's demonstration in the operating theatre of University College Hospital, showing the value of Morton's discovery of the new anæsthetic. He contributed articles on croup and diphtheria to Russell Reynold's 'System of Medicine,' and on measles, scarlet fever, and whooping cough to Quain's 'Dictionary of Medicine.' He made a special study of the diseases of children, and published some well-known books on those subjects.

Subscriptions are Invited for a Fund for the assistance of the widow of the late Mr. H. Kingsley-Hunter, L.S.A., the defendant in the recent action of Clare *v.* Hunter. This was the case in which the General Medical Council succeeded in obtaining a decision of the Court of Queen's Bench that a Licentiate of the Society of Apothecaries was not entitled to style himself a physician. It would appear that the whole of the late Mr. Hunter's capital was expended in the purchase of the practice at Gamlingay, and that the effect of the prosecution was to ruin the practice. Unfortunately Mr. Hunter's health gave way, and he died before the litigation was finished, leaving his widow destitute.

At the next Annual Meeting of the British Medical Association, to be held next August at Portsmouth, the address in Medicine will be delivered by Sir Richard Douglas Powell, M.D., F.R.C.P., Physician Extraordinary to the Queen, and Physician to Middlesex Hospital. The address in Surgery will be delivered by Professor Alexander Ogston, M.D., Regius Professor of Surgery in Aberdeen University.

IRISH NEWS.

Irish Pharmacists' Assistants' Association.—At Dublin, on the 5th inst., the annual dinner of this Association was held in the Gresham Hotel, Upper Sackville Street. Mr. Henry Hunt, M.P.S.I., President, occupied the chair, and was supported by Mr. T. W. Robinson, J.P., M.P.S., Chairman of the Kingstown District Council, and Dr. J. C. McWalter, M.P.S., proprietor of Dr. Leonard's Medical Halls. The company included representatives of the various learned professions. After the removal of the cloth, letters and telegrams of apology for non-attendance were read from Mr. R. J. Downes, President of the Pharmaceutical Society, Dr. Foy, Dr. Auchinleck and others.

The Chairman, rising, proposed the toast of the "The Queen," which was honoured in the usual loyal manner. He next gave the sentiment of

The Pharmaceutical Society,

and coupled therewith the name of Mr. Robinson, ex-vice-President of the Society. He spoke in laudatory terms of the good work done by the parent body, and was glad to know that good things in the direction of pharmaceutical higher education were in view. The recognition of the Assistants' Association by the Society formed a pleasing feature of the Chairman's remarks. Regret was expressed at Mr. Downes' absence, and admiring reference was made to the excellent manner in which the Society's work was conducted by that gentleman. Mr. Robinson's many qualifications in private and public were belauded, and his connection with the Association as honorary vice-President was referred to with pride.

Mr. Robinson was sorry that Mr. Downes was not present. He was surprised and flattered at having been chosen to respond to the toast. Although not now on the Pharmaceutical Council, he was not less an admirer of the Society or less loyal than before. Every member of the Council did his best for the good of pharmacy, and none more so than the President, Mr. Downes, who was ever on the alert for the good of the Society and its licentiates. He spoke at some length on the new Bill introduced into Parliament by the Lord Chancellor, and deplored the effects of the measure. If allowed to pass unchallenged, it would be an everlasting reproach to pharmacists. A good pharmacist was sure to get on, however many companies started. The cry of "crushed out by the stores" was the excuse of the man who was bound to fail under any circumstances. The Society's examinations were criticised. They were being made very severe, but this was the result of the spread of education. The lot of the unqualified assistant was commiserated, his small pay and long hours of work were desperately out of proportion. He advised early recourse to the Licence examination, as the supply of qualified men was becoming much less than the demand, each year the test was being made stiffer than ever, so much so that the medical schools were flourishing at the expense of pharmacy. Mr. Robinson proposed the health of the Chairman, and

Mr. Hunt, in responding, gave some figures and facts as to to the *personnel* of the Association during his year of office. There had been a drop of 50 per cent. in the number of the Committee, but this was due to the ebb and flow of the assistants comprising the executive. Next winter they would re-open with a fresh Committee and in new rooms, which would be at the disposal of the members at all times.

Dr. McWalter, in reply to the toast of "The Medical Profession," spoke of the friendly relations existing between physicians and pharmacists in Ireland. This was due to the good sense of both parties, each of whom kept to his special line of work. The prescribing chemist and the compounding doctor were practically unknown in Dublin. There was talk in the air about the creation of new University degrees. The Pharmaceutical Society should press for the degree of B.Pharmacy and D.Pharmacy. Continental pharmacists regarded the craft of the United Kingdom as a lot of glorified shopkeepers, and it was time to take away that reproach. Referring to companies, he said at the present time a limited liability concern for the practise of medicine and surgery was in course of formation in Dublin. He urged a revision in the pay and prospects of assistants generally. If properly treated there would be no necessity for them to go over to the grocer-druggists, and so long as that avenue was closed they need not fear the Lord Chancellor's Bill.

Mr. Williams, who responded to the toast of "The Association," showed the good results of literary combination for employers and assistants alike. The Association served to knock off the rough edges of its members and helped to develop latent talent. He claimed the help and support for the Association of all having the good of pharmacy at heart.

"Our Visitors" and "The Trade Press" were next toasted, and Mr. D. Nagle, speaking to the latter toast, made kindly reference to the *Pharmaceutical Journal* and hoped next winter to see its welcome pages in Dublin more than ever. The *Pharmaceutical Journal* always gave them a good "look in." Without the trade press they would be in a *cul de sac*, not only in Ireland but all over the world. The toast was suitably acknowledged on behalf of the *Pharmaceutical Journal*.

During the evening a number of part songs and solos were contributed by Messrs. Turner, Williams, McWalter and others, and some excellent recitations were given by Mr. Farquhar. Mr. Pratt presided at the piano. The company separated at midnight to the toast of "Our Next Merry Meeting" and to the refrain of "Auld Lang Syne."

Pharmaceutical Society of Ireland.—Preliminary examination.—The following have passed:—D. Henderson, W. H. Macauley, W. J. White, J. R. J. Turner, I. R. Mackey, W. J. Maxwell. Nineteen candidates have been rejected.

Partnerships Dissolved.

(From the London Gazette.)

Joseph Walker, M.D., and A. E. Baker, Dental Surgeons, 22, Grosvenor Street, so far as regards Joseph Walker, M.D.

A. Angus Martin and W. W. Shrubshall, Medical Practitioners, North Shields. Debts will be received and paid by A. Angus Martin.

ENGLISH NEWS.

Councillor J. Crosby Robson, pharmaceutical chemist, has been appointed chairman of the new joint Council of the Redcar United Boards.

Mr. J. Turnbull, chemist and druggist, has opened a branch shop at Lytham Road, South Shore, Blackpool, the entire fittings for which have been supplied by Messrs. Ayrton and Saunders, Liverpool.

The Public Dispensers' Association held a meeting on Friday, April 7, at 46, Clarendon Square, to discuss the poison regulations. Owing to the unavoidable absence of Mr. Welford, the discussion was of an informal nature. Messrs. Jones (Poplar), Robertson (St. Mary's), Armitage (St. Mark's), Cairns (L.C.C. Asylum, Woodford), Donnan (Islington), Clark (Paddington), Mr. Miller (St. Pancras) taking part. Letters were read from Mr. G. L. Moore (St. Bart.), Mr. Robinson (Manchester), Mr. Esam (Leicester), and other country members. In nearly all cases it was shown that the members of the Association had taken all the steps suggested by the Pharmaceutical Society regulations, and in some cases the dispensers had gone much further in precautionary procedure. It was, however, recognised that the poison regulations did not personally affect the public dispenser, and it was thought that this should be altered. Mr. Jones showed an ingenious device to attach to shop rounds containing poison. The labels of the Patent Caution Label Company were shown. It was decided that the wholesale trade should be requested to put all poisons in distinguishable vessels. This was put in the form of a resolution, and proposed by Mr. Miller, seconded by Mr. Clark, of Paddington.

Mr. H. Wootton's connection with the Westminster College of Chemistry ceases by effluxion of time on June 30 next. He has taken premises formerly known as St. Anne's, 323, Clapham Road, S.W., which are now being fitted as a college and will be open for the reception of students in all branches of science on August 2. The chemical and pharmaceutical laboratories and lecture and class rooms are lighted by electricity. Over a quarter of an acre of ground adjacent to the college premises is being arranged as a botanic garden, and will be open to students of botany at all times during college hours.

Mistaking Carbolic Acid for Medicine.—An interesting dialogue ensued on Wednesday, April 5, at the Lambeth Coroner's Court, in the course of an inquest on the body of Louisa Powell, aged 55 years, the wife of a butcher's manager, of Brixton. The evidence was to the effect that deceased had suffered from heart affection for some time, and had been under medical treatment, and on the previous Thursday night, after retiring to bed, she returned to the kitchen for her bottle of medicine, which she had left on the dresser. Almost immediately after she got back to her bedroom she exclaimed, "I've taken carbolic acid instead of my medicine." The bottles of medicine and carbolic acid were produced, and were almost similar in every respect. The contents of each were also the same colour.—A Juror: "What label is on the bottle containing carbolic acid?"—The Coroner: "The mixture to be taken as before."—A Juror: "Then the poison is also in a medicine bottle?"—The Coroner: "Yes."—A Juror: "And there is no poison label on it?"—The Coroner: "No."—A Juror: "Where did it come from?"—Deceased's Son: "A charwoman whom we had working for us on Thursday purchased it at an oil-shop."—A Juror: "Where was it kept?"—Witness: "When deceased came down for her medicine the bottles stood side by side on the dresser."—Ann Peters, a charwoman, stated that she was served by a boy at the oil-shop. No label was put on the bottle. When witness left the house in the evening she left the bottle on the kitchen table. Deceased must have placed it on the dresser herself.—A Juror: "Is it usual for oilmen to sell these poisons without labelling the bottles?"—The Coroner: "They never put any labels on bottles. If you take a ginger beer or medicine bottle they will put anything in it you like."—A Juror: "Then there is something wrong somewhere?"—Dr. C. H. Dunstan stated that he was called to deceased, who was in a dazed state, and smelt of carbolic acid. While he was preparing an emetic she had a convulsion and suddenly expired.—A Juror: "Can nothing be done to prevent oilmen selling poisons in this loose manner?"—Witness: "I cannot say. I think chemists should have the entire sale of them."—The Jury returned a verdict of "Death from misadventure."

Food and Drugs Act Prosecutions.—Gregory's Powder and Sal Volatile: At Otley on Friday, April 7, Walter T. Moore, described as a chemist, of Yeadon [but whose name does not appear on the Register of Chemists and Druggists. Ed. *P.J.*], was summoned by Henry Gamble, Inspector under the Food and Drugs Act, for two offences against the provisions of that Act. Prosecutor said that on February 23 he purchased 2 oz. of Gregory's powder, which, on analysis, was found to contain magnesium carbonate instead of calcined magnesia. In reply to Mr. Neill (for the defendant), prosecutor said he knew nothing about the two kinds of magnesia, except that calcined magnesia cost 4d. and the magnesium carbonate 3d. Ultimately the case was dismissed.—The second charge was that Moore had sold to the Inspector 4 ozs. of sal volatile which, on analysis, was found not to be of the specific gravity required by the British Pharmacopœia. Mr. Neill submitted that as sal volatile was a spirit, every time the stopper was removed evaporation would take place, and in that way the specific gravity had been reduced in the sample sold to the inspector. Nothing had been added or taken away by the defendant.—The magistrate dismissed this summons also.—Seidlitz Powders: At the Spelthorne Petty Sessions last week Joseph Williamson, a small shop-keeper in West District Road, Ashford, was summoned for having sold a seidlitz powder which was not compounded according to the B.P., it being deficient in tartaric acid to the extent of 22·9 per cent., and in sodium potassium tartrate and sodium bicarbonate to the extent of 12·6 per cent.—Inspector Tyler said that this matter was considered by the Middlesex County Council to be a very serious one. In the interest of small traders like the defendant that authority was most anxious to put a stop to the evil, and after the evidence had been heard he would respectfully ask the Bench to take a certain course. In the Bill before the House of Commons there was no provision for recognising the British Pharmacopœia as a standard, and he suggested the advisability of making a representation to the County Council with a view to steps being taken for supplying the omission. In his evidence Inspector Tyler deposed to the purchase of the powder in question for a penny, and he said it was evidently in the same condition as when received from the wholesale dealers.—The Bench imposed the nominal fine of 2s. 6d., without costs, the Chairman remarking that the magistrates were unanimously of opinion that representations should be made to the County Council with a view to the recognition of the British Pharmacopœia in the Sale of Food and Drugs Bill now before Parliament.—Oil of Juniper: At Clerkenwell Police Court, on Wednesday, April 12, Parkes's Drug Stores (Limited), 151, Kensington High Street, answered an adjourned summons before Mr. Horace Smith for selling oil of juniper which was not of the nature, substance, and quality of the article demanded by the purchaser. The prosecution was instituted by the Islington Vestry, who held that, whereas oil of juniper berry was demanded by the purchaser, oil of juniper wood was retailed. The defence raised was that the article sold was an article of commerce, whereas oil of juniper berry was sold only in the event of it being specifically stated by the purchaser that it was needed for the purpose of compounding a drug. Evidence was given to the effect that the article sold did not conform to the requirements of the British Pharmacopœia. Several witnesses—wholesale chemists—said that the British Pharmacopœia was inaccurate in describing oil of juniper berry as being distilled from the unripe green fruit. The oil of juniper—the commercial article—was more largely sold than oil of juniper berry. Mr. Horace Smith found as a fact that the article demanded was a drug or medicine, purchased to be used as a drug, whereas the article supplied was not a drug, and was to the prejudice of the purchaser. He imposed a fine of £1 and £5 5s. costs.

Unqualified Druggeller's Fatal Mistake.—The evil resulting from unqualified persons dealing in drugs which are liable to be used as medicines was well illustrated at an inquest held this week by the County Coroner (Mr. J. F. Price) concerning the death of George Donald, forty-nine years old, of John Shepley Street, Hyde.—Robert Calverley stated that on the previous Friday night Donald asked him to go for a pennyworth of sweet nitre. He went to the shop of Mrs. Joy, in Fitzroy Street, Ashton, and asked for sweet nitre. Immediately after drinking the liquid Donald was so sick that a doctor had to be sent for. On his way for one he met Mrs. Joy, who said, "What did you ask me for?" Witness replied, "Sweet nitre." Mrs. Joy then said, "I have given you the wrong stuff. It was ammonia." Death

took place before the doctor's arrival.—Mary Ann Hawkins said that Mrs. Joy told her she had served a boy with ammonia in mistake.—Dr. Cheetham, who was called upon to attend the deceased, said that he had made a post-mortem examination, and thought that death was due to shock, caused by the drinking of ammonia. A healthy man might have recovered, but Donald had a weak heart.—Harriet Jane Joy stated that she kept a general shop, and sold sweet nitre, ammonia, and many other articles of a similar nature. She understood the first witness to have asked for ammonia. When he was passing, some ten minutes afterwards, she called him and asked him what he asked for. He told her sweet nitre, and she replied, "I understood you to say ammonia."—The jury returned a verdict of "Death by misadventure," and, at the request of the jury, the Coroner very severely censured Mrs. Joy. He said the jury did not believe her evidence.

Manchester Pharmaceutical Association. — The annual general meeting of this Association was held at the Victoria Hotel, Manchester, on April 12. In the absence through indisposition of the President (Mr. G. S. Woolley), the chair was taken by Mr. Harry Kemp. There was a fair attendance. After the ordinary business had been dispatched a discussion took place on the Lord Chancellor's Pharmacy Bill now before the House of Lords, and the following resolution was unanimously passed :—

> That this Association is gravely concerned at the character of the Pharmacy Amendment Bill introduced into the House of Lords by the Lord Chancellor, which appears to be completely subversive of the principle of the Pharmacy Acts of 1852 and 1868, which is that the professional education of the individual chemist and druggist, or pharmaceutical chemist, affords the only safeguard to the public in the dispensing and selling of poisons. This Association would urge upon the Council of the Pharmaceutical Society the necessity of at once opposing the Bill, and would suggest that means be taken to secure the inclusion of chemists in the other Bill introduced by the Lord Chancellor in favour of medical men, dentists, midwives, etc. It pledges itself to do its utmost in assisting the Council of the Pharmaceutical Society in this matter.

Exceptional pressure on our space compels us to defer a detailed report till next week.

Damages for Prescribing.—On Wednesday last the case of Coleman *v.* D. B. Coldwell and Co. came on for trial before Mr Justice Phillimore and a common jury in the Queen's Bench Division of the High Court. The plaintiff, Mary Eleanor Coleman, suing by her father, Harry Coleman, of St. Albans Road, Watford, as next friend, claimed damages from the defendants, chemists, of St. Albans Road, Watford, for negligently supplying her with a certain noxious ointment in August, 1898, which when applied dangerously affected the plaintiff and had left a permanent scar. The ointment was known as unguentum hydrargyri nitratis. Defendants denied they were guilty of any negligence, denied that the ointment supplied was of a noxious character, said it was the usual and proper remedy for the disease—ringworm—from which the plaintiff was suffering, and alleged that the plaintiff's mother neglected to apply it as directed. They denied that the ointment caused the plaintiff to become ill, and said if it did injuriously affect the plaintiff it was in consequence of its not being applied in the manner directed by the assistant.—Mr. G. M. Cohen appeared for the plaintiff, and Mr. Macintyre for the defendants.—Mr. Cohen, in opening the case, explained that the plaintiff was a little girl six years of age, and in August, 1898, her mother took her to the defendants' shop, and asked the assistant whom she saw to give her something curative for the child's face, which was sore. The assistant looked at the face, and said in his opinion the child was suffering from ringworm, and he would give her some ointment to relieve it. He gave her mother the stuff in question, and told her to apply it to the child's face. She did so, but it caused the child great pain and suffering, the face became violently inflamed, and she had become disfigured with a large scar for the rest of her life, the skin being totally destroyed and a large sore being still on her face.—Dr. Robins, of Watford, and Dr. E. A. Harbord, Hon. Surgeon to the London Skin Hospital, both gave evidence that the ointment was a most dangerous thing to prescribe to an inexperienced person, and that it ought only to be used under the direction of a properly qualified medical man.—Mr. Coldwell, the defendant, said he had used this ointment for thirty-one years for cases of ringworm, and had never known it do harm. —Dr. Robert Buchanan, Medical Officer of Health, Watford, having given evidence, Dr. J. Stowers, of Harley Street, Physician to the North-West London Hospital for Diseases of the Skin, said in his opinion the assistant was quite justified in giving the ointment, as if properly applied it was a usual remedy.—Dr. Thirwell Pyke, another specialist, also said the ointment was a proper remedy used skilfully.—Mr. Prince, defendants' assistant, also gave evidence, and counsel having addressed the jury, the case was adjourned.—On Thursday, after hearing the judge's directions, the jury retired, and, after some deliberation, said they wished to return a verdict for the plaintiff for the smallest sum that would carry costs.—Mr. Justice Phillimore said he could not take such a verdict as that. It was for the jury to assess damages, and for him to say how the costs should be dealt with.—The jury again consulted together, and found a verdict for the plaintiff, damages £5.—Mr. Cohen asked for judgment, and for a certificate that the case was a proper one for the High Court, as expert medical evidence had been called, and for costs on the High Court scale.—Mr. Macintyre opposed the application, but the judge said, although he should have been pleased if the jury had found the other way, still, as they had decided the matter, he must take the verdict, as he could not say the case was not a proper one for the High Court. There must be judgment for the plaintiff for £5 and costs on the higher scale. —Order accordingly.

Trade Notes.

Messrs. Johnsen and Jörgensen, 4, 5, and 6, Bury Court, St. Mary Axe, E.C., send a plaster cast of their new registered poison shop bottle, which will be supplied in all sizes. The bottle is square, and the distinctive feature is that each side is fluted with curves, which cover the whole surface horizontally, with the exception of a space for the label. The appearance will be attractive and ornamental, and the bottle will conform to the new poison regulations, as the transverse markings render it easily distinguishable by touch. The same design will be used for dispensing bottles. A new registered special stopper representing death's head and cross bones can be obtained with these bottles if desired, and it is interesting to note in connection with this that the State of New York Assembly has recently passed a Bill providing that any medicine which may contain a poison, no matter in how harmless a quantity, must be put up, before being offered for sale, in serrated bottles, in which must be blown a symbol of the skull and cross bones.

Messrs. Burgoyne, Burbidges and Company, 16, Coleman Street, London, E.C., send a copy of their export list, with which is published a special supplement on chlorobrom. Included in this are some of the testimonials the firm has received in connection with the use of chlorobrom, both in sleeplessness and sea sickness.

The Formalin Hygienic Company, Ltd, 9 and 10, St. Mary-at-Hill, London, E.C., wish to draw attention to the fact that the word Formalin is a registered trade mark which may only be used as a label on original packages sold by, or under the licence of that company. Attention is also directed to the fact that the company has acquired, and is determined to act upon the proprietary rights of the use of Formic aldehyde, Formaldehyde, also called Formol and other fancy names protected by fifteen patents, and including the use of Schering's pure formic aldehyde sold by the company under the trade mark formalin, for disinfection, preservation of organic liquids and substances, and the stay of putrefaction and fermentation of same, as also the hardening of gelatinous and albuminous substances. Any assistance on the part of friends of the company as to the detection of infringements will be particularly appreciated, and acted upon in the common interest.

SCOTTISH NEWS.

Mr. T. Maben, Hawick, who has resigned from the Board of Examiners, intends to join Mr. T. S. Barrie, as co-principal of the West of Scotland College of Pharmacy, and will enter that institution on August 1 next. Mr. Maben has long taken a practical interest in education, having been a teacher under the Science and Art Department many years ago. At present he is Chairman of the Hawick School Board. Mr. Maben has sold his drug business as from June 30 next to Messrs. W. E. Wilson and James Bain, both at present in the Glasgow Apothecaries' Co. Mr. Wilson is an old apprentice of Mr. Maben's. His aërated water business will be taken over by Mr. George Young, at present his branch manager at Jedburgh.

MARKET REPORT

London Report.

April 13, 1899.

Business has been somewhat quiet during past week, the chief feature having been a decided set back in price of Sulphate of Quinine. Otherwise there are no changes of any importance to record. Opium is slightly firmer for druggists' and manufacturing kinds, while price of Salol has been advanced. Quicksilver is rather steadier. Mercurials unchanged. Camphor quiet, but steady. Bromides and Iodides without change. Acid Citric somewhat weak. Sulphate of Ammonia rather easier. Carbolic Acid steady and in good demand. Saffron dearer. The following are ruling prices of some articles of chief interest :—

Acetanilide (Antifebrine)—Quiet and dull of sale at 11d. per lb. for 5 cwt. lots, up to 1s. 2d. per lb. for smaller quantities.

Acid Carbolic—Is in good demand at 6⅝d. to 6¾d. per lb., for the 35-36° *ice crystal* in 2½ cwt. drums and overcasks, smaller packing being dearer in proportion ; 39-40° *ice crystal* 7d. to 7½d. per lb. ; 39-40° *detached crystals* (B.P. quality) 8d. to 8½d. per lb. *Crude* : 60° F., 2s. 1d. per gallon ; 75° F., 2s. 7d. per gallon. *Liquid* : 95-98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, according to quantity, in 40-gallon casks.

Acid Boracic.—*Crystals* are quoted 26s. per cwt., *powder* 28s.

Acid Citric—Is dull at nominally 1s. 2½d. to 1s. 3d. per lb. on the spot for *crystals* in 5 cwt. casks.

Acid Oxalic—Is still quoted 3d. to 3½d. per lb., according to quantity, nett free, delivered London.

Ammonia Compounds.—*Bromide* : 2s. 2d. per lb. *Carbonate* : 3d. to 4d. per lb, according to make, packing, etc. *Muriate* : ordinary, free from metals, 25s. to 27s. 6d. per cwt. ; chemically pure small crystals, 30s. to 32s. 6d. per cwt. *Sal ammoniac* : crushed for batteries, firsts, 37s. per cwt ; seconds, 35s. ; sublimed firsts, 35s. ; seconds, 33s. per cwt. *Sulphate* : flat, gray, prompt, 24 per cent., London, £10 15s. per ton ; Hull and Leith, prompt, £10 13s. 9d. to £10s. 15s. ; Beckton nominal ; Beckton terms, prompt, £10 10s. per ton. *Sulphocyanide* : 1s. 2d. per lb.

Antimony.—*Regulus*, £38 to £39 per ton. *Crude*, Japan (*Black Sulphide*), £24 per ton, spot landed, £23 per ton, *c.i.f.* to arrive.

Antipyrine—Both *Dr. Knorr's* article and its cheaper equivalent, viz., *Phenazone*, are steady at unchanged price.

Ashes.— *Pot.*, 24s. ; *Pearl*, 33s. per cwt.

Borax.—Makers quote *crystals* 16s. 3d. per cwt., *powder* 16s. 9d.

Bromine and Bromides—Are unchanged at late prices.

Camphor—Is quiet, in *crude* no business has been reported, there being sellers of *China* at 125s. per cwt., *c.i.f.*, and of *Japan* at 127s. 6d. per cwt., *c.i.f.* *Refined*, makers' prices are unchanged at 1s. 8½d. per lb. for *Bells* and *Flowers*, price of *Tablets* being higher in proportion.

Castor Oil—Dull ; Belgian first pressing spot, £25 per ton ; July-December, £24 10s. per ton ; second pressing, £24 per ton, ex-wharf. Hull manufactured, £25 to £25 10s. per ton, in barrels ; 2¾d. to 2⅞d. per lb. in cases for prompt delivery, ex-wharf, London. London pressed, 25s. per cwt., in barrels. French, 25s. 6d. to 26s. per cwt.

Chloride of Lime (Bleaching Powder).—English is quoted £6 per ton.

Cloves.—Privately the market for *Zanzibar* is firm at 3¼d. for April-June delivery. At auction 233 bales *Zanzibar* met little demand, and only 39 bales sold at 3⅛d. to 3¼d.

Coal Tar Distillation Products.—*Toluol* : Commercial, 1s. per gallon ; refined, 1s. 2d. to 1s. 3d. per lb. *Benzole* : 50 per cent., 7¾d. to 8d. per gallon ; 90 per cent., 7½d. *Creosote* : 3d. per gallon. *Crude Naphtha* : 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha* : 95 per cent., at 160° C., 1s. 6d. per gallon, 90 per cent. at 160° C., 1s. 3d. ; 90 per cent., at 190° C., 1s. 3d. per gallon. *Anthracene* : A, 3¾d. per unit ; B, 2¾d. *Pitch* : 26s. per ton, *f.o.b.* *Tar* : Refined, 12s. 6d. per barrel ; 2¼d. per gallon ; crude, 12s. per barrel ; 2d. per gallon.

Cocaine.—Makers are very firm at 11s. 9d. per oz. for the *Hydrochlorate* for 100-oz. lots in 25-oz. tins, and 2s. 6d. per oz. more for the *pure*. It is fully expected that the price will still further advance before very long.

Cod-Liver Oil.—Market is, if anything, a shade firmer at 60s. to 65s. per barrel for best new season non-congealing oil in tin-lined barrels of 25 gallons each.

Codeia—Is firm at 12s. 3d. to 12s. 6d. per oz., according to quantity.

Cream of Tartar—Is quiet at 76s. per cwt. for first white *crystals* on the spot, and 78s. to 82s. for *powder*.

Essential Oils—Continue neglected, the business passing being practically *nil*. *Star Aniseed* is quoted 5s. 8d. for both spot and for arrival. *Peppermint* inactive, both for American and for Japanese.

Galls.—Demand for *China* continues very slow and no business of any importance has been reported. *Persian* are firmly held, the high prices asked checking sales, although there is a fair inquiry for most kinds ; *blues* have changed hands in small quantities at 62s. 6d. per cwt. ; *Smyrna* are only in limited demand, holders being, however, very firm ; small sales of *blues* are reported at 57s. 6d. per cwt.

Ginger.—Large supplies of *Cochin* offered in auction, but demand was slow, and rough kinds ruled easier, but cut kinds steady. Of 2206 packages only 165 sold, fair bold cut and scraped at 76s., bold and medium at 72s., bold native cut at 65s. ; Calicut, rough, in cases, bold and medium bright at 32s. to 33s. 6d., good rough tips at 25s , good cuttings at 17s. 20 bags *Bengal* were bought in at 22s. *Jamaica*, in good supply, sold fairly well at steady rates, good bold at 84s. to 90s , good medium some bold at 74s. to 80s., fair medium at 69s. to 71s., good ordinary at 62s. to 67s. 6d., Rhatoon at 60s. to 60s 6d. 8 bags *St. Lucia* sold at 63s.

Salol.—Makers have advanced price 4d. to 3s. 6d. per lb.

Glycerin—Is quiet, the competition for orders being very keen. *Crude* is unchanged at £29 to £31 per ton for the quality suitable for refining, while *refined* is quoted 52s. 6d. to 55s. per cwt. for *English*, and 54s. to 60s. per cwt , according to brand, for *German*, for the best white, chemically pure, double distilled 1260° quality in 56-lb. tins and cases (2 or 4 tins in a case).

Iodine and Iodides.—No change to report.

Mercurials—Are without change from last week.

Menthol—Is lower for arrival, a parcel having lately changed hands at 6s. 6d. per lb. *c.i.f.* for April-June shipment by steamer.

Morphia - Is very quiet at 4s. 6d. per oz. for the *hydrochlorate salt* in *powder*, and 2d. per oz. more for the *crystalline salt*.

Nitrate of Soda.—Ordinary on the spot is quoted £8 7s. 6d., refined £8 15s. per ton.

Oils (Fixed) and Spirits.—*Linseed* firm. Spot pipes, London, £17 10s. to £17 15s. per ton ; barrels £18 2s. 6d. ; May-August £17 17s. 6d., September-December £16 17s. 6d., Hull spot naked £17 2s. 6d , May-August £16 5s., September-December £15 12s. 6d. *Rape* steady. Ordinary brown spot, May-August and September-December £21 per ton ; refined spot £22 10s. ; Ravison naked spot £16 15s., May-August £16 15s. to £17, *Cotton* firmer. London crude spot and May-August, £15 10s. ; refined spot, £17 to £17 10s., according to make ; Hull naked refined spot, £16 ; May-August, £15 15s. ; crude spot and May-August, £15. *Olive* : Mogador £30 to £31 ; Spanish, £30 to £32 per ton. *Coconut* steady. Ceylon spot, £25 15s. per ton landed ; April-June shipment, £24 10s. *c.i.f.* ; Cochin spot, £29 10s., landed ; for arrival near at hand, £26 10s., *c.i.f.*, April-June, £26 5s., *c.i.f.* ; August-October, £26 per ton, *c.i.f.* *Palm* : Lagos spot £24 10s. *Lubricating Oil* : pale American spot 5s. 6d. to 7s. per gallon, black 5s. to 5s. 9d. ; Russian black 5s. to 5s. 6d. ; pale, 5s. 9d. to 8s. *Turpentine*, after being quiet has again hardened on firmer advices from the other side, American spot is quoted 33s. to 33s. 3d. per cwt. May, 32s. 6d. to 32s. 9d., June 30s. 9d., July 27s. 9d., September-December, 27s. 6d., Jan.-April, 1900, 28s. 3d. per cwt. *Petroleum* dull at yesterday's decline. Russian spot 4⅝d. per gallon, American spot 5¼d. per gallon, water white 6⅜d. to 6½d. per gallon. *Petroleum spirit*, American 9d. per gallon, deodorised 9⅜d. to 9½d.

Opium.—Business in this article has been very quiet since the holidays, transactions having been very small. There is now, however, a somewhat firmer feeling on the part of holders, all the offerings of *Druggists'* kinds having been withdrawn. *Soft shipping* qualities are unchanged in value, while there has been a small business passing in *Persian* at 10s. 6d. per lb. for medium to fair quality.

Paraffin Wax.—*Crude* : 1¾d. to 2d. per lb. ; *refined*, 2½d. to 3d. per lb.

Pitch—8s. per cwt.

Phenacetin—Is very dull at 3s. 6d. to 4s. per lb. for both

crystals and *powders*; *Bayer's* make is still quoted 6s. 1d. per lb. and *Riedel's* 5s. 5d. per lb. in original 1 lb. bottles.

POTASH COMPOUNDS.—*Bicarbonate*, 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10d. per lb. *Chlorate*, 3¾d. to 4d. per lb. for prompt delivery for crystals and powder respectively. *Permanganate*, small crystals in 1 cwt. kegs, 52s. 6d. to 55s. per cwt.; large crystals, 57s. 6d. to 60s. per cwt. *Prussiate*, yellow English, 7¾d. to 8½d. per lb.; red, 1s. 1½d. to 1s. 2d. per lb.

QUICKSILVER.—£8 5s. per bottle from first hands and £8 1s. per bottle from second hand.

QUININE.—Market opened this week at 1s. 7d. per oz., at which there were rather sellers than buyers. On Tuesday the chief German makers reduced their price from 1s. 9d. to 1s. 6d. per oz. for the *Sulphate*, in 1000 oz. lots, which further tended to depress the market, which remains distinctly undecided. The English makers followed suit by also reducing their price. It now remains to be seen whether the speculators who have been so good as to take the market under their protecting wing will be able to again force prices up to the former level of 1s. 9d. to 1s. 10d. per oz. (or even higher as was confidently predicted), if not then the position looks somewhat awkward for them. Looking at all circumstances we do not think that consumers will be far wrong if they take advantage of the present lull to secure a moderate supply of the article, as it can hardly be expected that the speculators will give up the game without a struggle.

ROSIN.—Strained spot, 4s. 4¼d. to 4s. 6d. per cwt. *ex* wharf; 4s. 1½d. per cwt. *c.i.f.* for May-July and Aug.-Oct. shipment per sailing vessel.

SHELLAC.—Market is very quiet. *TN orange* basis fair, on spot 67s. to 68s. per cwt. April-June steamer 67s. per cwt., *c.i.f.*

SODA COMPOUNDS.—*Crystals*, bags 52s. 6d., barrels 55s. per cwt. ex-ship Thames, *Ash* £5 to £5 10s. per ton according to percentage. *Bicarbonate* 97 per cent. £7 2s. 6d. to £7 12s. 6d. per ton, fully bicarbonated 18s. 6d. per cwt. *Bichromate* 2¾d. per lb. *Caustic white* 70 per cent. £7 10s. per ton, 60 per cent. £6 10s. per ton. *Hydrosulphate* (*Antichlor*) 6s. 6d. to 8s. 6d. per cwt. according to make, etc. *Iodide* 11s. 10d. per lb. *Nitrate* commercial £8 7s. 6d., refined £8 15s. per ton.

SPICES (VARIOUS).—*Black Pepper* all bought in. Singapore, fair, at 5⅜d.; Tellicherry at 5d. to 5⅜d. *White Pepper* mostly bought in. Singapore, fair to good, at 8⅝d. to 10d; Siam at 8¾d.; of Penang 20 bags sold at 7 13/16d. *Chillies* lower. 75 cases Japan sold, without reserve, at 33s. 6d. to 34s.; also 51 bales Zanzibar, without reserve, damaged, at 28s. 6d. to 29s. 6d. *Cassia Lignea*: Of 534 cases, 100 cases false packed sold, without reserve, at 35s. 6d. to 36s.; fine old bought in at 54s.; of 285 bales broken, 85 bales sold, without reserve, at 27s. to 30s. 6d. *Cinnamon Chips* in little demand, 529 bags being all bought in at 3½d. to 3¾d. *Mace* dull. Of 19 cases Penang, only 1 case sold, good pale, part wormy, at 1s. 10d. 5 packages West Indian sold; ordinary red to fair pale at 1s. 3d. to 1s. 6d.; pickings, 1s. 1d. *Nutmeg*: 9 packages West India sold; 95's to 96's at 1s. 1d., 108's at 11d. *Pimento* lower. Of 235 bags, only 75 sold; good at 4½d., fair at 4 7/16d.

SULPHATE OF COPPER—Is quoted £23 10s. to £25 10s. per ton on the spot according to brand, quantity and packing.

SULPHONAL—Is firm, makers' price being 17s. per lb. for both *powder* and *crystals*, with an allowance for 4 cwt. contracts, while quantity available from second-hand, at anything below makers' price, is now quite limited.

TAR.—*Stockholm*, 26s. 6d.; *Archangel*, 18s. per cwt.

TURMERIC.—The moderate supplies in auction were all bought in *Cochin*, ordinary rough finger at 19s. to 21s. per cwt.; split bulbs at 10s. 6d., and dark rough *Japan* finger and bulbs at 16s. per cwt.

To-day's drug auctions passed off quietly, there being no changes of importance to record. The following are the particulars as far as it has been possible to give same up to the time of going to press:—

ACONITE ROOT.—15 bags *Japan* taken out at 28s. per cwt.

ALOES.—30 kegs fair *Socotrine* were taken out at 77s. per cwt., 20 kegs ditto, of good quality, being held for 75s. per cwt. 3 casks liquid *East Indian* at 40s. 50 cases *Cape* sold freely at 26s. per cwt. for good hard bright, down to 20s. for drossy inferior.

AMBERGRIS.—3 tins dark undeveloped . ught in at 25s. to 35s per oz.

ANATTO SEEDS.—22 bags bought in at 4d., 4 packages of inferior quality, part selling at 1½d. to 3d. per lb.

ARGOL.—2 bags *Cape* sold at 35s. 6d. per cwt.

ASAFETIDA.—A large parcel of 213 cases was practically all bought in at figures ranging from 25s. per cwt. for inferior blocky up to 40s. to 60s. per cwt. for medium to fair.

BALSAM COPAIBÆ. — Seven cases of medium quality sold at 1s. 3d. per lb.

BALSAM PERU.—Two cases bought in at 8s. 3d. per lb.

BALSAM TOLU.—Ten cases taken out at 1s. 6d. per lb.

BUCHU LEAVES.—Two bales fair green *rounds* sold cheaply at 5d. per lb.; 72 bales fine *longs* realised 5 d. to 6d., good green *rounds* being held for 6¼d. to 6½d. per lb., 3 bales oblong fetched 3½d. per lb.

CAMPHOR.—25 boxes *Japan* refined, in ½ oz. tablets, part sold at 1s. 6d. per lb.; balance bought in at 1s. 7d.

CARDAMOMS.—Good *Ceylon-Malabars* realised 2s. 3d. to 2s. 9d. per lb.; second size, 1s. 6d.; thirds, 1s. 4d. to 1s. 6d.; fourths, 1s. 2d. *Ceylon-Mysores* sold at 2s. 5d. up to 3s. 10d. for fine bold white (while for 1 lot 4s. was bid) down to 1s. 7d. per lb., for lower quality. *Seeds* sold at 2s. 4d. to 2s. 5d. per lb.

CASCARILLA BARK.—6 bales bought in at 35s., and 7 barrels siftings at 25s. per cwt.

CASSIA FISTULA.—12 bags bought in at 20s. per cwt.

CHINA VERMILION.—3 cases were bought in at 2s. 1d. per lb.

CHIRETTA.—11 bales of good quality were taken out at 4½d. per lb.

CINCHONA BARK.—68 bales flat *Calisaya* all bought in at 1s. 2d. per lb., the highest bid being 8½d. per lb.; 31 serons *Crown Bark* chiefly sold at 8d. to 11d. per lb.

COCA LEAVES.—1 bale sold without reserve at 9½d. per lb.

COLOCYNTH.—6 cases *Turkey* were held for 11½d. per lb., 4 casks selling at 11¼d. per lb. for medium to fair apple, and 6d. per lb. for broken.

COLOMBO ROOT.—10 bags fair washed were held for 30s. per cwt., only 25s. being bid.

CROTON SEEDS—21 packages of only fair quality were bought in at 60s. per cwt.

CUBEBS.—31 bags good bought in at 25s. per cwt. 14 bags dull and stalky at same figure.

CUMMIN SEED.—20 bags good *Morocco* bought in at 24s. per cwt.

DILL SEED.—22 bags bought in at 10s. per cwt., only 8s. being bid.

DRAGONS' BLOOD.—2 cases fair lump were bought in at the high figure of £10 per cwt., only £7 5s. being bid. 9 cases of rather better quality taken out at £11, the highest bid for these being £8. 4 cases dull being bought in at £6 per cwt.

ERGOT of RYE.—4 barrels sound but small *Spanish* were taken out at 1s. 10d. per lb.

ESSENTIAL OILS.—8 cases *Cinnamon Leaf* part sold at 3d. per oz. 10 cases *Eucalyptus* bought in at 1s. 3d. per lb. 5 cases *Star Aniseed* part sold at 6s. 6d. per lb.; 10 cases ditto bought in at same figures. 8 cases *Lemongrass* held for 4d. per oz. 11 cases *Citronelle* were taken out at 1s. 1d. per oz. 1 box West Indian *Bay Oil* bought in at 5s. 6d. per lb. For 2 cases Wayne County *Oil Peppermint* there was no bid.

GAMBOGE.—Seven cases medium to fair pipe were bought in at £8 10s. per cwt.

GENTIAN ROOT.—Fifty-four bags of fair whole root taken out at 16s. per cwt.

GUM ACCROIDES.—Twenty-eight bags were taken out at 25s. per cwt.

GUM AMMONIACUM.—Twenty-four cases were all bought in at 20s. to 30s. per cwt., eight cases *ditto* at 15s. to 30s.

GUM ARABIC.—Eleven cases picked sorts were bought in at £9 per cwt.; 5 bales *Turkey* sorts being held for 90s. per cwt.

GUM BENJAMIN.—59 cases *Penang* part sold at 60s. per cwt., 4 cases fair to good *Siam* taken out at £16 per cwt.; 55 cases ditto held for same price, down to £7 to £12 for low to medium, and 56s. to 60s. per cwt. for inferior; 77 cases part sold at £9 to £10 10s. for good seconds *Sumatra*, down to £5 10s. to £6 per cwt. for medium ditto.

GUM GALBANUM.—16 packages bought in at 1s. 1d. to 1s. 3d. per lb., down to 9d. for blocky and inferior.

GUM GUAIACUM.—4 barrels of inferior quality, part very dark in colour, were taken out at 6½d. per lb.

Gum Kino.—1 case genuine *Cochin* bought in at 7s. per lb.

Gum Mastic.—16 cases yellow bought in at 1s. 11d. per lb.

Gum Myrrh.—45 packages chiefly bought in at 75s. per cwt. for good, down to 45s. to 65s. for medium to fair sorts. 7 casks really good picked gum was held for 110s. per cwt, a bid of 95s. being declined.

Gum Sandarac.—34 casks of good quality partly sold at 52s. 6d. per cwt.

Guaza.—167 Robbins of fine quality, part sold at 5d. per lb., balance being bought in, price required for good tops being 6d. per lb. 2 bales dusty siftings sold at 3d. per lb.

Honey.—13 casks *Jamaica* were all bought in at 24s. per cwt., only 22s. per cwt. being bid. 34 casks *ditto*, part selling at 21s. to 23s. per cwt.

Ipecacuanha.—3 packages *Carthagena* were taken out at 7s. 6d. per lb., a bid of 7s. 3d. being refused. 13 bales *Rio* sold freely at 11s. 7d. to 11s. 11d. per lb., and 1 bale picked at 12s. 4d. per lb.

Kamala.—6 cases of rather dull appearance were held for 7½d. per lb.

Kola Nuts.—3 barrels *West Indian*, slightly mouldy, were bought in at 3d. to 5d. per lb.

Lavender Flowers.—100 bags not very bright *Spanish* were taken out at 14s. per cwt.

Liquorice Root.—78 bales rough *Syrian* bought in at 8s. 6d. per cwt.

Musk.—5 caddies and 1 tin *Yunan* all bought in at 25s. to 45s. per oz.

Nux Vomica.—389 bags fair *Cochin*, but rather small, part sold at 7s. to 8s. per cwt.

Nutmeg Paste.—2 cases part sold at 1¾d. per lb.

Patchouli Leaves.—44 packages of fair quality were taken out at 4d. per lb.

Opium.—11 cases sea damaged offered without reserve, all sold at 7s. 2d. up to 7s. 4d. per lb.

Orange Peel.—8 packages bought in at 6d. to 8d. per lb. for dull to fair bright new thin cut.

Orris Root.—2 serons *Mogador* taken out at 12s. 6d. per cwt. 5 serons ditto, of rather better quality, held for 15s. per cwt., a bid of 12s being refused.

Rhubarb.—25 cases flat high dried were all bought in, bids of 10d. and 10½d. respectively, for part being declined; 34 chests also bought in at 1s. 6d. to 1s. 7d. per lb. for fair round *Shensi*; 4 cases round *Canton*, offered without reserve, sold at 5d. to 5½d. per lb., and 2 cases flat at 5d. and 7d. per lb. respectively.

Rose Oil.—2 pots low *East Indian* taken out at 1d. per oz, while 6 pots of good quality were held for 3d. to 6d. per oz

Sarsaparilla.—Two bales yellow native *Jamaica* sold at 10½d. per lb. for *ICCD*; 11 bales *Lima* held for 1s. 1d. per lb., only 1s. being bid.

Scammony.—Twenty-two cases all bought in at 10s. 6d. up to 30s. per lb., according to quality.

Scammony Roots.—Ninety-nine bales were taken out, 22s. per cwt. being price required.

Senna.—65 packages *Alexandrian* part sold at 8d. to 9d. per lb. down to 2d. to 4½d. for siftings, broken and inferior. 16 bales *Tinnivelly* were all bought in at 1¾d. up to 6d. per lb. according to quality and condition; other 13 bales all bought in, 2½d. per lb., being the price mentioned; of 74 bales the greater part sold at 1¾d. for low spotty and broken up to 3¾d. for small green leaf.

Sticklac.—1 case, offered without reserve, sold at 30s. per cwt.

Strophanthus Seed.—6 bags *Brown* taken out at 1s. 6d. to 2s. per lb.

Tamarinds.—62 bags good *West Indian* bought in at 14s. per cwt., a bid of 12s. per cwt. being declined.

Turmeric.—42 bags *East Indian* bulbs bought in at 12s. per cwt. 29 bags ditto were held for the same figure. 25 bags *China* sold at 17s. per cwt.

Vanilloes.—Of 36 tins *Tahiti* the greater portion bought in. 1 case 5½ in. selling at 11s. 3d. per lb. 72 tins *Mauritius* sold readily at 28s. for 8 in. to 8½ in. down to 13s. 6d. for 6½ in. to 7½ in. *Seychelles* part sold at 10s. per. lb. for 3 in. to 5½ in.

Wax.—17 bales *Spanish* bought in at £6 12s. 6d.; fine *Australian* realised £7 5s. per cwt. Fair *Madagascar* held for £6 12s. 6d., good *Jamaica* selling at £7 10s. to £7 12s. 6d. 15 packages *Italian* held for £6 10s. per cwt., fair *Zanzibar* for £6 5s. to £6 10s., 1 bale selling at £6. 33 cases *Bombay* at same figure. 25 bags pale *Carnauba* bought in at 35s. per cwt.

Liverpool Market Report.

April 12, 1899.

Ammonia Salts.—Carbonate is steady at 3d. to 3¼d. per lb. Sal ammoniac, 33s. to 35s. Sulphate scarce at £11 to £11 1s. 3d. per ton.

Bleaching Powder is quiet at £5 per ton.

Canaryseed—Offers no feature either in demand or price. Turkish 26s. to 26s. 6d. per 464 lb.

Copperas—Is very firm at 37s. to 39s. per ton.

Copper Sulphate—Is dearer. £24 15s. per ton.

Ginger.—50 bags of Sierra Leone made 20s. per cwt.

Linseed.—Sales include 200 tons of River Plate at full prices and 100 tons Calcutta, April-June, 4 per cent., at 34s. 9d. per 416 lbs., whilst River Plate, April shipment, offers at 33s. (4 per cent.).

Oils (Fixed) and Spirits.—*Castor* is a slow market. Calcutta offers at 2 15/16d. per lb., store; 50 cases sold, ex-quay, at 2⅞d. French 1st pressure, 2¾d.; 2nd, 2⅝d. Madras, 2¾d. per lb. *Olive* is steady and has sold at £31 to £31 10s. per tun. *Linseed*: Liverpool pressed, packed for export, is unchanged at 19s. 3d. to 19s. 6d. per cwt. *Cottonseed*: In export Barrels Liverpool refined offers at 17s. 6d. to 18s. per cwt. *Spirits of Turpentine* is scarce at 34s. per cwt.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate*, 3½d. to 3¾d. per lb. *Cream of Tartar* is quietly steady at 75s. to 80s. per cwt. *Pearlashes* are reduced to 32s. and 33s. per cwt. *Potashes* are slow of sale at lower price of 23s. 6d. to 23s. 9d. per cwt. *Prussiate* dearer, 8d. to 8¼d. per lb. *Saltpetre* firm at 21s. 9d. per cwt.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax*, £16 per ton. *Caustic*, 70 per cent., £7 per ton. *Nitrate* is steadily held for 8s. 6d. to 8s. 8d. per cwt. with good inquiry.

Newcastle Chemical Report.

April 12, 1899.

Bleaching Powder on this market is most stirring. Sales continue to be made on a pretty large scale for the Baltic ports. Soda Crystals are a shade more active against home orders. Sulphur a trifle scarce. Prices are: Bleaching Powder, £5 7s. 6d. to £5 12s. 6d.; Soda Crystals, basis, 45s. to 47s. 6d; Caustic Soda, 70 per cent. £7 5s. to £7 10s.; Alkali, 40 per cent., £4 5s.; Soda Ash, 50 per cent., £5; Sulphur, £4 15s. to £5 per ton.

Manchester Chemical Report.

April 12, 1899.

The Board of Trade returns are, taken on the whole, fairly satisfactory, and bear out the reports published from time to time of the trade during the past month. The imports of chemicals, dye-stuffs, and tanning substances are about the same as in February, showing a decline of 1 per cent. only. The exports of chemicals and chemical and medicinal preparations amount to £880,075, an increase of 2·8 per cent. It is only in the matter of heavy chemicals where the doubtful element comes in. Of Alkali the exports are 302,227 cwt., a decrease of 12·6 per cent., and bleaching materials 117,128 cwt., an increase of 30·3 per cent. on 1898. It is significant, however, that under the head of values Alkali shows a decrease of 9·7 per cent., while on the other hand bleaching materials have only increased 10·7 per cent. The principal decline is to the United States, which, so far as Alkali is concerned, is most unsatisfactory when the quantity of 63,889 cwts. is compared with the 253,040 cwts. of 1897. On the other hand, bleaching materials show an increase of about 21,000 cwt. on the corresponding period of last year. So far as the northern district is concerned, pretty nearly all departments are reported busy. Ammonia, Alkali, and Bleaching Powder are especially firm, while Caustic Soda is steady. Saltcake is rather easier at 29s. to 31s. per ton, in bulk, according to delivery. Naphthas and Benzols are unchanged, but the latter are still most unsatisfactory. Sulphate of Copper is practically unchanged at £25 to £25 10s., best brands, delivered here, the metal remaining steady. Brown Acetate of Lime is unchanged on last week. Arsenic has advanced rather sharply, and ranges from £18 to £18 10s. per ton, ex-ship. Garston. Yellow Prussiate also maintains the recent advance, and is very scarce. Green Copper is dull, but unchanged here for best Lancashire make, but figures are unchanged. Welsh is quoted 13s. per ton, in bulk, on rails. Aniline Oil and Salt dull.

SYPHON CHECK BOOKS.

Book of 250 leaves, 6 Checks on each leaf, numbered and part gummed to attach to Syphon.

One Book, **9/-**; Two Books @ **8/-** per Book; Three Books @ **6/6** per Book.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second - hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Foreign Stamps, arranged in countries in small books, and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. Franklin, 34, Exchange Buildings, Birmingham.

Quinine, few 25-ounce tins, 1s. 9d. per oz. (B. & S. brand).—Mr. Gregory, 10, Hammet Street, Taunton.

Sells like Magic. Straw hat polish. Made and bottled in two hours. 100 per cent. profit. No trouble to make. Recipe 2s.—Huntley, chemist, Kidderminster.

Pillar, ornamental iron, 10 ft. long, to stand on pavement, to carry mortar or lamp. Offers to John T. Coats, pharmaceutical chemist, Edinburgh.

4 × 1 lb. **Bots.** Howard's Citr. Iron and Quin. at 10s. 6d.; 21s. for the four. 48 ¼-oz. bottles same, 14s.; 36 ½-oz., 16s. 6d. Bism. Subcarb., 5s. 3d. per lb.; 4 lb., 20s., carriage paid.—Eastman, Forest Lane, Stratford.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Address Wanted.—Anyone knowing the present address of Mr. P. Stoneham (late of Ashmore Road, Paddington), who takes locum work, will greatly oblige by sending same to Hudson, chemist, Sheerness, Kent.

Wanted.—'Journal,' 1897, 1898. 'Diary,' 1897. 'Muter,' latest.—Chemist, 1, Redburn Street, Chelsea.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Allen, Ayrton, Bird, Brunt, Burroughs, Butcher, Campkin, Chesworth, Church, Cope, Cracknell, Cullen, Davis, Ellis, Evans, Ferrall, Ford, George, Goodess, Headland, Hewlett, Hill, Houghton, Hutchison, Jesper, Kinton, Lansdown, Lloyd, Nassar, Pilkington, Percy, Powell, Prince, Rajasundera, Ransom, Ray, Reynolds, Rook, Saunders, Shapland, Sprott, Taylor, Watson, Whineray, Williams, Woodward, Woolley, Wootton, Wyatt.

Obituary.

TALBOT.—On March 30, at the residence of his daughter, 17, Park Road, Seacombe. Cheshire, John Hind Talbot, formerly a pharmaceutical chemist, Liverpool. Aged 90. Mr. Talbot was a well-known Liverpool chemist, having carried on business in St. James Street for half a century. He was a man of wide reading and gentlemanly bearing, and won for himself many friends. Although retired into private life for some twenty years, he continued to take much interest in the Pharmaceutical Society and the trade generally. Indeed, notwithstanding his advanced age, the energy and vigour of his mind remained unimpaired to the last.

GORLE.—On April 6, Frederick John Gorle, chemist and druggist, Staines. Aged 73.

Calendar for the Week.

Sunday, April 16. 2nd after Easter. Sun rises 5.5; sets 6 56.

Monday, April 17. Sun rises 5.3; sets 6.57.

EDINBURGH DISTRICT CHEMISTS' GOLF CLUB.—The Spring Holiday Competition will be held at North Berwick, and the Gibson Handicap Medal, Captain's and Club Prizes will be played for. Train leaves Waverley Station at 7 a.m. Those who cannot come by this train may do so by the 9.5. Members of the Club who intend going are requested to inform the Secretary—Mr. W. Charles Baker, 13, Dundas Street, Edinburgh—at once.

Tuesday, April 18. ☽ 10.43 A. Sun rises, 5.1; sets 6.59.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.—Annual Dinner.

LEICESTER CHEMISTS' SOCIAL UNION, White Hart Hotel, Haymarket, at 8.45 p.m.—Annual Dinner.

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, London, W., at 8 p.m.—Apparatus for Half-Tone Process Work.

Wednesday, April 19. Sun rises 4 59; sets 7.0.

PHARMACEUTICAL SOCIETY, 36, York Place, Edinburgh, at 8.30.—Evening Meeting (see page 351).

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover Square, W., at 8 p.m.—"The Bioplasm of Man and the Higher Animals and its Influence in Tissue Formation, Action, and Metabolism," by Professor L. S. Beale.

WESTERN CHEMISTS' ASSOCIATION (OF LONDON), Westbourne Restaurant, 1, Craven Road, W., at 8 30 p.m.—Musical and Social Evening.

Thursday, April 20. Sun rises 4.57; sets 7.2.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m.—Papers by Messrs. W. J. Sell and H. Jackson, P. C. Ray, W. T. Lawrence, D. L. Chapman, F. H. Howles and J. F. Thorpe, E. Divers and M. Ogawa, and E. Divers and S. Hada.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, London, W., at 9 p.m.—"The Hygiene of the London Streets," by T. A. Ellwood.

LIVERPOOL CHEMISTS' ASSOCIATION, Exchange Station Hotel, at 7.15 p.m.—The Jubilee Dinner.

ROYAL INSTITUTION, Albemarle Street, London, W., at 3 p.m.—"The Atmosphere," by Professor Dewar.

Friday, April 21. Sun rises 4.55; sets 7.4.

ROYAL INSTITUTION, Albemarle Street, London, W., at 9 p.m.—"Structure of the Brain in Relation to its Functions," by Dr. F. Walker Mott.

Saturday, April 22. Sun rises 4.53; sets 7.6

Advertisement.

(Received too late for Classification).

BRIGHTON.—Wanted, a Qualified ASSISTANT in a good-class retail and dispensing business. Apply, with particulars, to W. H. GIBSON, Metropole Pharmacy, King's Rd., Brighton.

POLITICAL GOSSIP.

Fourteen Pages of Amendments await the consideration of the Standing Committee on Trade in respect of the Government Food and Drugs Bill. The first meeting of the Committee was held on Thursday last under the presidency of Mr. J. E. Ellis, M.P. for Rushcliffe, Notts, who has his hands pretty full with tho fifteen members who have been added to the Committee to contribute to the adequate discussion of the principles involved in food and drug legislation. Most of the added members have signified their desire to amend the Bill by placing notices upon the paper; and two of them, namely, Sir C. Cameron and Mr. Kearley, give conspicuous promise of special activity in the way of dividing the Committee during its sittings. The names of the additional members are: Mr. V. Cavendish (West Derbyshire), Sir Walter Foster (Ilkeston). Mr. Lewis Fry (Bristol, N.), Mr. Hobhouse (Somerset, E., a Parliamentary draftsman), Mr. Heywood Johnstone (Horsham), Mr. Brynmoor Jones (Swansea, a former County Court judge), Mr. Kilbride (Galway), Mr. Grant Lawson (Thirsk, Deputy Chairman of Ways and Means), Sir John Leng (Dundee, who is largely connected with the newspaper Press), Mr. E. Llewellyn (Somersot, N.), Mr. Lopes (Grantham), Mr. Nicol (Argyllshire), and Mr. John Redmond (Waterford). The preponderance of the legal element in the Committee is inevitable in a House where every other man is or has been a lawyer, and the natural corollary is the absence of any direct representation of the views of chemists and druggists.

The Bill to license an iniquity—in other words, the Pharmacy Bill (House of Lords)—still awaits its second reading, but no date has yet been assigned for that stage, nor has any opposing notice appeared on the paper. The Watch Committee of the Pharmaceutical Council is understood to be fully justifying its name, but we believe there is a fairly general impression in official circles that no useful action can be taken whilst the Bill is in the House of Lords. It is to be hoped that the Council may not be embarrassed in the official work of opposition by individual activity in approaching members of Parliament. At the same time, though the Watch Committee may doubtless safely rely upon the loyalty of the members of the Society to refrain from precipitate action, in return the members will probably want to feel that their leaders mean business, or they may be tempted by the blandishments of some journalistic "Short" to abandon tho protection of "Codlin."

The Shops Bills appear to be in a bad way again. Sir Charles Dilke's Bill, which seemed to have been launched under a lucky star this Session, and achieved the distinction of reaching the nitiation of its second stage as far back as February 21, is still awaiting a chance to resume the consideration so rudely adjourned by the clock. Mr. Sydney Gedgo (Walsall), a solicitor and a icensed preacher, still maintains his block on the Bill, and its chances on Tuesday last were still further diminished by a "count out." Misfortune dogs Sir J. Lubbock's Early Closing Bill this year, as it did last. It is becoming as familiar in Parliamentary circles as the Deceased Wife's Sister, and no ono seems to have any more enthusiasm left for it. Its second reading on Tuesday seemed to be imminent, for it was the first order of the day, but the lack of forty members killed the chance.

Mr. R. Cox, the M.P. for South Edinburgh, and sole partner of the firm of J. and G. Cox, Ltd., Edinburgh, has been obliged to temporarily abandon his Parliamentary duties owing to ill health. He was formally granted six weeks' leave of absence this week on the motion of Sir W. Walrond.

Point of View is Everything.—If one happens to be a Chancellor of the Exchequer and to want money, it is legitimate, nay, oven praiseworthy, to tax company promotion; but if one happens to be merely a President of the Pharmaceutical Society striving to remedy a legal anomaly, any attempt to touch a company becomes a grave national evil—an interference with commercial dovelopment. Sir Michael Hicks Beach, driven by the inexorable exigencies of Finance, has not hesitated to impose an increase of 150 per cent. on the *ad valorem* stamp duty chargable on companies' capital, and he has, moreover, justified his conduct by claiming that it would tend to check the ovil of overcapitalisation. Now this evil is one of the phrases of modern commercial development, and if it be reasonable to restrain it, logic must concede that the demand for restricting another phase—that of the evasion of the Pharmacy Acts—cannot be so unjustifiable as some would endeavour to make out.

The Budget, which is given in brief below, is sensational rather on account of the proposals it did not contain, than in respect to the items actually included. Instead of turning to tobacco, beer, or bicyles to furnish the means of meeting an estimated deficit of £700,000, or arousing the angry passions in pharmaceutical breasts by tampering with the spirit duties, the Chancellor of the Exchequer has pounced upon the reckless company-monger and the inoffensive consumer of light wines. On the whole there does not seem to be much to grumble about, for sympathy is quite thrown away on corporate entities, and the average Briton will not be heavily hit by the surtax on wines. Still there is room for surprise that a minister has been found bold enough to lay even a light finger upon company promotion.

The Budget in Brief.—The following new Stamp Duties are imposed: (*a*) 5s. per cent. on the nominal value of foreign or colonial bonds, stocks or shares, or documents representing such securities; (*b*) 2s. 6d. per cent. on capital or debenture stock created under statute by corporation or company. The increased duties are (*a*) from 2s. to 5s. per £100 on companies' nominal value, and (*b*) from 1d. to 6d. on letter of allotment and renunciation. The additional wine duties are as follows:—(*a*) By adding 6d. per gallon, raising the duty to 1s. 6d. per gallon not exceeding 30 degrees of proof, 3s. between 31 and 42 degrees, and the surtax on sparkling wine to 2s. 6d. per gallon; (*b*) by imposing a tax of 3s. per gallon on still wine imported in bottle.

BRADFORD AND DISTRICT CHEMISTS' ASSOCIATION.

The members of this Association held their second annual dinner at the County Restaurant, Bradford, on Tuesday, April 18. The chair was occupied by the President, Mr. A. H. Waddington, and was supported by the Mayor (Mr. W. E. Aqkroyd), Messrs. Forster and Gledhill, of the Dewsbury Association; Mr. Priestley, of the Halifax Association; Mr. Yewdall, of the Leods Association; Mr. Geo. Rimmington and Mr. S. N. Pickard (Vice-Presidents), Mr. R. W. Silson (Hon. Treasurer), and Mr. J. A. Mitchell (Hon. Secretary).

The loyal toasts having been honoured, Mr. Geo. Rimmington proposed the toast of

The Pharmaceutical Society.

He said he was afraid that the Society was in rather troubled waters just now in regard to the Pharmacy Bill, which was before the House of Lords. He was afraid that company pharmacy had come to stay with them, without doubt, but if they could persuade Parliament to insist that one or more of the directors should be a qualified man, they would get as much as they could possibly expect Parliament to grant.

Mr. Waddington, in responding, said the Society was undoubtedly in a difficult position at the present time, but he had confidence that it would get out of that difficulty. It had men at the head of its affairs who were quite capable of conducting the business of the Society and bringing it to a successful issue. They had been misled certainly, for the Lord Chancellor had not carried out what he had led them to expect that he was going to do. It was to be regretted if it were correct, as had been stated—and they could not doubt the truth of it—that the Lord Chancellor was himself personally interested in company pharmacy. It was a great pity that a man occupying a position such as that of the Lord Chancellor should allow himself to be associated with class legislation in which he was personally and pecuniarily interested. He thought it was the greatest anomaly that a man who had to qualify by passing such an examination as the chemist and druggist had to pass should be placed at the tender mercies of company laws, when a person occupying the position of a midwife was protected by the Lord Chancellor's other Bill, which was introduced into Parliament the same evening. The Society would be successful in its purposes in so far as it had the support of the members of the trade. It was the absolute duty of every qualified person—whether he was at present in business, or was now an assistant and hoping to be in business in the future—to join the

Society and give their support to the only body which could do anything for the trade of the chemist and druggist. The subscription was so small that there was absolutely no financial excuse for not joining the Society. He thought the visit from Mr. Newsholme, Vice-President of the Society, a few weeks ago had put a good deal of life into the members who were in business in Bradford.

Mr. GLEDHILL also responded, and said he hoped the Pharmaceutical Society was at last becoming aroused to the position, and was going to show a more progressive spirit than had hitherto been the case.

Mr. FORSTER proposed the toast of

THE BRADFORD ASSOCIATION,

and mentioned that the formation of the Dewsbury Association, of which he was President, had been the outcome of his visit to Bradford, which had resulted in his going back to Dewsbury with a determination that he would join Bradford unless an association were formed in his own town. There might be some who would think that the Dewsbury Association had developed rather too quickly. They took a part in the Beecham controversy that the world got to hear of. Then, again, they got a little bit at loggerheads with the apothecaries; but as to that, he should say that when they found they had made any remark which was unjustifiable they withdrew it and apologised. He thought there was a great value in their associations, which enabled them to work closely together for each other's advantage.

Mr. J. A. MITCHELL responded to the toast. He pointed to that gathering as a substantial proof of the value of their Association in the social sense, observing that twelve years ago they would hardly have cared to meet each other. It must necessarily be that combinations were more successful than individuals could be, and he thought they had proved that in the experience of their own Association during the year. The membership of the Association now numbered fifty-one ordinary members and eight visiting members. Their average attendance at meetings was fifteen or twenty, but he thought that was a very poor average, and that members ought to take a greater interest in the proceedings of the Association. He sincerely hoped that they would try to do so in future.

Mr. PICKARD proposed the toast of "The Kindred Associations." He said much was said about the dilatoriness of the Pharmaceutical Society, and about it not being progressive; but he did not blame the Society at all, what it had been unable to do had been in consequence of the insufficient support which it had received from the trade generally throughout the country. Until the Society had better support from the trade it could not be expected to do all that would otherwise be possible.

Mr. BRIERLEY (Halifax) responded to the toast and expressed fraternal sentiments.

The toast of "The City and Trade of Bradford" was proposed by Mr. R. W. SILSON in a humorous speech, and responded to by the MAYOR of Bradford, who gave much interesting information in regard to the municipal circumstances of the city.

The proceedings shortly afterwards terminated. The musical part of the programme was contributed to by Mr. Hanson, Mr. Severs, Mr. Moulson, and Mr. Vallance.

SCARBOROUGH CHEMISTS' ASSOCIATION.

The members of this Association held a dinner on Tuesday, April 11, at the Balmoral Hotel, Mr. T. W. LONGDIN in the chair. After dinner and the usual loyal toasts, the toast of

The Scarborough Chemists' Association

was proposed by Mr. E. R. CROSS, who briefly reviewed the origin and work of the Association, and threw out various suggestions with regard to its future aims.

Mr. R. GILCHRIST, Secretary of the Association, replied, and said that it was perhaps as well to move slowly rather than to expend all their energy in the first year. He trusted the Association would go in for some educational work, and was himself willing to give instruction in systematic botany to any assistants or apprentices who cared to avail themselves of his offer.—The toast of the

Pharmaceutical Society

was proposed by Mr. J. E. BROWN, who paid a tribute to the generosity and benevolence of the parent body.

Mr. GEORGE WHITFIELD, the local secretary for Scarborough, replied to the toast. He said he thought that all causes and excuses for holding aloof from the Society had now ceased to exist, and that it was the duty of every registered chemist to join and regard his subscription as a necessary expense.

Mr. W. R. EYRE subsequently proposed the "Health of the Chairman," and Mr. LONGDIN suitably responded. Messrs. R. M. Hill, H. Jones, H. W. Helliwell, H. Williamson and Pearson contributed to the enjoyment of the evening by songs, etc.

ENGLISH NEWS.

Mr. C. U. Ind, chemist and druggist, of Margate, has been awarded the Musgrove Scholarship (for two years) and first place in honours (anatomy and physiology) at St. Thomas's Hospital, London, and has also passed the second professional examination of the Royal College of Surgeons, England, and of the Royal College of Physicians, London.

Royal Institution.—A general monthly meeting of the members of the Royal Institution was held on April 10, his Grace the Duke of Northumberland, President, presiding. The following were elected members: Mrs. Aston, Mr. T. O. Belshaw, Mr. W. Hall, and Mrs. F. McClean. The special thanks of the members were returned to Sir Benjamin Baker, K.C.M.G., for his donation of £50, and to Nobel's Explosives Company for a donation of £105 to the Fund for the Promotion of Experimental Research at Low Temperatures. The first Hodgkins gold medal given by the Smithsonian Institution has been conferred on Professor Dewar for his work on the liquefaction of air.

Chemists' Shop Destroyed by Fire.—One morning last week, while business was in full swing, the extensive premises of Messrs. Tribe & Lamb, chemists and druggists, High Street, Chatham, took fire, and an exciting scene followed. The fire brigade was quite powerless to prevent the building being practically gutted. The fire originated in a store-room, but its cause is unknown.

St. Thomas's Hospital Medical School.—The following scholarships, medals, and prizes have been awarded:—*Fifth-Year Students*: Mr. James Gaff, the Treasurer's Gold Medal; Mr. R. J. Horton-Smith, the Wainwright Prize; Mr. H. T. D. Acland, the Cheselden Medal. *Third-Year Students*: Mr. C. N. Sears, the First College Prize (£20) and the Peacock Scholarships (£38 10s.), second tenure; Mr. A. F. Miskin, the Second College Prize (£15). *Second-Year Students*: Mr. C. U. Ind, the Musgrove Scholarship (£38 10s.); Mr. W. H. Harwood Yarred, the First College Prize (£20); Mr. J. E. Adams, the Second College Prize (£10). *First-Year Students*: Mr. G. C. Adeney, the Tite Scholarships (£27 10s.); Mr. C. M. Roberts, the First College Prize (£20); Mr. C. H. Latham, the Second College Prize (£10).

New Pathological Laboratory in Sheffield.—With the beginning of the summer session classes will be opened the new Pathological Laboratory of the Sheffield University College, which has just been established and is in course of equipment. The subjects intended to be taught and investigated are of an important character, and the new department will doubtless prove one of the most useful in connection with the College. The College buildings did not afford space for the necessary extensions of the medical department, and separate rooms have been taken in West Street. They include a pathological museum, a large laboratory for students, and two private laboratories, one for pathology and one for bacteriology. The latter is the most interesting from a public point of view, as it is to be made use of for "town work" as it is called. Within recent years it has been found that in the cases of both typhoid fever and diphtheria great assistance can be given to medical men by bacteriological methods, not only in facilitating diagnosis, but in making it at an earlier period than ordinary clinical signs and symptoms would allow. As medical men themselves cannot be expected to keep up elaborate laboratories, it is becoming common to establish municipal laboratories, where the municipalities undertake this work. Although the Sheffield Corporation has not established this new laboratory, an arrangement has been come to between them and the College authorities, by which all Corporation health work will be carried on there, as well as the teaching of bacteriology, as part of the College work. Dr. Robertson, the Medical Officer of

Health for the City, is at the head of this laboratory, and Dr. Hector, now of Edinburgh, is to be the Demonstrator. Thanks to the generosity of Dr. Kecling, of Sheffield, the laboratory has been completely equipped at a cost of about £350, and before the department is opened a photo-micrographic room will be prepared, furnished with a very fine apparatus. The pathological department is also equipped with all the most modern improvements, and is under the charge of Drs. G. Wilkinson and Arthur J. Hall. The programme of the department will include classes not only for students, but for post-graduate men, and for the various diplomas of public health. It is also hoped to have classes eventually for brewers and possibly for veterinary surgery. The rooms, which are already partially equipped with instruments and apparatus, were thrown open to the members of the Sheffield Microscopical Society recently, and a good number availed themselves of the opportunity of looking round and hearing the explanations of the doctors in charge. Dr. Robertson demonstrated the latest methods of mounting and cultivating the bacilli of typhoid, diphtheria, and tuberculosis. Dr. Hall showed the working of much of the apparatus of the laboratory, describing, among other things, the cutting up of specimens by means of the new rock microtome. Dr. Wilkinson demonstrated some methods of staining microscopic sections in general use. Sections were stained in picro-carmine and in hæmatoxylin-eosin, and afterwards mounted by the members present. The staining of micro-organisms by Gram's method was afterwards demonstrated.

Food and Drugs Act Prosecution. — Ground Ginger: Ernest Broadbent, shopkeeper, Thurlstone (Yorks), was summoned at the Barnsley (West Riding) Police Court on January 9 last for having sold, on November 30, 1898, a quantity of ground ginger which was certified by Mr. A. H. Allen, public analyst for the West Riding, to contain not more than 50 per cent. of genuine ground ginger and not less than 50 per cent. of ground ginger which was exhausted of its pungent principles. The case was adjourned on that occasion in order that a sample of the ground ginger might be sent to Somerset House for analysis, as it was alleged by the defendant's solicitor that he could not obtain an independant analysis because there was a league of public analysts who would not appear against each other. The case came on for hearing again on Monday, April 10, when the results of the Somerset House analysis were given as follows :—

Soluble in 90 per cent. alcohol.....	4 56 per cent.
Soluble in ether—volatile oil	0·43 ,,
Soluble in ether—fixed oil and resin	4·43 ,,
Soluble in alcohol after ether	1 08 ,,
Soluble in water after alcohol and ether	3 70 ,,
Total ash.....	2·33 ,,
Ash soluble in water	1·03 ,,
Loss on drying sample at 212° F.	12·70 ,,

The certificate went on to state that the microscopic and physical characters of the sample indicated that it belonged to one of the lower grade descriptions of commercial ginger. The amounts soluble in alcohol and ether respectively were equal to that found in genuine ginger of that class, and afforded no evidence that the sample had been exhausted with alcohol. The proportions of matter soluble in water and of ash solublo in water were lower than was found in unwashed ginger, but as those amounts were easily reduced by the ordinary washing of the ginger which usually occurs before grinding, they did not afford evidence that the sample in question was a mixture of genuine ground ginger and ginger exhausted of its pungent principles. The microscopic and analytical results were consistent with the conclusion that the sample in question was a "washed" Japan or similar low grade ginger.—Upon receipt of the Somerset House certificate, the prosecution was asked to withdraw from the case, but it was contended that the Government analysts practically corroborated Mr. Allen's certificate which was asserted to be correct; moreover, if the defendant had been the real defendant, the case might not have gone on, but the real defendants being a firm of spice merchants, Messrs. Peek Bros. and Winch, Ltd., London, it was to the public interest that the case should not be dropped, as the firm should be called upon to supply pure ginger.—Mr. Allen flatly denied that there was any league amongst analysts with regard to appearing against each other. He did not agree with the conclusions of the Somerset House analysts, although their figures corroborated his own. He knew that Japan ginger might be robbed of its goodness by negligent washing, and the sample in question was a particularly bad case.—Dr. Bernard Dyer, Mr. Otto Hehner, and Mr. E. Bevan all gave evidence to the effect that the Somerset House certificate supported Mr. Allen's results, Dr. Dyer expressing the opinion that the figures condemned the sample.—For the defence it was contended that in face of the Somerset House certificate the case must be dismissed.—The magistrates dismissed the case, each party to bear its own costs.—The chairman subsequently remarked that they considered it a proper case to be brought forward.

Plymouth, Devonport, Stonehouse and District Chemists' Association.—The members and friends met together at Risdon's Restaurant, George Street, Plymouth, on Wednesday evening, the 12th inst., to bid farewell to Mr. O. A. Reade, who is shortly leaving the neighbourhood. Mr. Reade, who has been Senior Dispenser for some years at the Royal Naval Hospital, Stonehouse, has just been appointed to the important position of Medical Storekeeper and Senior Dispenser at Haslar Hospital. During the last three years he has devoted considerable time and attention in conducting materia medica and botany classes for the junior members of the Association, and with very marked success. One of the students has recently secured the silver medal of the Pharmaceutical Society for the best descriptive collection of British flora, and two other pupils on previous occasions obtained bronze medals for similar collections. Supper having been partaken of, Mr. Maitland, who presided, in the unavoidable absence of the President, Mr. Park (engaged on Council business in London), proposed "The Queen." Mr. Barge (Chairman of the Educational Committee) then rose, and, after alluding in chaste and eloquent terms to the valuable services which Mr. Reade has rendered to the Association, and the great loss which it will sustain by his removal, requested him to accept a table reading lamp, as a token of the esteem felt for him by the members, and in recognition of the aid he has so freely rendered. Messrs. Reynolds and Hellyer (pupils in the classes) on behalf of the other members and of themselves, expressed their regret at his leaving the locality. Mr. Reade, in responding, spoke in the highest terms of commendation of the general conduct of the students, which had been a source of pleasure to him, and had materially assisted in securing such good results. He thanked the members very warmly for the handsome and useful present which they had made to him, which he should value exceedingly.—The reading lamp is a handsome polished brass standard fitted with incandescent burner and reflecting shade, and bears the following inscription :—"Presented to Mr. O. A. Reade, M.P.S., F.L.S., as a token of esteem by the members of the P.D.S. and District Chemists' Association." Messrs. Kinton Bond, Turney, Maurice, Swainson, Lamble, and other friends gave songs and recitations, and a very enjoyable evening was spent.—At the monthly Committee Meeting held on Tuesday, the 18th inst., it was resolved to hold a general meeting on Tuesday morning next to decide what steps the Association should take with regard to the forthcoming Pharmaceutical Council Election.

Improperly Labelled Poison.—A jury sitting at Aston (Birmingham) on Monday to inquire into the death of a young school teacher, named Florence Emily Park, found that the deceased committed suicide whilst temporarily insane by swallowing oxalic acid. A companion gave evidence to the effect that both the deceased and herself obtained the acid from a chemist for the purpose of cleaning hats. It had a white label upon it bearing the words "Oxalic Acid," but was not labelled "Poison." The jury attached to their verdict a rider expressing strong indignation at the laxity prevailing in the district with regard to the sale of oxalic acid without the poison label.

Carbolic Acid Lotion in Mistake for Medicine.—At an inquest held at Thorne on Thursday, April 13, relative to circumstances through which the wife of Mr. Charles Garrett, a farmer in Tinkle Street, died on the previous day, evidence was given to the effect that deceased had taken some lotion handed to her by her husband in the belief that it was an internal medicine.—Dr. William Gratton Mortimer said he went to see Mrs. Garrett at once on receipt of an urgent message. He used a stomach tube and administered remedies, but his patient died in a few minutes. The lotion was practically undiluted carbolic acid, and he had been in the habit of personally applying it to one of the deceased's legs, in the proportion of two tablespoonfuls to a quart of water. The carbolic acid was supplied by him on the previous Monday, and he used some of it on the following day. The bottle (produced) had

a label "Poison" upon it. He had no doubt the cause of death was due to the taking of carbolic acid.—The jury's verdict was to the effect that death resulted from carbolic acid, accidentally administered.—The Coroner entirely exonerated Dr. Mortimer from blame; he had properly labelled the bottle in which the lotion had been sent out.

Western Chemists' Association (of London).—A successful musical and social evening, in connection with this Association, was held at the Westbourne Restaurant, on Wednesday, April 19, the President, Mr. J. F. Harrington, in the chair. A very good programme had been arranged, and was highly appreciated by a representative company of members and friends, the following artistes taking part: Messrs. Wm. J. Alderson, Worsley, Tennant, Goulding, S. A. Walton, Frank Windle, F. Andrews, Pickford, and Clarke. Instrumental music was furnished by Mr. C. Hall-Woolnoth's well-known orchestra.

Wholesale Chemists' and Druggists' Cricket Championship.—We have received from the Hon. Secretary of the League the rules of the Challenge Cup Competition and the list of fixtures for the season 1899, from April 22 to September 23, inclusive.

The Mayor of Worcester, Mr. J. A. Steward, chemist and druggist, entertained a large and influential number of citizens and friends at a banquet on April 6, the guest of the evening being Earl Beauchamp, a member of the Town Council, to whom a hearty farewell was accorded, he having just been appointed Governor of New South Weles.

Leicester Chemists' Social Union.—The annual dinner of this Association was held at the White Hart Hotel, Leicester, on Tuesday, April 18, Mr. S. Cleaver in the chair. Amongst those present were the following chemists and assistants, Messrs. Thirlby, Goodess (Hon. Secretary), Hearnshaw (Treasurer), Clear, Rowe, Sturges, Hampton, Marfitt, Richardson, White, Elliott, Furnival, Ward, Brooks, Butler, Parry, Lewis Ough, F.C.S., and many others, about forty in all. Apologies for absence were received from T. H. Lloyd (President), A. Berridge, Hind, Ellmitt, Neale, Brett, Cadoux, E. H. Butler, Burford, F.C.S., Murray, Coates, Clark. This proved to be the best muster of chemists, and certainly the most enjoyable yet held, and a splendid repast was done ample justice to. After the loyal toast had been duly honoured, the Chairman, in a happy speech, gave a hearty welcome to those present, and called upon Mr. Goodess (Hon. Secretary) to give his report. This showed a record of items of which the Association might be proud. The Treasurer (Mr. Hearnshaw) showed a slight adverse balance due to him, accounted for by the smallness of the subscriptions (1s. only), and being his only means of income. A resolution was then unanimously carried to make the annual subscription for chemists in business, 5s.; assistants, 2s. 6d.; apprentices, 1s. A vote of thanks was passed to the retiring Committee, who were unanimously re-elected. The remainder of the evening was taken up by a capital programme of humorous sketches, songs, recitations, and instrumental items, in which the following took part:—Messrs. Goddard, Black, Tebbs (cornet); Furnival (violin); Dewson (pianist). Songs by Messrs. Cynlais Davies (medalist), Goodwin, Black, and Donnington; and a recitation by Mr. Hampton. Votes of thanks to Chairman, musicians, and Hon. Secretary were carried unanimously.

SCOTTISH NEWS.

Edinburgh District Chemists' Golf Club.—A competition for the Gibson Handicap Medal and club prizes was held on Monday, the 17th inst. (the Edinburgh Spring Holiday), over the famous North Berwick links. The weather conditions were perfect, and all thoroughly enjoyed the day's outing. Mr. James Stott was the winner of the medal and first prize; second, Mr. W. Charles Baker; third, Mr. George Robertson. After the competition the members dined together at the Royal Hotel, and in the afternoon played another round in friendly matches. After tea in the hotel some of the more enthusiastic went for a third round. In presenting the first and second prizes, Captain Robertson made a neat little speech, congratulating the competitors on the pleasant day they had had together. There was nothing better, he said, to drive business worries away than a game of golf, and he felt sure some of the friendships made on this and similar occasions would be life-long. He hoped there would be a larger turn-out at Leven in the autumn.

IRISH NEWS.

Mr. George D. Beggs, Vice-President of the Pharmaceutical Society of Ireland, was the recipient last week from the inhabitants of Dalkey of an illuminated address, accompanied by a handsome and valuable piano concerto, in recognition of his services for the past thirteen years as Honorary Secretary of the Dalkey Amusements Association. Dr. Wright, in presenting the testimonial, paid a high tribute to the ability and unremitting care bestowed by Mr. Beggs on the affairs of the Association. Mr. Beggs suitably replied.

Mrs. Payne, wife of Mr. J. C. C. Payne, J.P., President of the forthcoming British Pharmaceutical Conference, has been successful in securing a seat on the Belfast Board of Guardians as the representative for Dock Ward. Mrs. Payne, who is an extremely amiable and popular lady, has always evinced a practical interest in the welfare of the poor, and will be a decided acquisition to the Board. With one other exception the lady candidates on this occasion were unfortunate at the polls.

Pharmaceutical Society of Ireland.—At an evening meeting of the Society, held at Dublin on the 10th inst., Mr. R. J. Downes, referring to the Lord Chancellor's Pharmacy Bill, advised those present, if they were not clear as to the issues raised, and as to their duty to read the articles in the *Pharmaceutical Journal* for April 8, which he described as clear, logical and moderate. Members were not to take the organ of the Irish Society as representing the views of its Council, and he thought it was unfortunate that the editorial department of the *Chemist and Druggist* failed to appreciate the position. They would find in the "penultimate paragraph" of a letter drafted by the editor for the use of chemists and druggists who desire to write to Members of the House of Lords an absolute giving away of the principle for which they were contending, that of qualified proprietorship. To admit that the qualification of the directors of a company would meet their case would be to shift their ground. If they were to accept that view it would be better for the existing Act to be repealed.

Pharmaceutical Society of Ireland.—Pharmaceutical Assistant Examination: Mr. W. M. Scott has passed. Three candidates were rejected. Registered Druggist Examination: Messrs. C. B. Hamilton, W. J. Hamilton, M. McCabe, R. McCausland, T. H. Richardson, T. T. Soden, and T. Unsworth have passed. Five candidates were rejected. Pharmaceutical Licence Examination: Messrs. J. Hartrey, J. M. Torrens, S. V. O'Connor, W. Gibson, A. E. Pepper, and J. Kissane have passed. Six candidates were rejected.

Calendar for the Week.

Sunday, April 23. 3rd after Easter. Sun rises 4.50; sets 7.7.

Monday, April 24. Sun rises 4.48; sets 7.9.

SOCIETY OF CHEMICAL INDUSTRY, Burlington House, Piccadilly, W., at 8.30 p.m.—"The Relations of the Society to Chemical Engineering and to Industrial Research," by George Beilby.

Tuesday, April 25. ○ 7.22 A. Sun rises 4.46; sets 7.10.

NORTH-EAST LANCASHIRE CHEMISTS' ASSOCIATION, Blackburn.—Address by Mr. J. Rymer Young, on "Pharmaceutical Politics."

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—A Demonstration of the Making of Glass Diaphragms, thin to Newton's "very black" stage, by Thomas Bolas.

Wednesday, April 26. Sun rises 4.44; sets 7.12.

Thursday, April 27. Sun rises 4.42; sets 7.13.

CHEMISTS ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—Musical and Social Evening.

ROYAL INSTITUTION, Albemarle Street, London, W., at 3 p.m.—Professor Dewar on "The Atmosphere."

Friday, April 28. Sun rises 4.41; sets 7.15.

ROYAL INSTITUTION, Albemarle Street, London, W., at 9 p.m.—Professor C. A. C. Wilson on "Some Features of the Electric Induction Motor."

Saturday, April 29. Sun rises 4.39; sets 7.17.

Trade Notes.

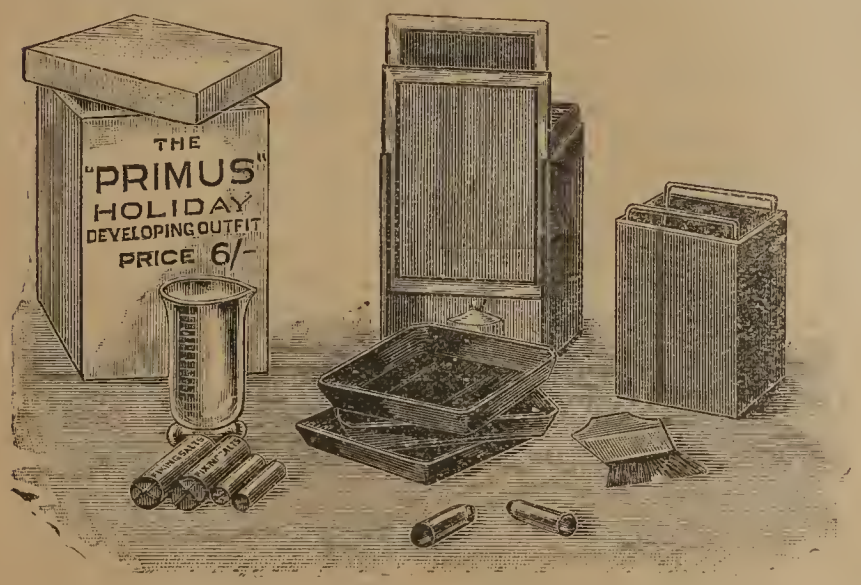
Messrs. Wyleys, Limited, Coventry, send a copy of the fifth edition (1899) of their priced catalogue of medical and pharmaceutical specialties. Numerous formulæ for new combinations of drugs have been added, the section devoted to surgical instruments has been enlarged, and particulars are given of instruments, etc., for aseptic vaccination, according to the new regulations of the Local Government Board. Official preparations have been altered in accordance with the B.P., 1898, and prices corrected to the present market values, and altogether it has been thoroughly revised and brought up to date.

Poison Regulations, 1899.—To meet the wishes of their customers, Messrs. Evans, Gadd and Co., of Bristol and Exeter, are arranging to put all scheduled liquid poisons in special ribbed bottles, which will conform with the regulations, and may be used as stock vessels.

Messrs. Burroughs, Wellcome & Co. send samples of "Tabloid" Colocynth Compound and "Tabloid" Aloes and Iron. These products are included in a series of "Tabloid" B.P. pills which the firm is preparing. Each preparation in this new series represents in dosage and active ingredients the corresponding pill of the British Pharmacopœia, 1898. This series includes, in addition to the remedies mentioned, compressed preparations of aloes and myrrh, blue pill, colocynth and hyoscyamus, ipecacuanha and squill, lead and opium, and rhubarb compound, each containing 4 grains.

PHOTOGRAPHIC NOTES.

"Primus" Holiday Developing Outfits.—Messrs. W. Butcher and Son, Blackheath, S.E., have introduced a new and very convenient developing outfit, which should prove exceedingly useful and make a good selling article at this time of the year when the holiday season is fast approaching. The outfit includes: A dark room lamp, made in japanned tin with sliding fronts, each ruby and canary, with special power night-light; three metal dishes, black japanned tin; rack and tank, for holding six plates, the tank being provided with syphon for effective washing, while the rack may also be used for draining the



negatives; a four-ounce glass, cylindrical, graduated measure; two finger stalls, of indiarubber, for protecting the fingers; two developing cartridges, sufficient for three dozen plates (three cartridges are supplied with the half-plate outfits); two fixing cartridges, sufficient to make sixteen ounces solution (three cartridges are supplied with the half-plate outfits), and a dusting brush, to be used before loading dark slides and before development. All the articles pack inside the dark room lamp, which is placed in a cardboard box for protection. Full instructions are also given as to the use of developing cartridges, etc. Prices: quarter-plate, 6s., half-plate, 8s.

Messrs. Taylor, Taylor, and Hobson, Leicester, send a copy of their new catalogue of lenses. This catalogue is somewhat better than a mere list, containing as it does much valuable information concerning the construction and use of lenses. A new form of tables of conjugate foci is added to the various articles which have appeared in former issues, while the paper on "The Principles of a Lens Action" has been extended. In addition to the Cooke portrait lenses, smaller Cooke lenses, Series V., are now included, which, with the same aperture as the best lenses of the rapid rectilinear type, compare with them as to price. The Series III., with large apertures, are of course retained. A new focussing mount, which is simpler and less costly, neater, and claimed to be more durable than the ordinary style of focussing mount, is included, also the Cooke extension lenses.

Messrs. Harrington Brothers, 4, Oliver's Yard, City Road, E.C., send a copy of their April wholesale price list of chemicals for photography, photo-mechanical processes, radiography or Röntgen's experiments, and salts of the rare metals used for incandescent light purposes. Photographic solutions of all kinds are prepared and bottled to suit the requirements of dealers. The firm's own photographic chemicals are put up in neatly-capped white glass bottles of all sizes and labelled with dealer's own label or with plain labels as required. Special prices are furnished on application.

MARKET REPORT

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

April 20, 1899.

Business has been somewhat restricted during the past week while, with the exception of a further decline in the price of Sulphate of Quinine, a reduction in price of Quicksilver and renewed firmness in price fo both Rio and Carthagena Ipecacuanha, there are practically no changes of any importance to report. Mercurials have been reduced in consequence of reduction in price of Quicksilver. Iodides and Bromides are firm at unchanged values. Glycerin quiet but steady. Cod-Liver Oil the turn harder, without, however, any perceptible movement in an upward direction. Chief interest of the week has again centred in Quinine, but with the exception of unfortunate weak-kneed holders, who have been unloading at an apparent loss of about 6d. per oz, the actual transactions in the article have been quite limited, and the interest has been mostly on part of the lookers on, who, proverbially, "See most of the game." What the eventual upshot will be it is difficult to say. Camphor is quiet. Cocaine expected to be dearer. Acetanilide and Phenacetin weak. Sulphonal firm. Antipyrine and Phenazone unchanged. Acid Citric, Acid Tartaric and Cream of Tartar quiet. The following are the prices actually ruling for articles of principal interest.

Acetanilide—Is very quiet, 11d. per lb. being still the combined makers' prices for 5 cwt. lots.

Acid Carbolic—Is quiet but very steady in price, best makes being quoted 6⅝d. to 6¾d. per lb. for the 34-35° *ice crystal* in large bulk packing; 39-40° *ice crystal*, 7¼d. to 7½d. per lb.; 39-40° *detached crystals* (B.P. quality), 8¼d. to 8½d., according to quantity, packing, etc. *Crude*: 60° F., 2s. 1d. per gallon; 75° F., 2s. 7d. per gallon. *Liquid*: 95-98° of pale straw colour, 1s. 2d. to 1s. 3d. per gallon in 40-gallon casks.

Acid Citric—Is very quiet at nominally 1s. 2¾d. to 1s. 3d. per lb. for *crystals* on the spot in 5-cwt. casks.

ACID TARTARIC—Unchanged at 1s. 1d. per lb. for *English* and 1s. 0½d. per lb. *c.i.f.* for *foreign*.

ALUM—Is quoted £5 7s. 6d. to £5 10s. for loose *lump* and £6 to £6 5s. per ton for *ground* in bags.

AMMONIA COMPOUNDS.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb, according to quantity, packing, and make. *Muriate*: Chemically pure small crystals, 30s. to 32s. 6d. per cwt.; ordinary, free from metals, 25s. 6d. to 27s. 6d. per cwt. *Sal ammoniac*: Sublimed firsts, 35s. per cwt.; seconds, 33s.; crushed for batteries being quoted 2s. per cwt. more money. *Sulphate*, after being firm, is again somewhat easier at £10 17s. 6d. for grey 24 per cent., prompt, London; Hull, £10 16s. 3d.; Leith, £10 15s. Beckton terms, £10 12s. 6d. per ton. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb., according to quantity.

ANTIMONY.—*Regulus* is quoted £38 10s. to £39 per ton, and *crude Japan* (*black sulphide*) 24s per cwt.

ANTIPYRINE, KNORR, and PHENAZONE are steady at unchanged prices.

ARSENIC.—Steady at 18s. to 19s. per cwt. for *powder* and 34s. per cwt. for *lump*.

ASHES.—*Pot.*, 24s.; *Pearl*, 33s. per cwt.

ATROPINE—Very firm at unchanged price, viz., 15s. 6d. per oz. for the *sulphate B.P.*, and 17s. 10d. for the *pure*.

BISMUTH—Without change at 5s. per lb. for the commercial quality of the metal, the *subnitrate* being still quoted 5s. 1d. and the *carbonate* 5s. 8d. per lb.

BLEACHING POWDER (CHLORIDE OF LIME).—*English* make is still quoted £6 per ton.

BORACIC ACID.—Makers' prices are 28s. per cwt. for *powder*, and 26s. per cwt. for *crystals*.

BORAX.—*Crystals* are quoted 16s. 3d. per cwt., and *powder*, 16s. 9d.

BROMINE AND BROMIDES—Are unchanged at 2s. 2d. per lb. for *Bromine* in case lots (60 lb. in a case), 1s. 10d. per lb. for *Potass. Bromide*, 2s. 1½d. per lb. for *Sodii Bromide*, and 2s. 2d. for *Ammon. Bromide*.

CAMPHOR.—Market remains steady at unchanged prices, both for *crude* and *refined*.

CASTOR OIL—Is dull at £25 per ton for Belgian first pressing, on the spot; £24 10s. per ton, July-December second pressing, spot; £24 per ton ex-wharf. Hull manufactured, £25 to £25 10s. per ton, in barrels; 2⅛d. to 2⅛d. per lb., in cases, ex-wharf, London, for prompt delivery. London pressed, 25s. per cwt, in barrels. French, 25s. 6d. to 25s. 9d. per cwt.

CLOVES—Privately renewed depression prevails for *Zanzibar*; the limited sales comprise March-May and April-June delivery at 3⅛d. At auction the small supply of 46 bales *Zanzibar* were offered and 32 bales sold in small lots at steady rates; middling to good bright at 3¼d. to 3¾d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*: Commercial, 10d. per gallon; pure, 1s. 2d. to 1s. 3d. per lb. *Benzole*: 50 per cent., 7¾d. per gallon; 90 per cent., 7d. *Creosote*, 3½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 5d.; 90 per cent. at 190° C., 1s. 1d.; 90 per cent. at 190° C., 1s. 2d. per gallon. *Anthracene*: A, 4d. per unit; B, 3d. per unit. *Pitch*, 28s. per ton, *f.o.b.* *Tar*: Refined and crude, 12s. 6d. per barrel, 2d. per gallon.

COCAINE.—There is comparatively little doing in this article, makers' price remaining unchanged at 11s. 9d. to 12s. 3d. per oz. for best brands of the *Hydrochlorate salt* in 25-oz. tins, it being still asserted that there is every prospect of a furthes advance in price.

CODEIA—Firm at 12s. 3d. to 12s. 6d. per oz. for the *pure*, and 1s. per oz. less for the *Muriate*, *Phosphate*, and *Sulphate salts*.

COD-LIVER OIL.—The market is quiet but rather steadier at 60s. to 65s. per barrel, *f.o.b.*, for best new non-congealing *Norwegian* oil in tin-lined barrels of 25 gallons. It would appear that these prices hardly show the producers a satisfactory result, and were it not for accumulated stocks, especially of last year's oil, we should probably see an advance in price.

CREAM OF TARTAR—Is quiet at 75s. per cwt. for first white *crystals* on the spot, and 77s. to 78s. per cwt. for *powder*.

ESERINE (PHYSOSTIGMINE).—Makers are firm at 2s. per gramme for the *sulphate* and *salicylate*, and 3s. per gramme for the *pure*.

ESSENTIAL OILS.—Business has been practically *nil* since the holidays, and so far there is little sign of any revival.

GALLS—Are without change. *China* are quoted 57s. per cwt. on spot, and 55s. *c.i.f.* to arrive; *Japan*, 54s. per cwt. *c.i.f.*

GINGER.—At auction supplies of *Cochin* were again of good extent, and with a slow demand lower prices ruled. Of 1211 bags and 342 cases offered only 118 bags and 31 cases sold, fair medium native cut and scraped at 48s.; small, some medium, at 35s.; ends at 26s. to 26s. 6d; rough D's at 17s. 6d.; cuttings at 17s. to 17s. 6d. Of *Japan* 20 bags limed bought in at 19s. *Jamaica*, in fair supply, met a demand at steady rates; of 251 barrels, 151 sold, fine bold hard at 106s. to 107s. 6d., fair to good medium and bold at 73s. to 80s., fair medium some lean at 67s. to 70s., good ordinary at 64s. to 66s. 6d. *Rhatoon* at 60s. to 62s.

GLYCERIN.—Market is quiet, but steady at about £30 per ton for *crude* for refining purposes, while *English refined* is quoted 52s. 6d. to 55s. per cwt., and *German refined* 52s. 6d. to 60s. per cwt., according to brand, for the best white double-distilled chemically pure 1260° quality, in 56 lb. tins (2 or 4 tins in a case).

IODIDES AND IODINE—Are unchanged at 7½d. per oz. for commercial *Iodine*; 10s. 6d. per lb. for *Potass. Iodid.*; 11s. 10d. per lb. for *Sodii Iodid.*; 14s. 3d. per lb. for *Ammon. Iodid.*; 13s. 10d. per lb. for *Iodoform cryst.*, *pulv.*, and *precip.*, and 12s. per lb. for *Iodine resublimed*.

IPECACUANHA—Is firm, and dearer prices have been paid, up to 13s. per lb. for *Rio* and 9s. 6d. for *Carthagena*, for which latter quality holders now ask 10s. per lb. It looks as if price will be maintained for the present at least, as further shipments do not, so far, appear to be forthcoming.

MENTHOL.—Market is very quiet, and it would be possible to buy good dry white crystals at 7s. per lb., or even perhaps somewhat below this figure for 5-case lots.

MERCURIALS.—Following the fall in price of *quicksilver*, makers of *mercurials* have reduced their price 1d. per lb., their present quotations being as follows:—*Ammoniated* (*white precip.*), 3s. 2d. per lb.; *bichloride* (*corros. subl.*), 2s. 5d. per lb.; *chloride* (*calomel*), 2s. 9d. per lb.; *red oxide cryst.*, 3s. 1d. per lb.; *do.*, *levig.*, 3s. 1d.; *yellow oxide*, 3s. 2d. per lb.; *persulphate* (*white*), 3s. 2d. per lb.; *sulphide* (*black*), 3s. 1d. per lb.

MORPHIA—Quiet, makers' price being unchanged at 4s. 6d. per oz. for the *Hydrochlorate powder*, and 2d. per oz. more for the *Crystal salt*.

NITRATE OF SODA.—Refined is now quoted £8 12s. 6d. per ton, and ordinary £8 5s. per ton.

OIL OF MALE FERN (EXTRACT. FILICIS MARIS).—Makers quote 4s. 6d. per lb. for a really good and reliable quality.

OILS (FIXED) AND SPIRITS.—*Linseed* quiet. London spot pipes, £17 15s. to £17 17s. 6d.; barrels £18 2s. 6d.; May to August, £17 5s. to £17 7s. 6d.; September to December, £16 15s. per ton. Hull, spot naked, £16 17s. 6d.; May to August, £16 5s.; September to December, £15 12s. 6d. *Rape*, steady, ordinary brown spot, £20 15s.; May to August and September to December, £21. *Refined* spot £22 10s. *Ravison*, firm, naked spot, £16 15s. to £17; May to August, £17s. 2s. 6d. *Cotton*, quiet. London crude spot, £15 5s.; May to August, £15 7s. 6d. to £15 10s. *Refined*, spot, £16 15s. to £17 15s., according to make, etc. Hull naked refined spot, £15s. 10s.; May to August, £15 7s. 6d. *Crude*, spot, £14 15s.; May to August, £14 12s. 6d. *Olive*: Mogador, £30 to £31 per ton, Spanish £30 to £32 per ton. *Coconut* steady; Ceylon spot, £25 10s. to £25 15s. landed, April to June shipment £23 15s. per ton, *c.i.f.* Cochin spot £29 per ton landed, for arrival March to May or April to June shipment £26 per ton, *c.i.f.* *Palm*: Lagos spot £24 per ton. *Turpentine* after being depressed and weak has again recovered to 32s. 3d. to 32s. 6d. for American on the spot, 31s. 9d. May, 29s. 7½d. June, 27s. July, 26s. 7½d. September to December, while for delivery January to April 1900 27s. 4½d. to 27s. 6d. per cwt. is quoted. *Petroleum* dull, Russian spot 4⅞d. to 4½d. per gallon. American spot 5⅛d., water white 6⅛d. to 6¼d. per gallon. *Petroleum Spirit*: *American*, 8¼d.; *deodorised*, 9¼d. to 9½d. per gallon. *Lubricating Oil*: Pale American spot, 5s. 6d. to 7s. per gallon; black, 5s. to 5s. 9d.; Russian black, 5s. to 5s. 6d.; pale, 5s. 9d. to 8s. per gallon.

OPIUM—Has been in improved demand, and a fair business has been done in *Druggists'* and *manufacturing kinds* at firm rates. There have also been a few transactions in *soft shipping* at about the prices previously ruling. *Persian* remains very quiet at 10s. 6d. per lb. for medium quality, and 11s. per lb. for fine.

OXALIC ACID—Remains unchanged at 3d. to 3½d. per lb. nett. free delivered London.

PARAFFIN WAX—*Crude*, 1¾d. to 2d. per lb.; *refined*, 2¼d. to 3d. per lb.

PHENACETIN—Remains very weak, a good article being obtainable at 3s. 9d. to 4s. per lb. for both *crystals* and *powder*. *Bayer's* make in 1-lb. original bottles maintains its price of 6s. 1d. per lb.

Pitch—8s. per cwt.

Potash Compounds.—*Bicarbonate* unchanged at 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10d. per lb. *Chlorate*: Powder, 4d.; crystals, 3¾d. per lb. on the spot. *Permanganate* somewhat steadier at 52s. 6d. and 57s. 6d. per cwt. for small and large crystals respectively in 1-cwt. kegs. *Prussiate (Yellow)*: English, 8¼d. to 8½d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

Quicksilver.—Importer has reduced his price to £7 17s. 6d. per bottle, at which price a good business has been done. Secondhand offers at £8 16s. per bottle.

Quinine.—The course of this article has again been downward, and while makers have not further reduced their quotations, which remain at 1s. 6d. per oz. for the best *German* brands of *sulphate*, such as *B & S* and *Brunswick*, there have been sellers from second hand as low as 1s. 3½d., and even, it is reported, in isolated cases, at 1s. 3d. per oz, where the holder was both frightened and needy. The speculators who loaded themselves up with the article at 1s. 9d. and 1s. 10d. per oz. are now hardly "thinking themselves so clever as they thought they was." As far as can be judged, moderate purchases on basis of present value, say 1s. 4d. per oz, should not be far wrong. The two factors in the case remain the same, viz.—supply of bark and demand for quinine, and it is reasonable to assume that, while the speculators have so far showed themselves a little "too previous." there may still have been a quite solid reason for a more moderate improvement in the value of the manufactured article.

Rosin.—Strained is quoted 4s. 4½d. per cwt., ex-wharf.

Saltpetre—Is quoted 20s. per cwt. for *English* in casks and 1s. per cwt. more in kegs.

Shellac—Remains firm, with a hardening tendency, and with rather more business in TN, spot, 67s. to 68s., basis fair, and 67s. 6d. to 68s. per cwt., *c.i.f.*, April-June steamer shipment.

Soda Compounds.—*Crystals* unchanged at 52s. 6d. per ton in bags and 55s. per ton in barrels, ex-ship, Thames. *Ash*: £5 to £5 10s. per ton, according to percentage, etc. *Bicarbonate*: £7 to £8 per ton for the 97 per cent., and 19s. 6d. to 20s. 6d. per cwt. for the fully bicarbonated. *Bichromate*: 2¾d. per lb. *Caustic*: white, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. *Hyposulphite (Antichlor)*, 6s. 6d. to 8s. 6d. per cwt., according to make, quantity, and packing. *Iodide*: 11s. 10d. per lb. *Nitrate*: *refined*, £8 15s. per ton; commercial, £8 7s. 6d. per ton.

Spices (Various).—*Black Pepper*: No Singapore offered, Penang bought in at 5d. and Aleppy at 5¼d. *White Pepper* in small supply and also all bought in, Singapore at 8d. to 9d., and Siam at 9d. *Chillies* quiet; 20 cases Japan bought in, good bright seedy at 40s. *Cinnamon*: 40 bales Ceylon sold, without reserve, at 5¾d. to 6d. *Cinnamon Chips*: 223 bags bought in at 3¾d. *Mace*: of 27 packages Penang only 1 case sold, good bold red little pale and wormy at 2s. 24 packages West Indian all sold at rather dearer rates, good bold pale at 1s. 8d. to 1s. 9d., fair to good red part small at 1s. 4d. to 1s. 6d., fair to good pickings at 1s. 1d. to 1s. 3d. *Pimento* dull of sale: of 543 bags only 40 bags sold, fair at 4⅜d.

Sulphate of Copper.—Present price is £24 to £25 10s. per ton.

Sulphonal.—Makers are firm at 17s. per lb. for both *crystals* and *powder*, while there is practically nothing offering from second hand at below makers', the above-named figure.

Tar.—*Stockholm*, 26s. 6d.; *Archangel*, 28s. per cwt.

Turmeric—Quiet at steady prices, say 18s. 6d. per cwt. for *Bengal*, 34s. for good bright finger *Madras*, 22s. for *Cochin* fingers, and 10s. 6d. per cwt. for split bulbs.

Liverpool Market Report.

April 19, 1899.

A fair amount of business has been done in seeds during the week, Linseed selling more freely, transactions, including Bombay, Calcutta, River Plate, and Turkish varieties in spot parcels, having taken place. Turkish Canaryseed also has engaged a little more attention. In Honey good sales of Peruvian and Chilian have been made, whilst fine Californian made very full prices. Other miscellaneous sales are Carnauba Wax and Spermaceti, the latter on private terms. Chemicals still continue quiet, the only alterations being in Ammonia and Copper Sulphates, the former being a turn cheaper and the latter dearer.

Ammonia Salts.—*Carbonate*, 3¼d. per lb. *Sal ammoniac*, 33s. to 35s. per cwt. *Sulphate* cheaper, £10 15s. per ton.

Arsenic—In powder is dearer, £18 to £18 2s. 6d. per ton Lump, £30 per ton.

Canaryseed—Is becoming brisker; 200 bags of Turkish sold at 25s. 6d. per 464 lbs., and quotations are 25s. 6d. to 26s. 6d. at present.

Carnauba Wax.—Sales of 71 bags have been effected, grey at 40s. per cwt., yellow, 73s. 9d.

Copper Sulphate—Is dearer; £24 15s. to £24 17s. 6d. per ton.

Honey.—Sales of Peruvian are reported at 26s. per cwt., Chilian Pile X at 28s. 6d., Pile Q at 22s., and fine Californian at 42s. 6d.

Linseed.—In consequence of large arrivals the price of all varieties of seed is easier. Calcutta has sold at 37s. 6d. per 416 lbs., River Plato at 33s. 9d. to 34s., Bombay, ex-store at 42s. (100 bags), Turkish "feeding" seed sold to the extent of 150 bags at 42s. per 416 lbs.

Oils (Fixed) and Spirits.—*Castor* of all kinds is selling slowly, the market is flat and prices are unaltered. Calcutta is quoted at 2⅞d. to 2⅛d. per lb.; French 1st pressure 2⅛d. ex quay, 2¼d. ex store, 2nd pressure 2⅛d.; and Madras 2¾d. per lb. *Olive*: Spanish is quoted at £31 to £31 5s. per tun for Seville, and £31 10s. for Malaga, but demand is not great. *Linseed* is quiet at rather a lower price for Liverpool makes in export packages, 19s. to 19s. 6d. per cwt. *Cottonseed* meets with a fair demand at the steady price of 17s. 6d. to 18s. per cwt. in export barrels. *Spirits of Turpentine*, after reaching 34s. 3d. per cwt., have sunk back to 33s. 9d., at which price they are steady, with a moderate inquiry.

Potash Salts.—*Saltpetre*: 50 bags of Karachi under 5 per cent. refraction sold ex quay at 17s. 6d. per cwt.; purified is very firm at 22s. per cwt.

Soda Salts.—*Nitrate* is lower; 8s. 3d. to 8s. 6d per cwt. on the spot.

Spermaceti.—80 bags crude Chilian sold privately ex quay.

Newcastle Chemical Report.

April 19, 1899.

A steady tone prevails on this chemical market. If anything, Bleaching Powder is more stirring now that shipments to the Baltic are in progress. Soda Crystals are moving with a shade more freedom to the Channel ports. Sulphur keeps on the scarce side. Prices, however, are not much changed. Quotations are: Bleaching Powder, according to markets, £5 7s. 6d. to £5 12s. 6d.; Soda Crystals, according to markets, 45s. to 47s. 6d.; Alkali, 40 per cent., £4 5s. to £4 10s.; Soda Ash, 50 per cent., £5 5s. to £5 10s.; Caustic Soda, 70 per cent., £7 5s. to £7 10s.; Sulphur, £4 15s. to £5 per ton.

Manchester Chemical Report.

April 19, 1899.

The tone of the market, both on home and export account, continues good, and prices are well maintained all round. This is especially the case with miscellaneous articles. Sulphate of Copper is firm at £25 to £25 10s. per ton, delivered Manchester. Coal Tar Products are brisk, Creosote having advanced a point (3¼d.), and Pitch, of which over 3000 tons have been sent down the Ship Canal during the past week, has advanced to 25s. per ton, *f.a.s.* Perhaps the exception is Benzol, most makers of which refuse to accept current rates unless compelled to clear. Naphthas are very steady. Green Copperas is firmer at 34s. to 35s. 6d. per ton, *f.a.s.*, Manchester, Welsh quoted 13s. per ton in bulk on rails at works. Glycerin tends upwards at £50 10s. to £51 10s. per ton, tins and cases, chemically pure, on rails or delivered *f.o.b.* at any English port. Yellow Prussiate is scarce and unchanged. In Acetate of Soda, makers are well sold forward, and quotations are nominal.

Publications Received.

Die Selbstablösung der Apothekenwerte. Reprint from *Apotheker Zeitung*. No. 28. 1899. From the Publishers.

Constipation and Its Modern Treatment. By George Herschell, M.D. (Lond.). Pp. 67. Price 2s. 6d. net. London: H. J. Glaisher, 57, Wigmore Street, W. From the Publisher.

Obituary.

JACKSON.—On April 12, Alexander Logan Jackson, Chemist and Druggist, Blyth, Northumberland. Age 21.

COOPER.—On April 15, Henry Cooper, Chemist and Druggist, Soho. Aged 50. Mr. Cooper had been connected with the Pharmaceutical Society since 1873, and was a member of the firm of J. H. Cooper and Co., 24, Greek Street, Soho, which business was established in 1816 by his father, Dr. Cooper. His death occurred very suddenly, although he had been failing in health for some time past. He was at his place of business the same day, and on the previous day he presided over the usual meeting of the Board of Guardians of the Westminster Union, of which he had been chairman for the past year. He was also a member of the St. Anne's Vestry, an overseer of the poor, a member of the Board of Guardians of St. Giles in-the-Field and St. George's, Bloomsbury.

MURDOCH.—On April 15, James Murdoch, Pharmaceutical Chemist, Glasgow. Mr. Murdoch was one of four brothers, all chemists, and was a partner in the firm of Murdoch Brothers, 249, Sauchiehall Street, Glasgow, but had not taken any active interest in pharmacy for many years. He became a member of the Pharmaceutical Society in 1849, and was for some time the local secretary for Glasgow.

ROBERTS.—On April 16, Sir William Roberts, the well-known consulting physician. He was born on March 18, 1830, and was the son of Mr. David Roberts, of Mynyddygof, Anglesey. He was educated at Mill Hill School and at University College, London, and graduated B.A. at London University in 1851, becoming a member of the Royal College of Surgeons and a licentiate of the Society of Apothecaries in 1853. He took the degree of M.D. of the University of London in 1854. After completing his medical studies at University College, London, he was appointed house surgeon to the Manchester Royal Infirmary, and a year or two later, at the age of twenty-five, was promoted to the office of full acting physician on the honorary staff. When the Victoria University received its supplementary charter, enabling it to confer degrees in medicine, Dr. William Roberts was appointed the first professor of medicine in the University, and in the year 1885 received the honour of knighthood. He was made a Fellow of the Royal College of Physicians in 1866, when he was selected to deliver the Goulstonian lectures, and he also delivered before that college in the year 1880 the Lumleian lectures. He held the office of Councillor of the Royal College of Physicians from 1882 to 1884, and that of Censor in 1889 and 1890. In 1892 he was appointed Croonian Lecturer, and in 1897 gave the Harvcian oration before the college. In addition to many other important offices, in 1896 he was appointed to represent the University of London on the General Medical Council, in succession to Sir Samuel Wilks, and his last official appointment was in connection with the movement to establish a teaching University in London.

FRAZER.—On April 17, Dr. William Frazer, one of the most prominent members of the medical profession in Dublin. Dr. Frazer was born in 1824 and was educated at Trinity College. He was elected a Fellow of the Royal College of Surgeons, and subsequently held the positions of Examiner and member of Council in the Royal College of Surgeons, Examiner to the Queen's University, Lecturer on Forensic Medicine in Park Street School, and Crown nominee to the Council of the Pharmaceutical Society, Ireland. He was the author of a treatise on materia medica, of another on skin diseases, and frequently contributed to the medical journals.

BREMRIDGE.—On April 18, at Haverstock Hill, Hampstoad, Elizabeth Ann, wife of Elias Bremridge, formerly Secretary and Registrar of the Pharmaceutical Society. Aged 68.

Partnerships Dissolved.

(From the London Gazette.)

R. C. Aitken, M. A. Aitken and L. S. Aitken, (trading as Mary A. Aitken and Son), Chemical Manufacturers, etc., Beddington Corner near Mitcham. Debts will be received and paid by R. C. Aitken.

Benjamin T. Watkinson and W. B. Mason (trading as Watkinson and Co.), Camera and Photographic Apparatus Manufacturers, Carlton Hill, Leeds, so far as regards Benjamin T. Watkinson.

W. D. Spanton and T. Treffry Cockill, Physicians and Surgeons, Hanley.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Foreign Stamps, arranged in countries in small books, and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. Franklin, 34, Exchange Buildings, Birmingham.

A Light Trolley, suitable for delivering soda and other heavy goods, 37s., carriage paid.—Arthur and Co., Cambridge.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Albert W. Sizer and Thomas R. Sizer (trading as Sizer Brothers), Hull Road, Hessle, Yorks.

James Lancaster, Artificial Teeth Maker, 35, Railway Street, Nelson, Lancs.

William James Daniel, Chemist and Druggist, 147, Cannon Street, Middlesbrough.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Alcock, Armbruster, Bartlett, Booth, Breeze, Brierley, Campkin, Carulla, Cooper, Corfe, Cruickshank, Cunliffe, Currie, Davies, Druce, Dunean, Eberlin, Elliott, Ferrall, Galt, Gibson, Gifford, Gilchrist, Gilderdale, Glew, Goodall, Guyer, Haigh, Hall, Harrison, Hill, Huntley, Hutton, Jackson, Kirkby, Lander, Laurance, Ling, Maben, Mason, Melling, Merck, Naylor, Oglesby, Perey, Pilcher, Redhead, Rees, Rogers, Sibley, Thomas, Thompson, Walton, Ward, Wells.

POLITICAL GOSSIP.

A Candid Friend beyond the Tweed takes exception to the recent note respecting Mr. Salvesen's prospective candidature for Leith (*ante*, p. 346*a*) on the ground of its alleged partisan spirit. To most persons the paragraph in question would seem to be devoid of the quality which the perception of our correspondent finds in it, but as the complaint has been made, it is necessary at once to declare our innocence of any intention to "take sides" in respect to the political colour of the Leith Burghs or any other Scottish constituency. The *Pharmaceutical Journal* places professional interests before party, and does not propose to pin its fortunes to the tail of a political creed; but surely there is no need to push impartiality to the verge of weariness, or to present news items in an absolutely colourless garb. Official journalism has many necessary restrictions, but it is under no compulsion to model its "Gossip" on the severely classic lines of a "Court Circular."

The House of Lords, on Thursday, the 20th, had an air of conscious rectitude about it—not the unctuous variety known to the Colonial Office, but the commercial brand which, according to the Lord Chief Justice, has become extremely rare of late, owing to the almost universal practice of secret bribery. Lord Russell wants to bring honesty back to trade, and on Thursday he made his first step towards the purification of the Augean stables of British commerce, by turning on a flood of eloquence against illicit commissions and by producing a serviceable-looking broom in the shape of the Prevention of Corruption Bill. The noble and learned lord, in introducing the measure, gave a number of illustrations revealing at once the tremendous extent of the system of bribery, as well as its malignant character. All classes of the community, professional as well as industrial, seem to be affected. In fact the only body with any claim to comparative morality appears to be the legal profession, for his Lordship did not make specific mention of lawyers in his indictment. But medical men have been heavily impeached. They are stated to be in the habit of receiving a 25 and even 50 per cent. commission from chemists who aspire to dispense their prescriptions; they are further charged with exacting a liberal percentage from the undertaker to whom they may hand over deceased patients. On the authority of the Chamber of Commerce, the House of Lords was told of a company which was formed to sell a medicated wine, and distributed its "Founders'" shares amongst medical men, as an inducement to puff the preparation; still worse cases may be found in the reports compiled by the London County Council and the before-mentioned Chamber. The evil has evidently greatly developed since those good old days when Dr. Jobling, Mr. Mould, and Mrs. Gamp formed a harmonious triumvirate of imposition to work upon an unsuspecting public; but it is satisfactory to find that the chief occupant of the Bench has the boldness to say that this discouragement of honest enterprise must be checked; and not only to say it, but to make an earnest endeavour to do it.

The Remedy proposed is to extend the Corrupt Practices Act to all corrupt practices. Lord Randolph Churchill's Act of 1889 made bribery a criminal offence; but only in so far as it concerned officials and employés of public bodies. The Prevention of Corruption Bill would remove that limitation and make certain inequitable payments and similar malpractices amenable to criminal law. Corruptly giving to agents or receiving as an agent, or even offering to give, or soliciting the receipt of valuable consideration, is to be a misdemeanour punishable by a term of imprisonment not exceeding two years, or by a fine not exceeding £500, or both. Space will not admit of close analysis of this very interesting and exceedingly drastic measure; but it may be said that it will touch no honest trader or honourable man, and its machinery can only be put in motion by fiat of the Attorney-General. One may hope that the introduction of the Bill marks the dawn of the day when business life will be cleared of the many reprehensible practices which have been fostered by the Companies Acts. Reform is in the air and perhaps the close of the session may see the passing of a new Companies Bill, as well as a new Medical and Other Professions Bill, in which an adequate measure of justice will be meted out to the pharmaceutical body.

Committee Work on the Government Food and Drugs Bill is progressing slowly, though in normal fashion. Meetings are being held twice a week and the record up to the present is promising, for Clause 1 has been disposed of, and Clause 2 commenced. At the first sitting Mr. Strachey (S. Somerset) did most of the "moving," and the Committee did the rejecting. The honourable member, amongst other efforts, tried to include the importing of "margarine coloured to imitate butter" in the offences under the Act; but the majority thought that the principle of "colouring" went beyond the limits of margarine, and they were not prepared to decide offhand that the harmless colouring of articles of food, in order to render them commercially and dietetically presentable, should be made an offence at law. At the same sitting Sir C. Cameron and a following of fifteen members attempted to extend the operation of the initial clause to all foods within the meaning of the Statutes of 1875 and 1878; but Mr. Long's arguments (characterised as "flimsy" by Sir Charles) prevailed with eighteen of the Committee and induced them to record their votes against the proposed extension. Thus the alleged large imports of adulterated flour to which Mr. J. Duckworth (Middleton, Lancs.) alluded must continue for a time. The Government, however, has intimated its willingness to give way to Sir Charles Cameron's point, and Mr. Long subsequently announced that at the report stage he would move to add a clause largely extending the operation of Clause 1.

On Monday, after having disposed of Mr. Kearley's amendment as to fines by postponing it until Clause 14 is reached, the Committee had an important item to consider in the amendment standing in Sir C. Cameron's name and having for its object the addition of the Local Government Board as a joint authority with the Board of Agriculture. Mr. Long opposed and Sir W. Foster supported the amendment, which was eventually rejected after an interesting explanation to the effect that, as the local authorities are not to be the prosecutors under the Bill there is no occasion to drag in the Local Government Board. The important question of the use of preservatives was next raised by Mr. Strachey, who has frequently called the attention of the House to the importation of heavily-dosed milk. Mr. Long very diplomatically put aside the point by stating that the amendment was inopportune. Boric acid and similar preservatives might or might not be right and proper, but that was a question for experts, and a committee of experts was now going to investigate the whole subject. Thereupon the Committee left the member for South Somerset in a hopeless minority and adjourned.

For Pharmacists there is but one Bill in Parliament, namely, the Pharmacy Bill (House of Lords), and it is natural that this column should be eagerly scanned for news concerning its movements. Up to the time of going to press there is nothing to chronicle, for there has been no movement. The Pharmacy Bill and the Medical Bill are both awaiting second reading; but it is rumoured that they may be taken up next week. If the Lord Chancellor is seriously desirous of grasping the company nettle, so far as professional titles are concerned, he will be well advised in first taking advice from the Council of the Pharmaceutical Society, which is best capable of furnishing useful information and suggestions on the subject.

FRENCH NEWS.

Another Pasteur Statue and Institute.—The unveiling of the statue of Pasteur, at Lille, has been performed by M. Vigier, Minister of Agriculture, who afterwards opened the institute, Madame Pasteur and her family being present. The town was fittingly decorated for the occasion. Preparations are being made for the prompt treatment at the Pasteur Institute, Paris, of Captain M. A. Tighe and Captain Charles Archer, Indian political agents in South-Eastern Baluchistan and Zhob respectively, who have been bitten by a mad dog. The fact that, besides private persons from India, thirty-three British soldiers have already been treated at this establishment, is regarded as emphasising the strong need of an institute of this kind in India.

New Cure for Lock-Jaw.—Dr. Roux, the successor of Monsieur Pasteur, laid before the Académie de Science de Paris last week an account of his new process for the cure of lock-jaw. The remedy is the injection into the brain of Professor Behring's antitetanic serum. Experiments were tried on human beings recently, and brought about complete cures. Since then, twenty-five other cases have been treated, in every instance with complete success.

The Specialty.—As an inducement to French pharmaciens to sell his specialties at full prices and thereby obtain just remuneration for time and labour, Monsieur A. Fouris, proprietor of the well-known Sirop and Capsules Montégniet has adopted the plan of enclosing beneath the outer wrapper of each of his specialties a ticket intended for the pharmacien. This ticket represents a certain percentage or discount for such pharmaciens as will honestly engage to retail the specialty at its full price, enjoining no other condition than that the tickets be signed by a wholesale specialty house, as well as by the pharmacien, before payment is made. On the other hand, the tickets being signed, may be handed to a traveller and the pharmacien credited with the amount due at any wholesale house. This system has so far worked very successfully, only involving a little extra clerical work for the intermediaries, who no doubt receive some compensation from the proprietor of the specialty. Others might with advantage follow this example.

Supposed Poisoning by Creosote.—A baby two days old died recently, at the St. Louis Hospital, Paris, from the effects of poison. The mother is supposed to have poisoned it on the day of its birth with creosote, which she had purchased from a local pharmacien, ostensibly to calm the pain of an aching molar. She says, however, that she had done nothing but wipe its mouth with a handkerchief which she herself had used, the presence of creosote upon the handkerchief being from the saliva of her own mouth. Although the nurse attending her noticed nothing suspicious upon the mother's part, an inquiry will be held, for these numerous cases of infantile mortality arouse no small amount of suspicion.

Disinfection of Empty Apartments.—The Council of Hygiene of the Seine discussed, at its last sitting, a report of Dr. Roy des Barres on the necessity of rendering obligatory on house-owners, after every removal, the disinfection of the empty apartments. At present disinfection is not compulsory even where illness has broken out which has to be reported, and although the sanitary authorities are frequently called in to disinfect by private individuals this is quite voluntary on the part of the latter. The Committee on Hygiene of the 5th Arrondissement calls attention to the danger likely to arise in the cases of removals from apartments where infectious disorders have prevailed, and the rooms not been disinfected, to the incoming tenants who are ignorant of the fact, and, in order to obviate the risk of infection, calls for compulsory disinfection in every instance, even where suspicions of the infectious nature of an illness only exists.

Pharmaciens and Potent Disinfectants are alike numerous, and instructions how to use the latter successfully are easily obtained from the former for the asking. Such thoughtlessness as prevails is wanton and criminal. Dr. Roy des Barres remarked that such an obligation as that proposed could only be imposed by legislative measure, and while recognising the benefit of some such step, recommended that the Council should confine itself for the moment to the expression of the opinion that disinfecting should be made compulsory "in every apartment where a disease which had to be notified had existed." This course, which it was thought could not fail to attract the attention of the Legislature, was adopted.

A Chemist's Mistake.—The Tenth Correctional Chamber has just had before it for judgment an accidental poisoning case caused by a chemist's error in dispensing. It appears that a certain individual, feeling out of sorts, sent for his family doctor, who prescribed for him a mixture into the composition of which entered (so the *Revue Medico-Pharmaceutique* puts it) "a violent poison, bearing some analogy to atropine." The prescription was duly dispensed by the qualified assistant of a neighbouring pharmacien, and despatched to the patient's abode. Soon after the administration of the first dose, however, unlooked-for symptoms manifested themselves and alarmed both patient and attendant friends, who hastily re-summoned the doctor. The latter, thinking it but some slight cerebral congestion, prescribed appropriate medicine, but unavailingly. The idea then struck him that an error in dispensing might perhaps have been made, and he foolishly proceeded to gulp down a dose of the medicine to test the effect. That was not slow to assert itself, similar symptoms of poisoning to those experienced by the patient being, in like measure, felt by the doctor. Messieurs Brouardel and Ogier, analytical experts in the case, declared that the dose dispensed was four times as strong as that prescribed by the doctor. The latter, in his recital of the effects of his little mouthful of his own physic, stated that his sight was so affected that for two whole days he was unable to sign his prescriptions in a legible manner. One is tempted to ask what the body of the prescription must have been like if the learned medico deplored his inability to sign his own signature legibly to his prescriptions? Possibly he may have had a similar derangement of vision when writing the fatal prescription, and hence the error. Nevertheless, thanks to the doctor (?) the assistant was ordered to pay over 50 francs, and the pharmacien made to understand that, as proprietor, he was in reality responsible.

Professor Fredel, the celebrated chemist, died suddenly last week at Montauban, at the house of a relative with whom he was spending the Easter vacation. He was born at Strasbourg on March 12, 1832.

IRISH NEWS.

Pharmaceutical Society of Ireland.—At Dublin, on the 24th inst., the last evening meeting for the session was held at 67, Lower Mount Street, the President (Mr. R. J. Downes) in the chair. The President prefaced the sessional report by stating that up to a certain point the meetings had been a decided improvement on those of the previous year, particularly as regarded the lectures, which were of a better class and conduced to a fuller attendance. On the whole there was reason for self-satisfaction. —The report for the session 1898-1899 was then read by the Hon. Secretary (Mr. Henry O'Connor, M.P.S.I.), in which the work of the session was mentioned, and a list of the principal helpers was given. The attendance of members during the session was stated to be unsatisfactory, and regret was expressed at the lack of interest shown in the evening meetings generally. One of the reasons ascribed for this was the want of sympathy between the Council and the members, and the action of the Council in giving a tardy refusal of all but one of a number of recommendations put forward by the Committee of the evening meetings as essential to the welfare of the Society was stated to be unsatisfactory. The attention of the School Committee was called to the regulations, under which it was laid down that it was its duty to arrange for the meetings of an educational character, and the action of the Committee in devolving the duty on a few was regarded as discouraging. Regret was expressed that the School Committee had not contributed prizes to the evening meetings. Thanks were accorded to those who had helped during the session.—The report was adopted on the motion of the President.—Mr. Johnston hoped there would soon be a course of practical pharmacy for the licence of the Society. It would be of benefit to the public and the students. Candidates for the licence should be afforded an opportunity of gaining some experience in the school before going in for the examination. He intended to bring the matter forward at an early date. He thought the Council should offer a prize for the best essay on pharmacy up to date, or otherwise.—A discussion on incompatible mixtures took place, and a communication from Mr. J. Armstedt Ray, B.A., M.P.S.I., F.I.C., on "The Chemistry of Nitrogen Iodide," was read and briefly discussed.—Votes of thanks were accorded to the President, the officers, and reporters, and the proceedings terminated.

Mr. E. M. Hodgson, M.P.S.I., Dublin, has been elected County Councillor under the Local Government Act for the Urban District of West Rathmines.

Mr. James E. Brunker, ex-President of the Irish Pharmaceutical Society, has been elected a member of the Select Vestry of the Mageough Church, Palmerston Park, Dublin.

Mr. E. M. McSwiney, L.P.S.I., Apothecary to the Cork Dispensary Committee, has been publicly complimented by the outgoing Guardians on the way in which he has performed his duty for a number of years past, reducing each year the cost of medicines, while supplying an increasing number of patients, and a resolution commending him to their successors in office has been passed by the Board.

Mr. John Nicholson, J.P., senior partner of the firm of Messrs. Bewley and Draper, chemists and druggists, Mary Street, died at Dublin on the 14th inst. Mr. Nicholson and his wife contracted influenza a fortnight ago, and Mrs. Nicholson succumbed to the malady four days before her husband.

Mr. Thomas W. Robinson, M.P.S.I., has been elected by the ratepayers of Kingstown as their representative of the East Ward of that Township under the Local Government Act. The same gentleman was only a few days ago sworn in as a magistrate for the County Dublin and as Chairman of the Kingstown District Council, and last week he was still further honoured by being placed on the Select Vestry of the parish in which he resides.

Dr. Brosnan, Medical Officer to the Killarney Poor Law Guardians, has recommended the advisability of requesting the Local Government Board to have drugs and medicines manufactured in Ireland.

SCHOOL OF PHARMACY NEWS.

The Students Have Once More Assembled in full force for the final stretch, and by the time this is in print will have been in full swing for a week. It has been noticed and remarked what a business-like air now pervades the laboratory and lecture theatre, as though the grim seriousness of the situation had burst upon the students, and the phantom of July was ever before their eyes. Perhaps this change of front is not a sign of fear, but merely a determination to follow the example of the Major students and to uphold the reputation of the Square. There is not much alteration to be seen in the laboratory this term, except the number of empty benches left by departed Major students, and the absence of the prominent figure of Mr. C. C. Frye, one of the demonstrators, who no doubt will be greatly missed by the majority of students now that he has left to take up an analytical post in the north.

Cricket.—A general meeting of the Pharmaceutical Cricket and Football Club—to elect officers to fill the vacancies caused by the departure of Major men successful in the recent examinations—was held in the Lecture Theatre on Friday last, at 1 p.m., and although, being lunch time, it was not well attended—only about five-and-twenty students being present—it was lively and well representative of the sporting element of the "Square." Mr. P. B. Gray, elected to the chair, called on the Secretary to read the minutes of the last general meeting. These having been put to the meeting and carried, the election for captaincy was procceded with. Messrs. Tibbit, Gray, Wilkinson, and Stokce were proposed and seconded, and the latter two declining to stand, Mr. Tibbit was elected by a majority of four votes. He is a keen sportsman, attending every football match, though prevented from playing himself through an injury to his knee, and "Square" cricketers have good reason to be satisfied with their choice. The Chairman next called on the meeting to fill two vacancies in the Committee. Proposed by Mr. Stokoe, and seconded by Mr. Tibbit, "That an entirely new Committee be formed"; but the Secretary having alluded to the time-honoured custom, the amendment was withdrawn. Messrs. Palmer and Garsed were elected, and the meeting adjourned. Only two matches having as yet been arranged, the Secretary (Mr. H. Finnemore) will be pleased to hear from colleges or houses connected with the trade having open dates during May and June.

The Next Meeting of the Students' Association will be held this Friday evening, April 28, at 5 o'clock, when a paper will be read by Mr. P. B. Gray, entitled "Caffeine-Producing Plants." The chair will be taken by Mr. H. Payne.

Marriages.

Douthwaite—Mayon.—On April 19, at Shirley Baptist Church, Southampton, by Rev. E. R. Pullen, Harry Fryer Douthwaite, pharmaceutical chemist, Felixstowe, to Ethel, youngest daughter of W. F. Mayon, Shirley.

Bain—M'Caull.—At Lecropt Parish Church, Bridge of Allan, N.B., on the 25th inst., by the Rev. Hugh Stevenson, Free Church, Dunblane, assisted by the Rev. D. Ramsay Henderson, minister of the parish, John Bain, pharmaceutical chemist, of Messrs. O. Robertson and Co., to Mary Anne, twin daughter of Peter M'Caull, J.P., Knockhill.

ENGLISH NEWS.

Photographic Chemists.—Messrs. Perfect and Co., 161, Commercial Road, Landport, intimate that they are dealers in photographic goods and have a well-appointed dark-room.—Mr. Fredk. Smith, 221, Soho Road, Handsworth, Birmingham, also notifies that he has a full stock of photographic apparatus and materials.

The 'Flora of Kent,' referred to at page 396, will be issued to subscribers who send their names to Mr. F. J. Hanbury, Plough Court, Lombard Street, London, E.C., prior to May 15, 1899, at the price of 10*s.* 6*d.* net, post free. A small number of copies will be printed on thin paper and bound in limp leather covers with lap edges, for use in the field, the price of which will be 12*s.* 6*d.* net, or a copy of each will be supplied to one subscriber for £1 1*s* net, post free. After publication the prices will be 12*s.* 6*d.* and 15*s.* net, with no reduction for two copies.

Food and Drugs Act Prosecutions.—Lime Water: At Lambeth Police Court on Thursday, April 20, F. H. Davis, of Hindman's Road, East Dulwich, was summoned by Inspector Scudamore, on behalf of the Camberwell Vestry, for selling to the prejudice of the purchaser lime water which was not of the nature, substance, and quality of the article demanded by the purchaser.—It was alleged by the prosecution that a sample of lime water was found upon analysis by the public analyst to be only 32 per cent. of the strength prescribed by the British Pharmacopœia.—The defendant said the lime water was made by one of his assistants, who had since left his service, and it was inadvertently sent out without being tested. There was nothing to be gained by selling lime water of less than the prescribed strength. It was simple carelessness on the part of the assistant in making it.—Mr. Hopkins ordered the defendant to pay a penalty of 40s. and costs.—F. E. Rubbra, chemist and druggist, of Lordship Lane, East Dulwich, was summoned by the same vestry for selling lime water which was found upon analysis to be only 79 per cent. of the strength prescribed by the British Pharmacopœia.—The defendant, who explained that the lime water lost its strength owing to a defect in a syphon bottle in which it was kept, was ordered to pay a penalty of 20s. and costs.—Iodine Liniment.—Arthur W. E. Donellan, chemist and druggist, Nantwich Road, Crewe, was recently summoned at the Crewe Police Court by an inspector of the County Council for selling certain drugs, viz, three ounces of iodine liniment not of the nature, substance, and quality demanded.—A boy named James Harrison stated that on March 9 he went into the shop of Mr. Donellan, and took with him a piece of paper with something written on it. He handed the piece of paper to a young man who was behind the counter, and asked him to make him up the compound which was mentioned, and was supplied with something in a bottle.—Dr. Carter Bell, the county analyst, certified that the compound was not iodine liniment, as it contained under 3 per cent. of iodine, but was a sample of tincture of iodine.—An assistant to Mr. Donellan said his employer was not in the shop at the time the boy came in. He brought an ordinary spirit bottle and handed it to witness with a slip of paper. He read the note, but did not think a boy so young would be sent for such a strong drug as iodine liniment. He did not question the lad. He had no intention of defrauding the customer, and the reason why he did not supply the liniment was because people often asked for iodine liniment not knowing that it was so strong, and they really wanted tincture of iodine.—The magistrates decided that the assistant acted as he did in the interest and for the safety of the public, and dismissed the case on payment of costs.—Seidlitz Powders and Camphorated Oil.—At Durham, on Wednesday, April 19, Nicholas S. Mohon, grocer, Ferryhill Station, was charged with selling seidlitz powders which were adulterated, on February 22.—Inspector Elder said the samples were deficient in every one of the ingredients of which they were composed. They were deficient 14 per cent. in sodium potassium, 20 per cent. in sodium bicarbonate, and 36 per cent. in tartaric acid.—Defendant pleaded guilty, and produced a letter from the wholesale dealers who supplied him, stating that they were to blame, that the adulteration was due to the carelessness of their packers, and that they would pay any fine.—The Chairman said the case was a very bad one, and they would inflict the full penalty, which they hoped would be a lesson to people, to prevent the abominable system of adulteration by which the public was cheated. A

poor creature who stole twopence was sent to gaol, but these people who systematically defrauded the public got off with nothing. It was nothing less than robbery.—Defendant was fined £20 and costs.——Thomas Christelow, grocer, of Ferryhill Village, was charged with selling adulterated camphorated oil on the same date, which contained no less than 60 per cent. of cottonseed oil which had been substituted for olive oil. — Defendant produced a letter from the wholesale dealers, stating that they regretted the circumstance, and would pay the fine. —A fine of £20 and costs in this case was also inflicted.—— CAMPHORATED OIL.—Samuel Law, a shopkeeper, of Parkgate, was charged at the Rotherham West Riding Police Court on Monday, April 24, with having, contrary to the Food and Drugs Acts, sold camphorated oil not of the nature and substance demanded on March 3.— The analyst's certificate showed that the mixture contained 17 per cent. of camphor and 83 per cent. of olive oil. According to the British Pharmacopœia camphorated oil should consist of 21 per cent. of camphor and 79 per cent. of olive oil.—In reply to Mr. Gichard, solicitor, who defended, the Inspector in charge of the case said that olive oil was better than sweet oil for rubbing purposes. There was no attempt to use a cheap ingredient and palm it off upon the public. Previous to the issue of the 1898 B.P. the mixture sold by the defendant would have been correctly made. It was only by the issue of the new Pharmacopœia that the name of camphorated oil was given to what had been previously described by another name. The oil supplied by the defendant had been made in that form for a number of years. He did not press the case; it was a matter of enforcing the standard and getting the new order known.—Mr. Gichard, for the defence, submitted that there should be some consideration shown by the authorities before they came into Court to make a man a criminal. Technically his client was guilty, but he asked the Bench to decide that the guilt was not of such a nature that the defendant should be convicted.—The Bench did not think there had been any intention to defraud, and dismissed the case.

Leeds College of Pharmacy.—On Wednesday, April 19, the students of the Leeds College of Pharmacy, through the kind permission of Mr. J. L. Lane Fox, paid a visit to the magnificent woods on the Bramham Moor estate. A start was made at 1 o'clock in a char-a-banc drawn by four horses, the drive from the College to Bramham Park occupying two hours. During the tour through the woods the flora of the district was examined, whilst the camera was in great requisition. At 6 o'clock the party reached the quaint little village of Bramham, where an excellent repast was prepared, and to which ample justice was done. The drive home at 8 o'clock concluded a most enjoyable day.

Laudanum Poisoning.—On Saturday, April 22, an inquest was held on the body of Dora Procter, 23, who died on Friday at Peveril House, Buxton.—Dr. G. H. Procter, of Salisbury, said his sister lived at 7, Miles Road, Clifton, with her mother. She had been taking bromide by a doctor's orders for sleeplessness. The doctor advised a change because she was depressed and could not sleep. Further evidence showed that on the previous Thursday deceased was found in bed dead, and later fragments of a bottle were found in the backyard immediately on a line with the deceased's bedroom window.—William Pilkington, pharmaceutical chemist, said on Thursday evening a young lady made a purchase at his shop of 4 oz. of laudanum. She gave the name Procter. Witness asked what she wanted with such an unusual quantity, but she made no distinct reply. He placed it in a poison bottle with extra labels on.—Mr. T. B. Flint, surgeon, Buxton, said he made an analysis of the contents of the stomach, and obtained results which confirmed the presence of laudanum. Death was due to an overdose of laudanum.—The jury returned a verdict to the effect that the deceased died from laudanum poisoning, but there was no evidence to show under what circumstances it was taken.—— An inquest was held at Hoole, Chester, on Thursday, April 20, with respect to the death of Hannah Privett, 73. Evidence was given to the effect that deceased had been a laudanum taker for twenty-five years, and purchased two six-ounce bottles of the drug on the previous Monday from a chemist in Chester. They were plain bottles labelled "Poison."—A verdict of death from misadventure was returned; the Coroner remarking that there was no doubt deceased died through taking an overdose of laudanum when she was in a weak state of health.

PERSONALITIES.

Mr. George James Gostling, Local Secretary to the Pharmaceutical Society, has been elected Chairman of the Stowmarket Urban District Council, and has consequently by virtue of office been appointed Justice of the Peace for the County of East Suffolk. Mr. Gostling has been an active member for the past seventeen years.

Mr. T. W. Smith, pharmaceutical chemist, has opened a new shop, the Mabfield Pharmacy, Wilmslow Road, Fallowfield, Manchester, the entire fittings of which have been supplied by Messrs. Ayrton and Saunders, Liverpool.

Mr. Donald Watson, of the Formalin Co., has been re-elected, for the eleventh successive year, Chairman of the Executive Committee of the North Kensington Conservative Association. He has also been re-elected Churchwarden of St. Luke's, Paddington.

Mr. Ernest A. Kempton, chemist and druggist, has taken over the business formerly carried on by Mr. J. Moore, at 110, Blackheath Road, Greenwich, and has added a photographic department, with a dark room for changing plates and developing negatives.

Mr. J. Hinton Lake, local secretary of the Pharmaceutical Society at Exeter, has taken a prominent part in the organisation of a photographic exhibition held under the auspices of the Camera Club, Exeter, and his stand at the exhibition was notable for the large variety of cameras, etc., displayed.

Obituary.

FLETCHER.—On April 22, John Fletcher, Chemist and Druggist, Ashby. Aged 39. Mr. Fletcher had been connected with the Pharmaceutical Society as an Associate and latterly as a Member since 1890.

HOGG. — On Sunday, April 23, Jabez Hogg, M.R.C.S., F.R.M.S., at his residence, Palace Gardens Terrace, Kensington, aged 82. He was born at Chatham in 1817, and received his early education at the Rochester Grammar School. In 1843 he joined the staff of the *Illustrated London News* (the year following its establishment), and afterwards became the editor of a series of illustrated educational books published by the proprietors of that paper. About the year 1845, according to the *Times*, he turned his attention to medicine, and was entered as a student at the Hunterian School of Medicine and at Charing Cross Hospital. In 1850 he became a member of the Royal College of Surgeons, and soon afterwards began to practise as an ophthalmic surgeon. He was Vice-President of the Medical Society in 1851-52, was elected a Fellow of the Linnean Society in 1866, and Honorary Secretary to the Royal Microscopical Society from 1867 to 1872. He was the first President of the Medical Microscopical Society. At the time of his death he was consulting surgeon to the Royal Westminster Ophthalmic Hospital, the Hospital for Women and Children, and to the Royal Masonic Institutions, and a corresponding member of numerous scientific societies. Of Freemasonry he was a very prominent and popular member, and a strong supporter of all its charities. In 1867 he was appointed to the office of Junior Grand Deacon in Grand Lodge, and in 1889 the Prince of Wales appointed him Grand Sword Bearer in Supreme Grand Chapter. Mr. Hogg was a prolific writer, and was the author of, among other works:—'A Manual of Photography' (1845), 'A Manual of Domestic Medicine' (1848), 'The Microscope, Its History, Construction, and Applications' (1854), (the 15th edition 1898), 'Colour Blindness' (1863), 'Microscopic Examination of Water' (1874), 'Arsenical Wall Paper Poisoning' (1879-89), and of numerous papers on disease of the eye contributed to the medical journals.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

David Hughes, Chemist, 45, High Street, Holywell.

Chas. H. F. Menhinick, Chemist, 6, Mount Pleasant Terrace and 23, Millbay Road, Plymouth.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

April 27, 1899.

Business in drugs and chemicals has been quiet during the past week, and with the exception of the advance in makers' price of Acid Benzoic from Gum, owing to scarcity and dearness of Gum Benzoin, there are no changes of any importance, or in fact any changes at all to record. Quinine, after a slight revival at end of last week, has again relapsed. Quicksilver has been in good demand at the late reduction. Mercurials are unchanged. Glycerin is rather weaker. Cod-liver Oil perhaps a trifle steadier. Sulphonal is firm. Phenacetin and Acetanilide weak. Iodides and Bromides unchanged, as also are Antipyrine and Phenazone. Acid Citric weak. Acid Tartaric and Cream of Tartar quiet. Sulphate of Ammonia firm. Sulphate of Copper is dearer, in sympathy with the metal. The advance in Cocaine has so far not taken place, but is still confidently predicted. The following prices rule for articles of chief interest :—

Acetanilide—Without change at 11d. to 1s. 2d. per lb., according to quantity and packing.

Acid Benzoic.—The price of the genuine article, made from gum, has been advanced by the makers 1d. per lb., 4d. to 4½d. per lb. being price now quoted for wholesale quantity, the advance is due to scarcity and dearness of suitable quality of *gum benzoin*.

Acid Carbolic—Is in brisk demand at firm prices, viz., 6⅝d. to 6¾d. for the 35-36° *ice crystals* in large bulk, other qualities of the refined acid and other packing being quoted in proportion. *Crude* 60° F., 2s. 1½d. per gallon ; 75° F., 2s. 6d. per gallon. *Liquid*, 95 to 98 per cent., of pale straw colour, 1s. 2d. per gallon, in 40-gallon casks.

Acid Citric—Is weak at nominally 1s. 2½d. to 1s. 3d. per lb. for *crystals* in 5-cwt. casks.

Acid Tartaric.—*English* 1s. 1d. per lb. delivered ; *foreign* 1s. 0¼d. per lb. *c.i.f.*

Ammonia Compounds.—*Bromide*, 2s. 2d. per lb. *Carbonate*, 3d. to 4d. per lb., according to make, quantity, and packing. *Muriate* : Commercial, free from metals, 26s. to 28s. per cwt. ; chemically pure small crystals, 30s. to 32s. 6d. per cwt. *Sal Ammoniac* : Sublimed firsts, 35s. ; seconds, 33s. Crushed for batteries : firsts, 37s. ; seconds, 35s. per cwt. *Sulphate* firm. Gray prompt, 24 per cent., London and Hull, £11 per ton. Leith prompt, £11 to £11 2s. 6d. Beckton not offering. Beckton terms, £10 17s. 6d. per ton. *Sulphocyanide*, 1s. 2d. per lb.

Antimony.—*Regulus* is quoted £39 per ton. *Crude Japan* (black sulphide), £24 10s. per ton.

Belladonna Root.—Really good root is held for 45s. per cwt.

Borax—Quiet but steady at 16s. 3d. per cwt. for *crystals*, and 16s. 9d. for *powder*.

Boracic Acid.—*Powder*, 28s. per cwt. ; *crystals*, 26s.

Bromides and Bromine—Are without change.

Camphor.—The market for *crude* is firmer. *China* has been done from secondhand at 126s. per cwt., *c.i.f.*, for March-April steamer shipment, and at 127s. 6d. per cwt. for more distant shipment. *Japan* is quoted 131s. per cwt., *c.i.f.* For *refined* the English makers have made no alteration in their price, which remains at 1s. 8¼d. per lb. for *Bells* and *Flowers*.

Chloride of Lime (Bleaching Powder).—*English*, £6 per ton.

Cinchona Bark.—The supplies at auction to-day, although larger than the previous sales, were again moderate, the total of all descriptions amounting to 4628 packages, as compared with 3446 packages in March last. There was the usual attendance of buyers, but the demand throughout was dragging, and only about one-fourth found buyers at a decline of 25 per cent. on the last London auctions, the average unit being 1⅝d., against 2¼d. at the previous sale. *Ceylon* : 457 bales and 11 cases offered and 100 bales sold, according to analysis ; Succirubra, stem chips fair at 3d. to 3¼d. ; renewed ditto, good rich at 8⅞d., ordinary 3⅛d. root 2¼d. *East India* : Of 854 bales 234 sold, red, stem, chips and shavings, good at 4¼d. ; Officinalis, chips and shavings, fair to good at 3d. to 5⅛d. ; renewed ditto, ordinary to fair at 3d. to 5¾d., good rich 7d. to 10d., good root at 5⅛d. ; Ledger, natural stem chips at 3⅞d. to 6d. ; hybrid ditto at 4⅛d. to 4⅜d., root at 4⅝d. *Java* : 330 bales and 12 cases offered and bought in. *South American* : Of 252 bales Bolivian cultivated Calisaya 99 bales flat sold, fair at 9¾d., but chiefly damages at 8d. to 9½d. Of 1758 bales and 59 serons soft Colombian, chiefly old import, 8 bales sold, fair at 1⅝d. Of 668 bales Cuprea, old import, 582 bales sold at 1⅛d. to 1⅝d. Of 38 bales Carthagena 15 sold at 1½d. to 1¾d. Red : 90 packages bought in. *African* : 99 bales offered and sold, fair quill at 4⅞d. to 6⅛d., broken quill and chips at 4⅞d. to 5¾d.

Cloves.—Privately, *Zanzibar* remain quiet and rates easy ; small business done includes March-May and April-June delivery at 3⅜d. Only small supplies offered at auction : 22 cases *Penang* bought in, good bright picked at 9½d. ; 30 boxes *Ceylon* sold, fair picked rather small at 3¾d. to 4d. dull unpicked at 3½d. pickings at 2¾d. ; 5 bales *Zanzibar* sold without reserve, fair at 3⅛d.

Coal Tar Distillation Products.—*Toluol* lower. Commercial 10d. per gallon, pure 1s. 3d. per lb. *Benzole* : 50 per cent. 8d., 90 per cent. 7¾d. per gallon. *Creosote* : 3½d. per gallon. *Crude Naphtha* : 30 per cent. at 120° C. 3d. per gallon. *Solvent Naphtha* : 95 per cent. at 160° C. 1s. 4d. per gallon, 90 per cent. at 160° C. 1s. 1d. *Anthracene* : A 3½d., B 2¾d. per unit. *Pitch* : 28s. per ton, *f.o.b.* *Tar* : Crude and refined 12s. 6d. per barrel, 2⅛d. per gallon.

Cocaine.—Market is firmer, it being reported that makers, prior to advancing their price, are trying to clear the market of whatever may be offering cheap from second hand, a manœuvre in which they have found themselves anticipated. Makers' price remains so far unchanged at 11s. 3d. to 12s. 3d. per oz. for the *Hydrochlorate* ; it is, however, stated that a considerable advance in these prices is inevitable, while makers appear to be by no means anxious to book orders at their present quotation.

Codeia—Market is firm ; makers appear to be short of stock and price is fully maintained at 12s. 3d. to 12s. 6d. per oz., according to quantity for the *pure*, the *salts* costing 1s. per oz. less money.

Cod-liver Oil—Is in *statu quo*, new non-congealing *Norwegian* oil being quoted at 58s. 6d. to 62s. 6d. *f.o.b.* in tin lined gallons of 25 gallons.

Cream of Tartar—Quiet. First white *crystals* are quoted 75s. per cwt. on the spot ; *powder*, 77s. to 78s. per cwt.

Essential Oils—Remain without change, there being practically nothing doing.

Gentian Root.—Good dry whole root is obtainable at 16s. 6d. to 17s. per cwt.

Ginger.—*Cochin* remains very dull. Of 496 bags and 377 cases only 71 cases sold, fair bold and medium rough cut and scraped at 70s., medium and small at 37s. 6d., small wormy at 23s. 6d. ; *Calicut*, good bold and medium rough at 33s. to 33s. 6d. Large supplies of *Jamaica* went off flatly. Of 1421 packages 582 sold at lower rates, fair to good medium and bold at 70s. to 78s., fair medium some lean 64s. to 68s., ordinary to good ordinary at 56s. to 63s. 2 barrels *St. Lucia* sold at 52s., also 20 barrels *African*, without reserve, at 18s. 6d.

Glycerin—Is rather weaker owing to the season of the year combined with the keen competition amongst makers for whatever orders there may be going.

Iodides and Iodine—Unchanged from last week.

Mercurials—Are in fair demand at last week's reduction to 2s. 9d. per lb. for *calomel* and 2s. 5d. per lb. for *corrosive sublimate*.

Morphia—Is quiet at unchanged price, viz., 4s. 6d. per oz. for the *Hydrochlorate* in powder.

Oils (Fixed) and Spirits.—*Linseed* quiet ; spot pipes, London £17 10s., barrels, £18 ; May-August, £17 5s. to £17 7s. 6d., September-December, £16 15s. to £16 17s. 6d. Hull, spot, naked. £16 10s. ; May-August, £16 5s. ; September-December, £15 12s. 6d. per ton. *Rape* quiet. Ordinary brown, spot, May-August and September-December, £21 5s. ; refined, spot,

£22 10s. per ton; Ravison, naked, spot, and May-August, £17 5s. to £17 10s.; September-December, £17 10s. *Cotton*: dull. London crude, spot, £14 15s.; May-August, £15; refined spot, £16 10s., according to make, etc. Hull, naked, refined, spot, and May-August, £15 7s. 6d.; crude, spot and May-August, £14 7s. 6d. *Olive*, Mogador, £30 to £31; Spanish, £30 to £32. *Cocoanut*, firm, Ceylon, spot, £25 10s. to £25 15s. landed; April-June shipment £24 per ton *c.i.f.* *Cochin*, spot £29 landed; April-May shipment £26 5s.; August-October £26 5s. per ton, *c.i.f.* *Palm*, Lagos, spot £23 10s. *Lubricating*, pale American spot 5s. 6d. to 7s. per gallon; black 5s. to 5s. 9d.; pale 5s. 9d. to 8s. per gallon. *Petroleum*, dull Russian spot 4⅝d. to 4⅜d. per gallon; American spot 5d.; water white 6d. to 6½d. per gallon. *Petroleum Spirit* 9d.; deodorised 9¼d. to 9½d. *Turpentine*, after being dearer, became dull, but has since become steadier at 33s. 10½d. to 34s. per cwt. for American, on the spot 32s. 9d., for May 30s., for June 28s. for July, 27s. 1½d. for September-December, and 27s. 9d. for January-April, 1899.

Opium.—There has been a fair demand for all kinds of *Turkey* during the past few days, and prices have ruled somewhat firmer for druggists' and manufacturing kinds. *Persian* is firm at 10s. 6d. per lb. for medium quality and 11s. per lb. for fine quality.

Oxalic Acid.—Price is unchanged at 3¼d. to 3½d. per lb. nett, free delivered London.

Phenacetin.—The agents for the makers continue to hawk this article round at constantly cheaper prices, and for large quantity the absurd price of 3s. 3d. per lb. has been named. A reliable article can be bought in moderate quantity at 3s. 6d. to 3s. 9d. per lb. *Bayer's* make still commands the somewhat fancy price of 6s. 1d. per lb. in original 1 lb. bottles.

Potash Compounds.—*Bicarbonate* 32s. 6d. to 35s. per cwt. *Bichromate* 3½d. per lb. *Bromide* 1s. 10d. per lb. *Chlorate* crystals 3¾d., powder 4d. per lb. nett, free delivered in London for spot delivery. *Permanganate* quiet but steady at 50s. to 52s. 6d. per cwt., according to quantity for small crystals and 5s. per cwt. more for large crystals in 1 cwt. keys. *Prussiate*, yellow English 8d. to 8½d. per lb., red 1s. 2d. per lb.

Quicksilver.—There has been a good business doing at present prices, viz., £7 17s. 6d. per bottle from the importer, and 6d. per bottle less from second hand, it being thought that we may shortly again see an upward movement in the article.

Quinine.—The market continues in the same anomalous condition. On Saturday there was a spurt, and speculators who had bought at the decline, say down to 1s. 3½d. per oz. for best brands of German *Sulphate* for August delivery, were able to re-sell at 1s. 4¾d. to 1s. 5d. At the beginning of the week the market, however, again sagged, and yesterday it was possible to buy for August delivery at 1s. 3d. to 1s. 3¾d. per oz.; the weak tone of the market has been further accentuated since Tuesday's bark sales by the decline in price of the unit, which then took place, say to 1½d. to 1¾d., as against 2¼d. to 2½d., which was the value fixed by the result of the previous Amsterdam bark sales; the fact must, however, not be lost sight of that the result of the bark sales on Tuesday can hardly be fully regarded as an absolute criterion of the exact state of the market. The makers of the favourite German brands, viz., *B & S* and *Brunswick*, maintain their price of 1s. 6d. per oz. for the *Sulphate*, in 1000 oz. lots, and do not admit that the lower prices, below this figure, are justified, or that there is prospect, for the present at least, of reducing their price. The whole matter remains a very curious anomaly, and it will be interesting to watch what the eventual outcome will be.

Soda Compounds.—*Crystals*, barrels, 55s.; bags, 52s. 6d. per ton ex ship, London. *Ash*, £5 to £5 10s. per ton according to strength. *Bicarbonate*, £7 10s. to £8 per ton for the commercial 97 per cent. quality, and 19s. to 20s. per cwt. for the fully bicarbonated. *Bichromate*, 2¾d. per lb. *Caustic*, white, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. per ton. *Hyposulphite* (*Antichlor.*), 6s. 6d. to 8s. 6d. per cwt., according to make, etc. *Iodide*, 11s. 10d. per lb. *Nitrate*, commercial, £8 2s. 6d.; refined, £8 10s. per ton.

Spices (Various).—*Black Pepper*: 40 bags Mangalore sold fine at 8¾d., Penang bought in at 5d., Lampong at 5⅛d., Tellicherry at 5⅜d. *White Pepper*: 18 bags Ceylon sold, good at 8d. Singapore bought in at 8¾d. and Penang at 8⅜d. *Long Pepper*: Of 80 bags Singapore 20 sold at 38s. *Sweet Red Pepper*: 5 cases bought in at 55s. *Chillies* quiet, 100 bags Japan bought in at 40s., 6 bags African sold at 47s. 6d. *Capsicums*: 21 bales Bombay sold at 31s. 6d. to 32s. 6d. *Cinnamon*: 40 bales ceylon sold, without reserve, ordinary quills at 5½; fair quillings at 5 d.: 19 bags good broken sold at 6½d. *Cinnamon chips*: Of 470 bags Ceylon, 40 bags sold at 2¼d. to 3½d. *Mace* quiet: 5 cases Penang bought in, fair pale at 1s. 7d.; 23 cases West India sold, good pale at 1s. 6d. to 1s. 7d. *Pimento* quiet: of 291 bags only 56 bags sold, fair to good fair 4⅜d. to 4½d.

Sulphate of Copper.—Is dearer in sympathy with the higher value of the metal at £24 10s. to £26 10s. per ton.

Sulphonal.—Makers' price is 17s. per lb., with a reduction for 4-cwt. contracts, for both *crystals* and *powder*.

To-day's drug auctions passed off quietly, there being no changes of any importance to record. Price of Ipecacuanha, both for the Rio and for the Carthagena kinds, was maintained. The following are the particulars:—

Aloes.—5 boxes *Curacoa* were bought in at 27s. per cwt. 50 cases *Cape* chiefly sold at 24s. for fair bright hard down to 21s. for rather dark and slightly drossy. 2 cases *Zanzibar*, part soft, were taken out at 80s. per cwt., 77s. 6d. only being bid. 52 kegs good *Socotrine* bought in at 75s. per cwt.

Annatto Seeds.—5 barrels of not very special quality sold at 1¾d. per lb.

Argol.—36 bags pale *Cape* sold at 32s. to 42s. per cwt.; 12 cases ditto, part selling at 33s. to 34s. per cwt., balance being held for 40s.

Asafetida.—100 cases, part sold at 35s. to 42s. per cwt., according to quality. 25 cases, part sold af 80s. for good to fine, but part somewhat soft.

Balsam Copaibæ.—7 cases somewhat thick sold at 1s. 4d. to 1s. 4¾d. per lb.

Balsam Tolu.—9 cases were bought in at 1s. 9d. per lb.

Buchu Leaves.—27 bales part sold at 6¼d. for rather small green leaves down to 3d. for yellow oblong, medium rounds were bought in 5d. per lb.

Cardamoms.—Fair to good *Ceylon* part sold at 2s. up to 3s. 3d. per lb., seeds fetching 1s. 11d. to 2s. 3d. per lb., fine bold *Mysores* being held for 3s. 6d. per lb.; 17 cases good *Manyalores* were bought in at 4s. per lb., highest bid being 3s. 3d. per lb.

Cascarilla Bark.—4 bales were bought in at 35s. per cwt.

Castor Oil.—25 cases fair Calcutta *firsts* taken out at 4d. per lb. 48 cases *seconds* held for 3¼d. per lb.

Castorum.—1 box fair thirds bought in at 60s. per lb., 1 box pickings at 30s.

Chiretta.—34 bales of good quality was held for 4½d per. lb.

Cinchona Bark.—24 bales *Lima* all sold at 3¾d. to 4d. per lb. for the sound, down to 2d. per lb. for 3CSD. 5 bales bold *Carthagena* bought in at 5d. per lb.

Coca Leaves.—4 bales good green leaves sold at 10d. per lb. 11 cases good green *Ceylon* were held for 9d.

Colocynth.—6 cases good pale *Turkey* apple were held for 1s. per lb.

Colombo Root.—37 bags medium sorts were bought in at 15s. per cwt., a bid of 13s. 6d. being declined.

Croton Seeds.—38 bags good bright were taken out at 65s. per cwt.

Cubebs.—14 bags of only fair quality bought in at 25s. per cwt.

Cuttle Fish Bone.—6 cases fine sold at 8d. per lb.

Dragon's Blood.—2 cases good lump were taken out at £11 per cwt. 4 cases low dull and drossy sold at £6 per cwt., and 2 cases drop at £6 10s. 1 case fair lump at £7, 1 bag pickings at 30s. per cwt., while two cases of really fine quality fetched the extravagant prices of £20 15s. and £21 5s. per cwt. respectively.

Ergot of Rye.—16 bags old, sifted, but still very wormy, sold without reserve at 6d. per lb.

Essential Oils.—10 cases *Cassia* bought in at 4s. 6d. per lb., 4 cases *West Indian Bay Oil* taken out at 6s. per lb., 10 cases fair commercial *Eucalyptus* at 1s. 1d. per lb.

Galangal Root.—55 bales of fair quality realised 22s. 6d. per cwt.

Gamboge—Sold at £6 15s. to £7 10s., 1 case good pipe fetching £11 per cwt.

Guaza.—40 bales very dusty bought in at 4d. per lb. 133 Robbins good tops at 5½d. 10 Robbins, good tops, sold at 5d. 25 Robbins, siftings, at 2d. per lb.

Gum Ammoniacum.—3 cases of low quality were bought in at 15s. per cwt., while 24 cases of medium to fair were taken out at 21s. to 30s.

Gum Benzoin.—Of 15 cases *Siam* part had been sold prior to

auction, remaining 4 cases were taken out at £16 10s. per cwt., 48 cases *Sumatra* part sold at £7 5s. to £7. 15s. per cwt. for medium seconds, and £5 to £5 10s. for lower quality.

Gum Kino.—2 cases genuine *Cochin* bought in at 8s. 6d. per lb. 14 packages ditto but very dark in colour held for 5s. per lb.

Gum Myrrh.—50 packages bought in at 75s. to 80s. for good native-picked, fair sorts selling at 40s.

Gum Sandrac.—5 casks ordinary realised 47s. 6d., fine being held for 53s. per cwt.

Honey.—10 cases good *Californian* were taken out, a bid of 37s. 6d. per cwt. being declined.

Ipecacuanha.—A lot of 14 bales *Rio* sold freely at 13s. up to 13s. 2d. per lb. 4 bales *Carthagena* sold at 11s. per lb., down to 10s. 6d. for 1CCD.

Jalap.—20 bales small but fairly heavy tubers were bought in at 5¼d. per lb.

Kamala.—6 cases not very bright were taken out at 6½d. per lb.

Kola Nuts.—5 bags fine bright *West Indian* bought in at 6d. per lb.

Nutmeg Paste.—10 cases rather dark bought in at 2d. per oz.

Nux Vomica.—20 bags small sold at 8s. per cwt.

Quince Seeds.—5 bags good *Cape* sold at 1s. 4d. to 1s. 5d. per lb.

Rhatania Root.—110 bales, part sold at 3d. to 4d. per lb. for chippy, balance being bought in at 6d. per lb.

Rhubarb.—27 cases good flat *Canton*, part sold at 11½d. per lb.; medium round *ditto* at 10d. per lb. down to 7d. for inferior; 1 case sold without reserve at 9d. per lb.

Sarsaparilla.—33 bales ordinary *Jamaica* part sold at 1s. 8d. per lb., down to 1s. 6d. per lb. for inferior; 11 bales good *Lima* were all bought in; 9 serons *Honduras* partly sold at 1s. 5d. per lb.

Senna.—117 bales *Tinnevelly* part sold at 2¼d. for small pale medium leaf, part broken, down to 1¾d. per lb. for small yellow and broken.

Star Aniseeds.—10 cases good bright *China* were bought in at 105s. per cwt.

Strophanthus Seeds.—3 bags fair *Kombé* bought in at 3s. 3d. per lb.

Tamarinds.—18 barrels good *West Indian* sold at 13s. per cwt.

Tonquin Beans.—4 cases good *Angosturas* were taken out at 3s. 6d. per lb.

Vanilloes.—102 tins *Mauritius* chiefly sold at 22s. 6d. per lb. for 3½ in. to 4½ in., up to 28s. per lb. for 8½ in. and 32s. per lb. for 9 in.

Wax.—2 cases *Cuban* realised £6 15s. per cwt. Fair to good *Jamaica* sold at £7 5s. to £7 15s. 16 blocks *African* fetched £6 10s. per cwt. 3 bags *Morocco*, £6 5s. 5 bags *Australian*, £7 2s. 6d. 5 bags *North American*, £7 7s. 6d. per cwt. 10 bales *Spanish*, £6. 41 cases white *Calcutta* bought in at £7 5s. per cwt.

Liverpool Market Report.

April 26, 1899.

The chief alterations in prices this week are higher rates for Spirits of Turpentine and a drop in Linseed Oil and Cottonseed Oil. The miscellaneous sales include Chilian honey at full prices, Syrian Fœnugrec, and parcels of Sierra Leone Chillies and Ginger on private terms. In chemicals, Nitrate of Soda is easier, and so are Pot- and Pearl-ashes, whilst advances have taken place in Ammonia Sulphate and Copper Sulphate.

Ammonia Salts.—Sulphate is dearer at £11 2s. 6d. per ton.

Canaryseed—Is quiet. Turkish still figures at 25s. 6d. to 26s. 6d. per 464 lbs.; 51 bags of Spanish sold at 35s. per 464 lbs., and sellers are firm for this rate.

Chillies.—20 bags of good Sierra Leone fruit sold privately, terms not stated.

Fœnugrec.—30 bags of Syrian sold ex store at 7s. per cwt.

Ginger.—138 bags of Sierra Leone changed hands on private terms.

Honey.—Pile X Chilian has sold to small amount at 28s. per cwt.

Linseed—Is steady on the spot, and to arrive the feeling is firmer. Sales comprise 100 tons, 4 per cent., Calcutta at 35s. per 416 lbs.; 300 tons, 4 per cent., Calcutta, April, at 34s. 9d.; 400 tons River Plate spot, 33s. 6d. per 412 lbs.; 230 tons River Plate spot, 33s. 6d. per 412 lbs.; to arrive, April-May, River Plate, 32s. 6d. per 412 lbs.; 140 bags of Spanish made 41s., ex store; 100 bags of Turkish made 42s., ex store.

Oils (Fixed) and Spirits.—*Castor* is quietly steady at 2⅞d. to 2 ⅛d. per lb. for Calcutta, 2¾d. for Madras, and 2⅞d. and 2⅝d. for French first and second pressure, respectively. *Olive* is firm in tone with somewhat limited consumptive demand, Malaga has sold for £31 10s. per tun. *Linseed* is easier in price, offering at 18s. 9d. to 19s. 6d. per cwt. *Cottonseed* is also a turn lower, and in export barrels is to be had for 17s. to 17s. 6d. per cwt. *Spirits of Turpentine* is very firm and has risen to 35s. 3d. per cwt. after falling to 33s. 3d. at the begining of the week.

Potash Salts.—*Cream of Tartar* is selling in retail amount at 75s. to 80s. per cwt., but is very firm. *Pearlash* has dropped to 32s. per cwt. and is very slack. *Potashes* also down to 23s. 6d. and 23s. 9d. per cwt. *Prussiate* is firm at 8¼d. to 8½d. per lb.

Soda Salts.—*Bicarbonate*: £6 5s. to £6 15s. per ton. *Caustic*: 76 to 77 per cent., £7 15s. per ton. *Crystals*: £3. *Nitrate* is easier; 8s. 1½d. to 8s. 4½d. per cwt.

Manchester Chemical Report.

April 26, 1899.

The market continues firm, and any changes are principally in an upward direction. In heavy chemicals, high strength Caustic Soda is very scarce, and 77-78 per cent. is quoted £8 per ton on rails. Bleaching Powder is in request for export, but without change in price, and Bicarbonate of Soda and Soda Crystals are fairly firm. Sulphate of Copper has advanced to £26 5s. per ton, best brands, delivered Manchester, and as the metal continues to fluctuate, this figure cannot be regarded as at all a firm one. Brown Acetate of Lime is still steady at £4 12s. 6d. to £4 17s. 6d. per ton, Manchester, Welsh and American, but as there is little arriving, holders are inclined to hold for higher figures. The low prices of Benzols are beginning to tell on Naphthas, which are rather weaker here, although generally Coal Tar Products are strong, especially Pitch and Creosote, which command 25s., *f.a.s.*, Ship Canal, and 3½d. respectively. White Sugar of Lead is lower at £24 10s. per ton, *c.i.f.*, and even at this there is anything but a good demand. Muriate of Ammonia is also rather lower. Yellow Prussiate is still scarce, and makers hold for full rates. Green Copperas is quiet, but there is no change in late rates. The local oil trade is developing, and next week early the tanker, "Orange Prince" is due from Batoum with 700,000 gallons; followed a day or two later by the "Baku" Standard with 1,500,000 gallons of refined oil. The "Circassian Prince" will load next month in Russia with about 850,000 gallons, and other vessels are due next month from Philadelphia, etc., with large consignments of Petroleum.

Newcastle Chemical Report.

April 26, 1899.

A shade more activity is displayed on this market through a better currency of shipping orders for the Baltic. Bleaching Powder is well sought after. In fact Soda Crystals can be put in the same category. Sulphur keeps scarce. Prices are:—Bleaching Powder, £5 7s. 6d. to £5 12s. 6d. Soda Crystals 45s. to 47s. 6d. Caustic Soda, 70 per cent. basis, price £7. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5. Sulphur £4 15s. to £5 per ton.

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The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Foreign Stamps, arranged in countries in small books, and marked separately at low prices, sent on approval. Discount from 25 to 60 per cent. allowed.—F. Franklin, 34, Exchange Buildings, Birmingham.

Singer's Model "B" Pneumatic Bicycle, with transparent gear case. Mudguards and accessories in first-class condition. £10.—H. R. Beckett, Chemist, Tonbridge, Kent.

A Light Trolley, suitable for delivering soda water and other heavy goods, 37s., carriage paid.—Arthur and Co., Cambridge.

Potass. Iodid., 9s. 9d. per lb., 4 lbs., 9s. 6d. per lb.; Iodoform Precip., 13s. per lb.; Bismuth Subcarb., 5s. 3d. per lb., 4 lbs. 20s. Offers wanted. 2×25 oz. tins and 32 oz. Quin. Sulph., B.P., 12 Savaresse's Santal Oil Capsules.—Eastman, Forest Lane, Stratford, E.

20 per cent. Below Cost.—Pepper's 11s. and 4s. 6d. Quinine and Iron, 4s. 6d. and 2s. 9d. Tarax. and Podophyllin, 1s. 6d. Tannin Gargle, 4s. 6d. Seigel's Syrup, 1s. 1½d. and 2s. 9d. Malt Balsam, 7s. and 3s. 6d. Rowland's Macassar, 2s. 6d. Walton's Kaloderma, 3s. Morson's Pepsin Wine, 2s. 9d. Henry's Magnesia, 4s. 6d. Liebig's Chemical Food, 2s. 9d. Freeman's Syrup Phosphorus, 2s. 6d. Joy's Cigarettes, 3s. 6d. Allen's Zylo Balsam, 2s. 9d. Gowland's Lotion, 2s. 6d. Beetham's Capillary Fluid, 3s. 6d. Rosetter's Hair Restorer, 3s. 6d. Hagan's Magnolia Balm, 2s. 9d. Bateman's Drops, Savory and Moore's 4s. 6d. Datura Tatula and 2s. 6d. Pancreatic Emulsion, 11s. Laylor's Phosphodyne, 1s. 6d. Saunder's Blanc de perle, 3s. 6d. Crown Hair Restorer, 4s. 6d, 2s. 9d., 1s. 1½d. Rook's Solar Elixir, 11s. Santaline, 2s. 6d. Tick-Heel, 2s. Bragg's Charcoal Biscuits, 10 galls. White Inseparable Lime Cream 4s. gall., 5 galls. Saponaceous Tooth Wash 20s. gall.—Morten Dodge, Chemist, Strangeways, Manchester.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Advertisement.

(Received too late for Classification).

CEYLON.—Good opening for a thoroughly competent, qualified MANAGER (unmarried) with first-class City experience. Those having had management preferred. About 30. Must be energetic, active, and capable. Commencing salary, say, £250 sterling, with liberal yearly advance. Free passage out and home, and free quarters. Four years' agreement. By letter to DAKIN BROTHERS, 87A, Leadenhall Street, London, E.C.

Publications Received.

MERCK'S (DARMSTADT) ANNUAL REPORT FOR 1898. Pp. 185. London: E. Merck, 16, Jewry Street, E C., March, 1899. From the Publisher.

PRACTICAL METHODS OF URINE ANALYSIS, for chemists and druggists, with notes on the composition of the normal and abnormal renal secretions. Pp. 58. Price 1s. 6d. London: *Chemist and Druggist* Offices. 1899. From the Publishers.

Trade Note.

The Birmingham Oxygen Company, Limited, Saltley Works, inform us that the company is putting down on the works a large plant for the manufacture of pure carbonic acid gas, under Stemem's and Murray's patents, of the most improved type. Hitherto all supplies of this gas have been sent to the Midlands from London and Manchester, so that this plant must prove a very valuable acquisition to the district.

Partnerships Dissolved.

(From the London Gazette.)

E. J. E. Marten, Fred T. T. Reynolds, and Percy Cryer (trading as Millward and Co.), Drysalters, Greenwood Street, Manchester, so far as regards E. J. E. Marten.

Geo. Raybould, J. Whitehouse, and William Brookes, Drysalters, Dudley, Worcs., so far as regards William Brookes.

Calendar for the Week.

Sunday, April 30. 4th after Easter. Sun rises, 4.37; sets, 7.19.

Monday, May 1. Sun rises, 4.35; sets, 7.20.

DEWSBURY AND DISTRICT CHEMISTS' ASSOCIATION, Town Hall, at 8.30 p.m.—Meeting to discuss the Pharmaceutical Council election.

SOCIETY OF CHEMICAL INDUSTRY, Burlington House, Piccadilly, W., at 8 p.m.—"The Life Work of Alfred Nobel," by Henry de Mosenthal.

Tuesday, May 2. ☾ 5.47 A. Sun rises, 4.33; sets, 7.22.

Wednesday, May 3. Sun rises 4.31; sets 7.23.

PHARMACEUTICAL SOCIETY, 17, Bloomsbury Square, W.C.—Meeting of Council.

Thursday, May 4. Sun rises 4.29; sets 7.25.

CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—Annual General Meeting.

LINNEAN SOCIETY OF LONDON, Burlington House, Piccadilly, W., at 8 p.m.—Papers will be read on "The Position of Anomalurus as Indicated by its Myology," by F. G. Parsons. "On *Notheia anomala*, Harv. et Bail," by Ethel S. Barton, and "On Variation in the Desmidiæ," by G. S. West.

MIDLAND PHARMACEUTICAL ASSOCIATION, Great Western Hotel, Colmore Road, Birmingham, at 7 p.m.—Annual General Meeting, followed by the Annual Dinner at 8 p.m.

Friday, May 5. Sun rises 4.27; sets 7.26.

ROYAL INSTITUTION, Albemarle Street, London, W., at 9 p.m.—William J. Russell on "Pictures Produced on Photographic Plates in the Dark,"

Saturday, May 6. Sun rises 4.26; sets 7.28.

WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP, Wadham Lodge.—Burgoyne's *v.* City Mills.

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COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Abram, Andrews, Ayrton, Baseombe, Blore, Boehm, Brunt, Burns, Burroughs, Butcher, Cuxon, Dickinson, Donellan Douthwaithe, Dowzard, Ellul, Finnemore, Floyd, Forret, Freirlle, Gerrard, Gostling, Grimble, Hanbury, Harris, Harrison, Hebden, Henderson, Hill, Hooper, Hyslop, Kent, Knowles, Lawrence, Lenfestey, Luke, Mumbray, Norgate, Oxen, Perfect, Pfeifer, Pinfold, Proctor, Row, Ruoff, Sargeant, Scott heild, Smith, Stephenson, Tew, Wellcome, Wendon, Williams, Young.

POLITICAL GOSSIP.

Mr. Bousfield's Weights and Measures Bill is a carefully-drawn collection of thirty-one clauses, such as one might expect from the hands of a draftsman who, like the popular member for North Hackney, is a counsel learned in the law as well as a member of the Institution of Civil Engineers. It does not violently disturb the existing Acts of 1878 and 1889, but it supplements them to a very considerable extent. "Cased" weights—that is to say, lead or pewter weights cased with brass, copper, or iron, as provided by Section 30 of the principal Statute—are to be abolished, and their use made illegal, presumably because the material and mode of construction of such weights are considered likely to facilitate the commission of fraud. Compulsory periodical re-verification is another of the points which the promoter of the Bill deems expedient for the protection of the buying public, and he proposes that the Board of Trade shall prescribe regulations for ensuring that all weights and measures and weighing instruments used for trade shall be re-verified not less than once in three years. It may be anticipated that considerable opposition to this proposal will be forthcoming from traders, and perhaps from local authorities, for few retailers will view with philosophic equanimity the prospect of additional visits from public officers of the inspector type, and, on the other hand, local authorities are not, as a rule, prone to regard with favour projects involving increased expenditure. True, re-verification will cost the trader nothing if his stamped weights be found correct, but a much larger number of inspectors and verification officers will be needed to see that the law is properly carried out, and multiplication in this connection cannot be recommended. From internal evidence there is reason to believe that the Bill is inspired by the Incorporated Society of Inspectors of Weights and Measures, in conjunction with the manufacturers of weighing and measuring instruments, and, if this assumption be correct, the measure would be invested with a heightened value as embodying the opinion of experts. The Bill would not interfere with weighing instruments used for scientific purposes and not for trade, but it proposes to bring Post Office weights and scales within the scope of the Weights and Measures Acts. The names on the back of the Bill as sponsors are Mr. Kearley. Mr. Parkes (Birmingham Central), and Sir Fortescue Flannery (Shipley).

Scottish Shop Assistants are to be congratulated on the passing of the Bill to provide them with seats which was read a third time on the 26th ult., and has been duly translated "to another place." Their champion is Mr. Robert Souttar, the member for Dumfriesshire, who is the national representative of the Y.M.C.A., and has obtained distinction in such varied departments of activity as literature, law, engineering, and temperance reform. His example, so far as the seating of shop assistants is concerned, has been followed by our own admirable Crichton—Sir John Lubbock—who, on May 2, brought in a Bill for the benefit of assistants in England and Ireland. It is to be feared that Sir John will not have such good fortune as the member for Dumfriesshire.

Lord Monkswell's Copyright Bills have once more faced the perils of a Parliamentary career. The proposals embodied in the measures may be thus summarised :—(*a*) Simplification of the term of copyright to the life of the author plus thirty years; (*b*) reversion to author of copyright in magazine articles, etc., after two years from date of publication; and (*c*) newspaper copyright in news for twelve hours after publication. The Bills have gone to a Select Committee consisting of the joint draftsmen, Lords Monkswell and Thring, together with Earls Dudley and Selborne, and Lords Knutsford, Hatherton, Hobhouse, Welby, and Pirbright. The House resolved on May 2 that this Committee should keep the result of its proceedings to itself at present. Minutes will be printed, but will not be distributed to anyone outside the Committee.

Sir John Leng (Dundee) misses the bracing air of his Fifeshire home, and on Tuesday last gravely asked the Commissioner of Works if he could not undertake to supply the atmosphere of the House with a little ozone. Mr. Akers Douglas, in reply, told the honourable member that he had been making himself acquainted with the mysteries of ozone production, but could not speak favourably of the merits of existing processes. They were costly and involved the generation of 12,000 volts of electric pressure. This settled the matter, and the members, amid laughter, concluded that microbes were preferable to the prospect of debates on controversial matters conducted by representatives charged with so high a tension. Mr. Akers Douglas should invite chemists to send him suggestions for manufacturing ozone in the "tabloid" or other convenient form.

The Committee on Trade have reached Clause 7 of the Food and Drugs Bill, and are certainly working very conscientiously through the maze of amendments on the paper. Mr. Long is having an anxious time, and has had to give way on several points. A point was scored by Mr. Kearley on Section 2, into which he has secured the insertion of a provision for dividing samples into four parts and proceeding with three of them in the well known manner. This success was followed up by Captain Donelan and Sir C. Cameron with proposals as to the duty of local authorities in taking action, and in the appointment of analysts. Sir Charles was responsible, too, for the adoption of the Clause, "That any public analyst appointed under the Sale of Food and Drugs Acts shall furnish such proof of competency as may from time to time be required by regulations which shall be framed by the Local Government Board." We shall await those Regulations with some interest.

Several Further Amendments have appeared since the commencement of the sittings of the Committee, and one or two by Mr. Hobhouse are noteworthy. The member for East Somerset has ventured into the thorny path of "preservatives," and he proposes to move that when any substance within that category is used, except salt, the name and the amount per pound or gallon of such substance shall be legibly stated on the containing vessel, package, or wrapper. The idea is good enough in theory, but if labelling is to be elevated into a universal mode of public protection, certain goods will have to be reviewed by literary critics before an estimate of their culinary or medicinal worth can be obtained. Mr. Hobhouse is strong on the efficacy of labels, and will urge the adoption of the principle in the case of legitimate admixtures of articles of food or drugs.

Unqualified Dispensers were the subject of a question which Major Rasch had put down to ask the Vice-President of the Committee of Council on Education on Thursday. The question, which, it is understood, has been instigated by Mr. W. S. Glyn-Jones, reads as follows :—"Whether the attention of the Privy Council has been drawn to the evidence and verdict given at an inquest held at Heaton Norris on January 9, 1899, from which it appears that a mistake by a doctor's unqualified dispenser resulted in the patient's death; and whether—seeing that (notwithstanding that the Pharmacy Act enacts that sellers of poisons must possess a qualification) it is not illegal for doctors to employ any class of unqualified persons to dispense medicines, however dangerous or poisonous—the Government will take steps to ensure that medicines containing poisons shall only be dispensed by those holding either a medical or pharmaceutical qualification." Sir John Gorst said the answer to the first part of the question was in the affirmative. The Privy Council had been in communication with the General Medical Council on the subject. The Executive Committee of that body, while admitting that occasional accidents may arise from the employment by qualified medical practitioners of careless or incompetent dispensers, considers such cases to be very rare, and believes that the best protection is afforded to the public by the responsibility of the practitioner for the acts or defaults of the servants whom he employs. Instances of such mistakes were not confined to dispensers employed by medical practitioners.

Publications Received.

Ventilation. Extracts from a Paper on "Hospital Construction" read by Dr. John W. Hayward before the Liverpool Architectural Society on November 7, 1898. Reprinted from the 'Builders' Journal and Architectural Record.' London: 1899. From the Publishers.

Landbouw en Mijnwezen in Nederlandsch Oost-Indië. Overgenomen en Bijeenverzameld uit het Koloniaal Verslag. Van 1898. Reprint from 'De Indische Mercuur, 1899.' Amsterdam; J. H. de Bussy. From the Publisher.

ROYAL INSTITUTION.

The annual meeting of the members of the Royal Institution was held on May 1, when the Duke of Northumberland, President, presided. The annual report of the Committee of Visitors for the year 1898, testifying to the continued prosperity and efficient management of the Institution, was read and adopted, and the report on the Davy-Faraday Research Laboratory was also read. Fifty-eight new members were elected in 1898. Sixty-three lectures and nineteen evening discourses were delivered in 1898. The books and pamphlets presented in 1898 amounted to about 271 volumes, making, with 659 volumes (including periodicals bound) purchased by the managers, a total of 928 volumes added to the library in the year. Thanks were voted to the President, Treasurer, and the Hon. Secretary, to the Committee of Visitors and Managers, and to the Professors, for their valuable services to the Institution during the year.

ELECTION OF OFFICERS.

The following gentlemen were unanimously elected as officers for the ensuing year :—President—The Duke of Northumberland; Treasurer—Sir James Crichton-Browne ; Secretary—Sir Frederick Bramwell, Bart. ; Managers—Sir Frederick Abel, Bart., Sir William Crookes, the Duke of Devonshire, the Right Hon. the Marquis of Salisbury, the Right Hon. the Earl of Halsbury, Dr. W. C. Hood, Professor D. E. Hughes, the Right Hon. Lord Kelvin, G.C.V.O., A. B. Kempe, Esq., H. Leonard, Esq., Sir Andrew Noble, K.C.B., A. Siemens, Esq., B. W. Smith, Esq., W. H. Spottiswoode, Esq., and Sir Henry Thompson, Bart. ; Visitors—W. H. Bennett, Esq., A. Blyth, Esq., M. Horner, Esq., E. Kraftmeier, Esq., Lt.-Col. L. W. Longstaff, F. McClean, Esq., H. F. Makins, Esq., L. Mears, Esq., Dr. R. Messel, L. M Rate, Esq., J. C. Ross, Esq , W. J. Russell, Esq., A. G. Salamon, Esq., Sir James Vaughan, and J. J. Vezey, Esq. His Grace the PRESIDENT announced that in the month of June next the Royal Institution of Great Britain would complete

ONE HUNDRED YEARS

of its existence, the first meeting of its members in the building in Albemarle Street having been held on June 5, 1799. The Managers had decided that this event, so interesting and memorable in the life of the Institution, and in the history of science in this country, should be duly celebrated. They had, therefore, arranged for the delivery of two commemoration lectures. The first of these lectures would be delivered at three o'clock on Tuesday, June 6, by Professor Lord Rayleigh, when His Royal Highness the Prince of Wales, Vice-Patron of the Institution, would preside and receive the honorary members ; the second of these lectures would be delivered at nine o'clock on Wednesday evening, June 7, by Professor Dewar, when His Grace the Duke of Northumberland, President of the Institution, would preside. It was further announced that the Lord Mayor had, in the kindest manner, consented to give a reception to the members, foreign guests, and representative men at the Mansion House, on the evening of Tuesday, June 6.

THE ROYAL SOCIETY'S CONVERSAZIONE.

The annual conversazione of the Royal Society was held at Burlington House on Wednesday, May 3. The exhibits were as usual of a varied character. Mr. W. R. Pidgeon, M.A., showed a New Influence Machine, with an output four times as large as a Wimshurst Machine, of which it is a modification. The machine is not greatly affected by dampness or dust, and the induction starts up almost instantly. Some experiments by Mr. A. A. Campbell Swinton with the Wehnelt Electrolytic Contact Breaker attracted considerable attention. Perhaps the most elaborate Photomicrographic Apparatus for High Powers is that designed for the Jenner Institute of Preventive Medicine by Mr. J. E. Barnard, and Mr. T. A. B. Carver, B.Sc. Its cost is about eighty guineas. Dr. Patrick Manson and Surgeon-Major Ross exhibited a gruesome series of microscopic objects, illustrating the Development of Filaria Nocturna in the body of the mosquito. Those interested in the Tsetze Fly Disease, and possibly any concerned with the new Beira railway, were favoured with a beautiful series of photographs illustrating districts in South Africa affected by that disease. These were taken and enlarged by Surgeon-Major Bruce. Possibly no single exhibit has a greater future before it than the Nernst Electric Lamp, which was shown by Mr. James Swinburne, and which has already been referred to in these pages. The cost of the lamp is about 10*d.*, and the filament, the only part not durable, is replaceable at a cost of less than a penny. At present it is not for sale in the British Isles. Sir William Crookes, F.R.S., occupied one of the bays of the principal library with a varied series of exhibits. Of special interest was a series of photographs of a group of lines high up in the ultra-violet region, characteristic of a new element associated with yttrium, and separated by long fractionation. To this element the name Victorium has been given. Professor Arthur Thomson, M.A., showed a model to illustrate how natural curliness of the hair is produced. Three factors require consideration in the production of curly hair : (1) the hair shaft, (2) the hair muscle, and (3) the sebaceous gland. Dr. Sorby, F.R.S., had on view some Actiniæ and other Marine Animals killed by the addition of a little menthol to sea-water, and theroby very fully expanded. They were then transferred to 4 per cent. formalin, and kept thus distended or mounted in balsam as lantern slides. A method was also demonstrated of Preserving Various Marine Animals as Museum Specimens in strong glycerin, a liquid whose index of refraction is so nearly that of the soft tissues that it makes the animals more or less transparent. Professor H. L. Callendar, F.R.S., showed some Recording Pyrometers—Platinum and Thermo electric. The platinum pyrometer, in addition to recording the temperature, regulates the furnace to within 1° at 1000° C. Mr. Everard F. im Thurn, C.M.G., sent some lovely water-colour sketches of Orchids of Guiana, while close by was a series of charts by Mr. H. N. Dickson showing (*a*) the distribution of temperature and salinity over the surface of the North Atlantic during 1896 and 1897 ; (*b*) the mean temperature of the surface waters of the sea round the British Isles, and its relation to the mean temperature of the air. The data for the maps of salinity have been obtained from about 5000 samples of water collected for the exhibitor by about thirty vessels. The salinity of each was determined by chlorine titration.

ENGLISH NEWS.

Chemists' Assistants' Association.—The last and one of the most successful musical and social evenings of the session was held at 73, Newman Street, W., on Thursday, April 27, under the able direction of Messrs. T. Morley Taylor and C. J. Strother. There was a large company of members, and an excellent programme of songs, recitations, and musical selections was gone through, the following gentlemen taking part: Messrs. Brady, C. J. Strother, C. Morley, A. Latreille, S. Jamieson, T. M. Taylor, Everson, and Frederick Davis, each of whom did his part well and was heartily applauded. Special mention should be made of the recitations by Mr. T. M. Taylor, which were delivered with the characteristic vigour so well known by members of the C.A.A. who have had the privilege of hearing Mr. Taylor at the various social evenings held in connection with the Association, and were, as usual, highly appreciated. Mr. Brady efficiently accompanied the songs. During the evening Mr. H. Hymans, the Hon. Secretary, gave a selection on the gramophone, which was kindly lent by Messrs. Douglas and Co. A very enjoyable evening was spent, terminating by the singing of "God Save the Queen."

Patent Medicine Gains.—People who order "Varixia" should see that they get the real article, and shun imitations, which are put forward merely for the sake of extra profit. So observes the *Daily Mail*, which explains that "Varixia" is Mr. Hall Grigor's panacea for varicose veins, and the authentic mixture is compounded as follows, the quantities representing a gallon :—

Witch Hazel	25 ozs.
Proof Spirit	1 quart.
Spirits of Chloroform	16 ozs.

Water to make up 1 gallon.

This is Mr. Grigor's own prescription. None other is genuine. The chemist who compounded the above mixture was told to put it up in eighty 2-oz. bottles. He charged 16s. 8d. for the lot, which works out at 2½d. a bottle. Mr. Grigor must have thought this a ridiculous undercharge, for he advertised the stuff at 2s. 9d. a bottle. These stirring details came out at Bow Street on April 26, when Mr. Grigor was again brought up on charges of obtaining money on false pretences. The chemist, Mr. Williams, of Leather Lane, questioned by Sir James Vaughan, said Varixia" might be a hair lotion—or anything else. It had little

or no medical value. "Many patent medicines are absolute frauds," remarked the chemist in a burst of candour. "They depend for their success not so much on their intrinsic merits as on extensive advertising." Mr. Grigor was again remandod.

Overdose of Chloroform.—An inquest was held at Grimsby, on April 26, on the body of William Drury Mason, 42, a retired chemist and druggist, of Stirling Street, Grimsby, who was found dead in bed on the previous Tuesday. It appeared that deceased was in the habit of taking narcotics to inducc sleep, and an empty bottle, which had contained chloroform, was found underneath his pillow. Death was due to paralysis of the heart, caused by inhaling an overdose of chloroform. The jury returned a verdict of "Death from misadventure."

Overdose of Laudanum.—Mr. T. B. Cull, coroner for North-West Staffordshire, sat at the Wellington Inn, Uttoxeter, on Wednesday, April 26, to inquire into the circumstances of the death, on April 24, of Henry Woodward, 62, a retired chemist and druggist, of Uttoxeter.—Evidence was given to the effect that it was his custom to take a little laudanum evcry day and each night to give him ease and enable him to sleep, and, from the appearance of the bottle which had contained the drug, he did not seem to have taken more than his usual allowance.—Dr. Fletcher stated that he had attended the deceased for a number of years. Mr. Woodward suffered from cardiac asthma and witness was aware that he was in the habit of taking laudanum, as well as smoking a small quantity of opium, but it was not in accordance with his instructions. Indeed, witness was strongly opposed to their use. When he visited the deceased on Monday evening he found symptoms of opium poisoning. He called in Dr. Broster, and everything was done to restore him, but, unfortunately, without avail.—A verdict of death by misadventure was returned.

The 'Thornton-Pickard Album of Prize Pictures' is an interesting compilation of over forty photographs selected from between two and three thousand sent in for the £200 prize competition. A list of the prize-winners is given, together with a short description of the prize pictures. It is printed on excellent paper, and is published at 6d. by Messrs. Dawbarn and Ward, Ltd, 6, Farringdon Avenue, London, E.C.

Alleged Poisoning by Dandelion Flowers.—An inquest was held at the King's Arms, Alcester Lanes End, King's Heath, on May 1, by Mr. E. Docker (Coroner for North Worcestershire), touching the death of Albert James Tennant Sellars, aged 6, of King's Heath. On Thursday, April 27, the child complained of being thirsty, and becoming unwell Dr. C. H. Harris was sent for the next day. He found him in a state of collapse, and that he had been vomiting frequently.—The mother said one of the children told her that deceased had eaten a quantity of dandelion flowers out of the garden, but she had no idea that would make him ill.—Dr. Harris was of the opinion that death had resulted from irritant poison, which caused excessive vomiting—probably the dandelion leaf.—The jury returned a verdict that death was the result of vomiting, caused by an irritant poison, the deceased having eaten a quantity of dandelion flowers.

Perry Hill British Botanic Garden.—We understand that, although rapid progress is being made in planting this Garden, the work will not be sufficiently advanced for opening until June 1 next.

IRISH NEWS.

The Belfast City Analyst and Somerset House have come to different results in an analysis concerning margarine versus butter!

Sir Peter O'Brien, at the January Assizes in Belfast, commenting upon the evidence of Mr. Hodges, analyst, regarding blood stains, said to the jury: "Yes, gentlemen, Science is great, but it has not yet made it possible to state that these are the stains of human blood." Just recently, however, in a similar case, Mr. Moss, F.I.C., F.C.S., gave evidence as to the presence of human corpuscles in certain blood stains found upon clothing; from which one may conclude that some learned gentlemen flatter Science without paying her honour.

The Ulster Medical Hall (Davidson and Hardy), Belfast, which was purchased a year ago by the Lurgan Estate Company, and fitted up in palatial style with electric light, mural mirrors, etc., is again for sale.

Mr. James Arthur Gibson, Edinburgh pharmacist, writing to the press, condemns the system of consumptive hospitals run by doctors in private practice. The Belfast Forster Green Hospital he considers totally unsatisfactory, except as regards "house and grounds."

The Royal Dublin Society has presented the first Boyle gold medal ever struck to Dr. George Stoney in honour of his signal achievements in the particular domain of chemical research which is specified by the well-known law, the discovery of which confers equal glory upon Boyle and Mariotte.

SCOTTISH NEWS.

Edinburgh District Chemists' Golf Club.—The return match between six golfers representing pharmacy in Glasgow against six members of the Edinburgh District Chemists' Golf Club was played at Troon on Thursday, April 27. Two rounds (36 holes) were played and resulted in favour of the Edinburgh Club by 16 holes:—

Glasgow.		Edinburgh.	
Mr. W. L. Currie	0	Mr. D. N. Wylie	1
,, R. McAdam	1	,, G. Lunan	0
,, G. Macdonald	0	,, J. G Anderson	10
,, G. Robertson	0	,, G. Robertson	15
,, A. McAdam	12	,, H. D. Alexander	0
,, J. Moir	0	,, W. B. Cowie	3
	13		29

In the Hole-and-Hole Competition (first tie) Messrs. H. D. Alexander, G. Robertson, R. Wood, J. Bowman, jun., J. Stott, J. Bowman, and W. C. Baker, beat Messrs. J. Prentice, D. N. Wylie, C. F. Henry, W. B. Cowie, A. G. Bruce, W. Swan, and J. Morison respectively. The following players had each a walk over:—A. W. Wilson, G. Lunan, A. Sharp, W. Lyon, G. B. Laing, W. H. Whellans, J. G. Anderson, G. Senter, J. W. Carmichael, R. W. Dunn, and T. Miller. The second tie must be finished by May 13.

SCHOOL OF PHARMACY NEWS.

Presentation to Mr. C. C. Frye.—On Monday last, at 5 p.m., the students of the School of Pharmacy presented a gold chain to Mr. Frye, late Laboratory Demonstrator, on the occasion of his departure from London—already mentioned in this column. Mr. Frye is perhaps tho most popular man who has ever been connected with the School, and all the present students turned up to do him honour. Mr. C. M. Battle, who made the presentation, in an able and excellent speech, touched upon the many ways in which Mr. Frye has endeared himself to the "Square" men of his time, gaining not only their respect but their regard and affection, so much so that the words actually spoken by one student to another well expressed the sentiments of all—"Old Frye *is* a good sort; he is more like a coach than a demonstrator." The kindly interest which he took in the work of each individual man, the extra help always so freely given to stragglers, the patient and gentlemanly way in which he put up with boisterous pranks in the laboratory when things were lively, and lastly, his excellent capabilities as a sportsman, especially in first-class football, and the help he has given to the Committee of the P. F. C., were each dwelt upon in turn by the speaker; and as he eloquently recalled to them the many good qualities of their departing friend, the students cheered like mad.—Mr. Frye, in response, after tendering thanks for the tribute presented to him and the warm reception he had met with, expressed his deep regret in leaving the "Square," and hoped all his hearers would be successful in the approaching examinations. He then generously endeavoured to disclaim any merit of his own in the amicable relations existing between them; but his audience knew his worth, and, when he finished, gave vent to such an outburst of enthusiastic cheering as the old lecture theatre has seldom heard. The good wishes of all "Square" men are with him in his new career, and he may well be proud to know that he takes away

with him that which cannot be represented by the intrinsic value of a testimonial—that which money cannot buy—the affection and esteem of all who knew him.

Permission Has Been Granted to the Cricket Club at the "Square" to practise in Regent's Park. It is hoped that many students will avail themselves of this opportunity for healthy recreation, especially at Wednesday evening practices, when a few hours from study will do more good than harm, however near the examination may seem. As an encouragement to the studious, it was mentioned at a recent lecture that it would be a fine opportunity for studying the characteristic features of Rad. Taraxaci.

PERSONALITIES AND BUSINESS NOTES.

Mr. Victor Kissell has purchased the business of Mr. J. W. Taplin at 298, Harrow Road, W.

Mr. J. E. Levis, pharmaceutical chemist, has just opened a very handsome pharmacy in Skibbereen, which has been fitted up by Messrs. Evans, Sons, and Co., Liverpool.

Messrs. Goldon and Co., Parsonstown, have had alterations and additions made to their shop fittings. The improvements have been carried out by Messrs. Evans, Sons, and Co., Liverpool.

Mr. Spencer Fargher has removed from 300, Bute Street, to larger premises at 21, Caroline Street, Cardiff. The new pharmacy, which is a very handsome one, has been fitted throughout by Messrs. Southall Brothers and Barclay, Birmingham.

Mr. Henry Scott, M.P.S. and S.M.C., has purchased the pharmacy lately carried on by Messrs. Barton and Son at Edge Lane, Liverpool.

Mr. Saml. L. Clelland, L.P.S.I., Duncairn Gardens, Belfast, owing to increase of business, is having new branch premises built on the Antrim Road.

Mr. S. H. Tottle, chemist, of Liscard Road, Liscard, will shortly open, as a branch, the business formerly carried on by Mr. A. Dand at 119, King Street, Egremont, Cheshire.

Dr. Meredith Whitla, examiner in pharmacy, has been appointed *locum tenens* to the Monaghan Dispensary District.

Mr. J. W. Deakin, chemist, Northwich, has been elected Chairman of the Northwich Urban District Council, and is therefore now a Justice of the Peace for the county of Chester.

Mr. William Davies, chemist and druggist, has opened a new pharmacy at Lampeter, S. Wales, in connection with his brother, Mr. E. F. Davies, chemist and druggist, who is in business at Llanybyther, where he will remain in charge. The two establishments will be worked under the title "Davies Brothers, The Pharmacy, Lampeter and Llanybyther."

Mr. H. W. Lloyd, pharmaceutical chemist, has opened a new pharmacy at 72, High Street, Bala, N. Wales, the entire fittings of which have been furnished by Messrs. Ayrton and Saunders, Liverpool.

Mr. J. J. Tremeer, chemist, of Barnstaple, has been appointed a Justice of the Peace for the Borough of Barnstaple.

Mr. Arthur E. Ekins, pharmaceutical chemist, and public analyst to the Hertfordshire County Council, reports that during the quarter ending March 31, 1899, thirty-five samples of food and drugs were submitted to him for examination, of which four samples were found to be adulterated.

Receiving Order in Bankruptcy.

(From the London Gazette.)

William John H. Fletcher, Physician and Surgeon, North Gate, Uttoxeter, Staffs.

Trade Notes.

"Tabloid" Veterinary Hypodermic Drugs.—Messrs. Burroughs, Wellcome and Co. submit samples of their new "Tabloid" hypodermic drugs for veterinary use. These products are perfectly soluble, and contain accurate doses of drugs compressed so as to be portable and compact. Injections are prepared immediately before use by simple solution in water. There is no trouble in weighing small quantities of the dry drug, and no danger of the solution becoming septic, irritating or deficient in strength. The difficulty of carrying or keeping solutions for injection is also avoided, and a complete outfit of hypodermic drugs, ready divided into accurate doses, can be carried in a small pocket case.

Messrs. Southall Bros. and Barclay, Ltd., Birmingham (incorporated 1898), send a copy of the report of directors to be presented at the ordinary general meeting of the company to be held at the Grand Hotel, Colmore Row, Birmingham, to-day (Friday, May 5) at 12 o'clock noon. The accounts show that after providing for bad debts and depreciation there is a profit for the year of £11,126 15s. 2d. After deducting £5639 11s. 9d. the proportionate part of the profits accrued to July 4, when the sale of the business to the company was completed, and £360 15s. 1d. the interest to vendors from July 4 to December 31, there remains £5126 8s. 4d., which it is proposed to appropriate as follows:—Dividend on the preference shares at the rate of 5 per cent. per annum from the date of payment to December 31, 1898, £1617 6s. 11d.; dividend on the ordinary shares at 5 per cent. (being approximately at the rate of 10 per cent. per annum from July 4 to December 31, 1898), £3150; balance to be carried forward to next account, £359 1s. 5d.

Marriages.

Ward—Holgate.—On April 27, at Bolton Abbey, Yorkshire, by the Rev. A. P. Howes, M.A., Rector, T. Armistead Ward, F.C.S., M.P.S., of Blackburn, to Alice, only daughter of Thomas Holgate, of Burnley.

Curtis—Churchill.—On April 27, at Watford Congregational Church, by the Rev. F. E. J. Bird, of Thornton Heath, Frederic George Curtis, Pharmaceutical Chemist, of Folkestone, to Edith Marion, youngest daughter of the late Mrs. Churchill, of Thornton Heath.

Obituary.

Sims-King.—On April 5, Thomas Sims King, Chemist and Druggist, Berkhamsted.

Lawrence.—On April 22, Edmund Lawrence, Chemist and Druggist, Welwyn (Herts). Aged 74.

Mason.—On April 25, William Drury Mason, Chemist and Druggist, Grimsby. Aged 42. Mr. Mason had for many years been connected with the Pharmaceutical Society as an Associate, and latterly as a member. He had retired from business,

Woodward.—On April 26, Henry Woodward, Chemist and Druggist, Uttoxeter (Staffs). Aged 62. Mr. Woodward had been a member of the Pharmaceutical Society since 1888, but was retired from business.

Gibb.—On April 30, Ebenezer Gibb, Chemist and Druggist, New Byth. Aged 68. Mr. Gibb had been a member of the Pharmaceutical Society since 1883.

PHOTOGRAPHIC NOTE.

Ammonium Persulphate Tabloids are claimed to overcome the difficulty which many have experienced in obtaining true ammonium persulphate, and to be the only preparation on the market which allows of a reliable density correcting solution being prepared without weighing or measuring the chemical. Such commonly used strengths as 1¼ per cent. and 2½ per cent. or 5 per cent. can be immediately prepared by dissolving two ammonium persulphate tabloids (gr. 11) in 4 oz., 2 oz., or 1 oz. respectively of water. In connection with this new density corrector, attention may also be directed to sodium sulphite tabloids, which afford a convenient means of preparing the necessary stop-bath.

EXTRACTS FROM CONSULAR REPORTS.

The Ruthless Cutting Down of Olive Trees in many parts of the Morea (Greece), to make room for currant plantations, has been the cause of much loss of revenue to the community, inasmuch as the export trade in olive oil, which was at one time considerable, has now almost ceased, the oil produced of late years being barely sufficient for local consumption. According to the report of Consul F. B. Wood, all currant growers in that part of the country would now gladly exchange their vineyards for olive groves, but as it takes an olive tree about fifty years to come into full bearing, the change is scarcely practicable. Olives both black and green are, however, produced in large quantity in Northern Greece and Messenia, but in size and flavour are said to be much inferior to the French and Spanish produce.

For the Sake of Economy, many of the proprietors of currant and grape vineyards in Greece, and others who did not believe in the efficacy of "Bouillie Bordelaise" as a remedy against "peronosporos," last season neglected to treat their vineyards with a solution of sulphate of copper, the consequence in many districts being the partial or total loss of the crop. It is only since 1897 that sulphate of copper has been imported in the Morea district, when about 2500 tons were imported, principally from Great Britain; this was sold retail at £20 per ton. Last year the importation was about 3000 tons, which fetched on an average £22 per ton. This year, owing to the rise in the price of copper, the sulphate has gone up to £28 per ton, duty paid, or the equivalent of £23 15s., f.o.b, London or Liverpool. As the solution is apparently the only remedy known against the disease, the importation is likely to increase annually for some years to come.

The Imports of Sulphate of Copper from Great Britain into Ancona (Italy) during 1898 amounted to 1077 tons, in addition to 470 tons of oxides and acids. The prices for the sulphate reached 68 lire the quintal, or £2 10s. per 220 lbs. Its increased consumption for preventing disease of the grape vines is the cause of the rise in price.

Want of Capital has paralysed possible competition with the German Syndicate which owns the sulphur mines at Bellsio in the province of Ancona, from which during last year 8500 tons of raw brimstone and refined sulphur were extracted, and was exclusively used in Italy for the cultivation of the grape. The consumption and price of this article increase every year, and concessions for the search of sulphur in the district around Ancona have been granted, but, as intimated above, operations are paralysed for want of capital. From excavations made in one or two localities it is reported that the quantity obtainable would be superior to all the Romagna mines, but development is impossible under the actual circumstances.

Chemical Imports into Ghent last year show a decline of 5309 tons as compared with 1897, for, while phosphate rock from Florida exceeded the quantity imported the preceding year by 2660 tons, and nitrate from Peru was about the same, there was a falling-off in the sulphates of soda and ammonia, bleaching powder, bichromate, and carbonate of soda, etc. The quantity of nitrate from Chile and Peru imported during 1898 was 9836 tons, and it is expected that this commerce will develop considerably in Ghent when the waterway has been deepened to admit vessels of greater draught.

The American Export Trade in Phosphate is worth 5,000,000 dollars a year; shipments to Germany amounting in value to 2,000,000 dollars, and shipments to Great Britain 1,000,000 dollars; Canada, Japan, Australia, and the West Indies are also good customers.

The Patent Vegetaline Company which it was proposed to form for the preservation of milk for exportation from the Cherbourg district in France by the use of a vegetable extract (see *P. J.* [4], 6, 334) Acting-Consul Haag is informed, has been floated, and will work at Dol, and is desirous of exporting milk packed in iron drums. The route to the United Kingdom is expected to be either *vid* Southampton or *vid* Dunkirk, but nothing is definitely settled as yet.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

May 4, 1899.

Business has not been very active during past week, while the changes to record are not very important. There have been two successive advances of 2s. 6d. each in price of Quicksilver, bringing price back to £8 2s. 6d. per bottle, while makers of mercurials have, in consequence, advanced their price the penny which was taken off only a short time since. Ipecacuanha remains very firm, both for Rio and Carthagena. Acid Carbolic continues in good demand. The interest taken in Quinine continues, although same has for the moment slackened somewhat, pending the result of to-day's bark sale in Amsterdam becoming known. In Cod-livor Oil there has been rather more doing, the low price having tempted buyers. Glycerin very weak, there being a rumour that there has been a break up in the Convention of the makers, which if confirmed will probably mean wild selling, almost *à tout prix*. Buyers of the article will therefore do well not to let themselves be tempted by apparently cheap offers. Bromides and Iodides are steady at unchanged prices. Antipyrine, Phenazone, Sulphonal in good demand. Acetanilide quiet. Phenacetin very weak, makers apparently quoting constantly lower prices against each other in the struggle for a vanishing business. Borax and Acid Boracic steady. Acid Citric, Acid Tartaric and Cream of Tartar quiet. Sulphate of Ammonia strong and dearer. The following are prices ruling for some articles of chief interest.

Acetanilide—Quiet at 11d. to 1s. 1d. per lb., according to quantity and packing.

Acid Carbolic—Is in very good demand, prices being 6⅝d. to 6¾d. per lb. for 35-36° *ice crystal* in 2½ cwt. drums and overcasks, 7¼d. per lb. for 39-40° *ice crystal*, and 8¼d. to 8½d. per lb. for the 39-40° *detached crystals* (which is now the B.P. quality) in large bulk packing, smaller packing being charged dearer in proportion. *Crude*: 60° F., 2s. 1d. per gallon; 75° F., 2s. 6d. per gallon. *Liquid*: 95-98 per cent., of pale straw colour, 1s. 1d. to 1s. 2d. per gallon, according to quantity, packed in 40 gallon casks.

Acid Boracic—Quiet but steady, at 26s. per cwt. for *crystals* and 28s. per cwt. for *powder*.

Acid Citric—Is quiet at 1s. 2½d. to 1s. 3d. per lb. for *crystals*, in 5 cwt casks.

Acid Tartaric—Quiet at 1s. 1d. per lb., delivered, for English and 1s. 0½d. per lb. *c.i.f.* for foreign.

Ammonia Compounds.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to quantity, packing, and make. *Muriate*: Commercial, free from metals, 25s. to 27s. 6d. per cwt.; chemically pure small crystals, 30s. to 32s. 6d. per cwt. *Sal Ammoniac*: Sublimed firsts 35s. per cwt., seconds 33s. per cwt., crushed for batteries 2s. per cwt. more. *Sulphate*: Very strong and in active demand. Grey prompt 24 per cent., London, £11 5s.; Hull prompt £11 2s. 6d., July-Dec. £11.; Leith prompt £11 5s.; Beckton prompt £11 5s, May-Aug. £11 2s. 6d.; Beckton terms prompt and May-Sept. £11 2s. 6d. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb.

Antipyrine and Phenazone—Are steady at unchanged prices. *Dr. Knorr's Antipyrine* continues in good demand, while the well

known and favourite Star Brand of *Phenazone* is now so generally preferred that other makers are getting tired of competing for the orders, especially at present low prices.

Antimony.—*Regulus* is dearer, in sympathy with the general advance in metals at £40 per ton, while the *crude* (black sulphide) is quoted 24s 6d. to 25s. per cwt. ex-wharf.

Ashes.—*Potash* 24s. per cwt., *Pearlash* 32s. 6d. per cwt.

Atropine.—Makers are very firm at 17s. 10d. per oz. for the *pure*, and 15s. 6d. per oz. for the *sulphate*, B.P.

Bismuth.—The commercial quality of the *metal* remains at 5s. per lb., *Bismuth Subnitrate* being quoted 5s. 1d. per lb., and *Bismuth Carbonate* 5s. 8d. per lb.

Bleaching Powder (Chloride of Lime)—Steady at £6 per ton for *English*.

Borax—Steady at 16s. 3d. per cwt. for *crystals*, and 6d. per cwt. more for *powder*.

Bromine and Bromides—Are without change at 2s. 2d. per lb. for *Bromine* in case lots of 60 lbs., 1s. 10d. per lb. for *Potassii Bromid.*, 2s. 2d. per lb. for *Ammon. Bromid.*, and 2s. 1½d. per lb. for *Sodii Bromid.*

Camphor—Is quiet and unchanged both for *crude* and for *refined*, with not very much business passing.

Castor Oil.—Dull and inactive. *Belgian* first pressing, £25; July-December, £24 10s.; second pressing, spot, £24 per ton, ex wharf; Hull manufactured, £24 15s. to £25 per ton in barrels, 2¾d. to 2$\frac{15}{16}$d. per lb. in cases, for prompt delivery, ex wharf, London; London pressed, 24s. 6d. per cwt. in barrels; French, 25s. per cwt.

Cinchona Bark.—Up to time of going to press no reliable advices had come to hand as to results of to-day's bark sale in Amsterdam. Opinions continue to be divided as to what such result has been, some people thinking that prices realised will show a moderate decline, while others incline to the opinion that, in view of the relatively moderate quantity in sale, the value of the unit will have been fairly maintained.

Cloves.—Privately the market for *Zanzibar* has been more lively, and an advance in price resulted of $\frac{1}{16}$d. to ⅛d., closing quiet but steady thereat; March-May and April-June delivery 3$\frac{7}{16}$d., July-September 3$\frac{15}{32}$d. At auction no *Zanzibar* or *Penang* were offered.

Coal Tar Distillation Products.—*Toluol*: Commercial, 10d. per gallon; pure, 1s. 3d. per lb. *Benzole*: 50 per cent., 8d. per gallon; 90 per cent., 7½d. *Creosote*: 3½d. per gallon. *Crude Naphtha*: 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 4d. per gallon; 90 per cent. at 160° C., 1s. 1d. per gallon; 90 per cent. at 190° C., 1s. 2d. *Anthracene*: *A*, 3½d. per unit; *B*, 2¾d. per unit. *Pitch*: 28s. per ton *f.o.b.* *Tar*: Crude, 12s. 6d. per barrel, 2⅛d. per gallon; refined, 12s. 9d. per barrel, 2¼d. per gallon.

Cocaine.—Market is very firm, although makers have so far not advanced their price, which remains 11s. 3d. to 12s. 3d. per oz. for the best brands of the *Hydrochlorate*, in 25 oz. tins. Anything offering from second hand at 11s. is eagerly snapped up, and everything points to the prospect of a decided rise in the value of the article.

Codeia—Firm at 12s. 3d. to 12s. 6d per oz. for the *pure* and 11s. 6d. for the *Muriate*, *Phosphate* and *Sulphate Salts*.

Cod liver Oil.—There has been rather more business doing during the past week, the low price having, as it would seem, tempted buyers. Good brands of new non-congealing *Norwegian* oil are still obtainable at 60s. per barrel, *f.o.b.*, in tin-lined barrels of 25 gallons each.

Cream of Tartar—Quiet. First white *crystals* are quoted 75s. per cwt.; *powder*, 77s. to 78s. per cwt., according to percentage, etc.

Galls.—Business in *China* has been very limited. Should, however, the advance in silver be maintained, it will mean higher prices for this article. *Persian*: in more demand at full rates; *blues* at 62s. 6d., and *greens* 55s., but holders are now asking higher figures. *Smyrna*: in moderate supply, price remaining firm.

Ginger.—Small supplies at auction met slow demand. Of 340 bags and 10 cases *Cochin* only 55 bags sold, chiefly bright washed rough, damaged, at 21s., and small shrivelled washed at 16s. 6d.; 10 cases good bold and medium rough *Calicut* bought in at 34s. Of 361 barrels *Jamaica* 72 barrels sold steadily, medium to fair bright at 69s. to 72s. 6d., good ordinary at 62s. to 64s.; common qualities neglected.

Glycerin.—Market for *crude* is fairly steady at about £29 to £30 per ton, for the quality most suited for refining purposes, while *refined* is somewhat weak at 52s. 6d. per cwt. for *English* and 54s. to 57s. 6d. for *German* best white double-distilled, chemically pure, 1260° quality, in 56 lb. tins (2 or 4 tins in a case).

Iodine and Iodides—Unchanged and 7½d. per oz. for the commercial *Iodine*, 10s. 6d. per lb. for *Potassii Iodid*, 11s. 10d. per lb. for *Sodii Iodid.*, 14s. 3d. per lb. for *Ammon. Iodid.*, 13s. 10d. per lb. for *Iodoform*, *crystal*, *powder* and *precipitate*, and 12s. per lb. for *Iodine* resublimed.

Ipecacuanha.—Holders are firm at 10s. 9d. per lb. for *Carthagena* and 14s. per lb. for *Rio*. Available stock continues quite limited, while there is, so far, no prospect of any large further supplies.

Menthol—Quiet and unchanged at 7s. to 7s. 3d. per lb. according to quantity and brand for best dry *white crystals*.

Mercurials.—In consequence of rise in price of *Quicksilver*, makers to-day advanced their price for *Mercurials* 1d., and now quote 2s. 10d. per lb. for *Calomel* and 2s. 6d. per lb. for *Corrosive Sublimate*.

Morphia—Is without change at 4s. 6d. per oz. for the *Hydrochlorate* in *powder*, and 2d. per oz more for the *crystal salt*. Makers say that they are very busy executing orders against contracts previously made.

Nitrate of Silver—Is firm and slightly dearer in consequence of the rise in value of the *metal*. *Crystals* are, however, still obtainable at 1s. 6d. per oz. (large quantity being quoted somewhat lower), the *sticks* being dearer in proportion.

Oils (Fixed) and Spirits.—*Linseed* is firmer at £17 10s. per ton for London spot pipes; barrels, £17 17s. 6d.; June-August, £17 10s.; September-December, £16 17s 6d. to £17. Hull spot naked, £16 15s.; June-August, £16 5s.; September December, £15 15s. *Rape* dull; ordinary brown spot, June-August and Sept.-Dec., £21 per ton; refined spot, £22 10s.; Ravison spot, naked, £17 2s. 6d.; June-Aug. and Sept.-Dec., £17 5s. *Cotton* quiet; London crude spot, £14 12s. 6d.; June-August, £14 17s. 6d.; refined spot, £16 10s. to £17 10s., according to make; Hull, naked, refined, spot and June-August, £15; crude spot, £13 17s. 6d.; June-August, £14 5s. per ton. *Olive*: Mogador, £30 to £31; Spanish, £30 to £32. *Cocoanut*, firm; Ceylon spot, £25 10s. to £25 15s. per ton, landed; May-June and July-September shipment, £24 5s. *c.i.f.*; Cochin, spot, £29 ex wharf; April-May and May-June shipment, £26 10s. *c.i.f.*; July-September, £25 5s., *c.i.f.* *Palm*, Lagos, spot, £23 10s. *Lubricating Oil*: American pale, spot, 5s. 6d. to 7s. per gallon; black, 5s. to 5s. 9d.; Russian, black, 5s. to 5s. 6d.; pale, 5s. 9d. to 8s. per gallon. *Turpentine*, rather easier for spot, but firmer for forward delivery, quotations being—American spot, 34s. 3d. per cwt.; June, 30s. to 30s. 3d.; July, 28s.; September-December, 27s. 3d. to 27s. 4½d.; January-April, 1899, 27s. 10½d. to 28s. per cwt. *Petroleum Oil* firm at 4⅞d. to 4½d. per gallon for Russian on spot, and 4⅝d. for September-December. American is quoted, spot, 5d.; September-December, 5d. to 5$\frac{1}{16}$d.; water white, 6d. to 6¼d. *Petroleum Spirit*: American, 9d.; deodorised, 9¼d. to 9½d. per gallon.

Oxalic Acid—3¼d. to 3½d. per lb. nett, free delivered London.

Opium.—For *Druggists'* and manufacturing kinds there has been an improved demand, and sales have been effected at steady to slightly lower prices. *Soft shipping* very slow of sale. A moderate business has been done in the lower grades of *Persian* at 10s. 3d. to 10s. 6d., the finer qualities being held for 11s. to 11s. 3d. per lb.

Phenacetin.—One of the makers started hawking his article round at 3s. 3d. pez lb. for *crystals* or *powder*. Other makers have followed suit, the result being that prudent buyers are covering their wants strictly from hand to mouth.

Potash Compounds.—*Bicarbonate* is quoted 32s. 6d. to 35s. per cwt. *Bichromate*: 3¾d. per lb. *Bromide*: 1s. 10d. per lb. *Chlorate*: Crystals, 3¾d.; powder, 4d. per lb. nett in London for prompt delivery. *Permanganate* quiet, small crystals being obtainable for ton lots and in 1-cwt. kegs at 50s. per cwt., and large crystals at 55s. per cwt. ex wharf, London. *Prussiate*: Yellow English, 8d. to 8½d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

Quicksilver.—The importer again advanced his price yesterday to £8 2s. 6d. per bottle. It is said that a further advance before long is not improbable.

Quinine.—Market remains in an undecided position pending result of to-day's Amsterdam sale becoming known. At time of writing last week German makers maintained their price of 1s. 6d. per oz. for the *Sulphate*, in 100 oz. tins for 1000-oz. lots, while from second hand it was possible to buy spot at 1s. 3d. to 1s. 3½d. per oz. and for August delivery at 1s. 3½d. to 1s. 4d.; but at the close of the week price from second hand hardened to

1s. 5¾d. per oz., while early this week there were buyers for August delivery at 1s. 6d. per oz. without free sellers. On Tuesday market again drooped to 1s. 5d. sellers, while at the moment, as mentioned above, there is nothing doing in the article pending the results of the Amsterdam bark sale becoming known.

Rosin—Quiet. Strained is quoted 4s. 4½d. per cwt. ex-wharf, price for arrival being 4s. 1½d. per cwt. for July-September shipment per sailing vessel.

Shellac.—A firmer tone prevails in the speculative market as regards futures. The higher prices asked tend, however, to check business. On spot prices are steady, business having been chiefly in *Button* and *Garnet*, while there are buyers of *TN Orange* at 68s. per cwt., *c.i.f.*, for April-June steam shipment, and at 72s. per cwt. for August delivery.

Soda Compounds.—*Crystals* are quoted 52s. 6d. per ton for bags and 55s. per ton for barrels, ex ship, London. *Ash*: £5 to £5 10s. per ton, according to percentage, packing, and make. *Bicarbonate*: Commercial, 97 per cent., £7 to £8 per ton, while for the fully bicarbonated 19s. 6d. to 21s. per cwt. is asked. *Bichromate*: 2¾d. per lb. *Caustic*: White, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. per ton. *Hyposulphite* (*Antichlor.*) 6s. 6d. to 8s. 6d. per cwt., according to quantity, packing, and make. *Iodide*: 11s. 10d. per lb. *Nitrate*: Refined, £8 7s. 6d. per ton; commercial, £8 per ton.

Spices (Various)—*Black Pepper*: No Singapore offered and Penang all bought in at 5¼d. *White Pepper*: 71 bags Singapore bought in, no Penang offered. *Chillies*: 100 bags dullish Japan bought in at 40s. *Capsicum*: 40 packages Bombay bought in, good bright at 35s., ordinary dull at 28s. *Cinnamon*: 13 bales Ceylon sold, without reserve, at 6¼d. to 6⅜d. *Cinnamon Chips*: 25 bags bought in at 3½d. *Mace*: 69 packages Penang bought in, good pale at 1s. 8d. to 1s. 9d.; 11 packages West India sold, good pale at 1s. 7d. to 1s. 8d., ordinary red at 1s. 6d. *Nutmegs* quiet; 28 cases Penang bought in, 63's to 65's at 2s. 3d., 80's to 83's at 1s. 8d.; 9 packages West India sold, 67's at 1s. 10d., 88's at 1s. 4d., 106's to 114's at 1s. *Pimento* dull, 304 bags being mostly bought in, only a few bags selling at 4⅛d.

Sugar of Milk.—The agents for the finest *American* brand will not sell below 57s. 6d. to 60s. per cwt., according to quantity, brands less in favour being quoted 52s. 6d. to 55s. per cwt. The above figures show an advance in price in the article.

Sulphate of Copper—Firm at £25 5s. to £26 15s. per ton, according to make, etc.

Sulphonal.—Makers are firm at 17s. per lb. for both *crystals* and *powder*, with a slight reduction for contracts for 4 cwt. There are, however, still sellers of limited quantity from second hand at somewhat below above figure.

Tar.—*Stockholm* is quoted 26s. 6d. and *Archangel* 20s. per cwt.

Turmeric—Remains very quiet, *Cochin* fingers are quoted 17s. 6d. to 18s. per cwt., split bulb 10s. per cwt.; *Bengal*, 18s. 6d.; good bright finger *Madras* sold at 32s. 6d. per cwt.

Liverpool Market Report.

May 3, 1899.

Good business has been done in seeds this week, the demand for Linseed being well maintained, and a better turn having shown itself in the inquiry for Canaryseed. In oils a fair share of attention has been attracted to Castor Oil, in which some fairly large deals are reported. Spirits of Turpentine has again advanced rapidly, and several transactions have been concluded at the higher rate. Chemicals generally are somewhat dull, with higher quotations for Sulphate of Ammonia and Sulphate of Copper.

Ammonia Salts.—Carbonate is firm at 3⅝d. to 3¼d. per lb. Sal Ammoniac is quiet at 33s. to 35s. per cwt. Sulphate is dearer at £11 7s. 6d. per ton.

Arsenic.—The Powdered is dearer, and £18 10s. per ton is asked. Lump, £30 per ton.

Canaryseed.—More inquiry is noticeable, with the result that 150 bags of fair average quality Turkish changed hands at 25s. 6d. per 464 lbs., and since that 500 bags of Turkish made 26s.

Copperas—Is higher in price and firmly held for 37s. to 40s. per ton:

Copper Sulphate—Is scarce and dearer at £26 10s. per ton.

Linseed—Is firm and there is little offering. Calcutta seed forward is quoted at 34s. 9d. to 35s. per 416 lbs., according to date of delivery. River Plate seed is from 32s. 6d. to 34s. per 416 lbs., forward. Sales of River Plate from store have been made at 34s. 3d., about 50 tons changing hands. 100 bags of Turkish, ex-store, went for 42s. per 416 lbs.

Oils (Fixed) and Spirits.—*Castor* is very firm to arrive, and good sales are reported, both spot and forward of Calcutta "good seconds," 250 cases for delivery in September-October sold at 2¾d. per lb., spot parcels bring 2⅞d. to 2⅝d. French first pressure, 5 tons sold at 2¼d. per lb., and second pressure has sold at 2⅝d. per lb. Madras also is making 2¾d. per lb. 25 barrels of Belgian April-May shipment sold for £25 per ton *f.o.b.* Antwerp. *Olive*: Supplies being in small compass and demand regular at full rates prices for Spanish are still £31 to £31 10s. on the spot. *Linseed* is steady and unaltered at 18s. 9d. to 19s. 6d. per cwt. *Cottonseed* is quiet at 17s. to 17s. 6d. per cwt. in export barrels. *Spirits of Turpentine* have risen to 36s. per cwt. and enjoy a fair amount of inquiry.

Potash Salts.—*Bichromate*: 3⅛d. per lb. *Chlorate*: 3½d. to 3¼d. per lb. *Cream of Tartar* is quiet at 75s. to 80s. per cwt., and small sales of Oporto have been made at 76s. 6d. per cwt. *Pearlashes* are quiet at 32s. per cwt. *Potashes* are flat at 23s. 6d. to 23s. 9d. per cwt.

Soda Salts.—*Bicarbonate*: £6 5s. to £6 15s. per ton. *Borax*: £15 15s. to £16 per ton. *Caustic* is firmer; 76 to 77 per cent., £7 15s. per ton; 70 per cent., £7. *Crystals*: £3 per ton. *Nitrate* is lower, the present price being 8s. to 8s. 3d. per cwt.

Newcastle Chemical Report.

May 3, 1899.

This market keeps to a steady tone, Bleaching Powder being still commanding, with Soda Crystals in the wake. Caustic Soda is a shade more inquiry and Sulphur scarce. Prices are:—Bleaching Powder: £5 7s. 6d. to £5 12s. 6d. Soda Crystals, basis: 45s. to 47s. 6d. Caustic Soda, 70 per cent.: £7 5s. to £7 10s. Sulphur: £4 15s. to £5. Alkali, 40 per cent.: £4 5s. to £4 10s. Soda Ash, 50 per cent.: £5 to £5 10s. per ton.

Manchester Chemical Report.

May 3, 1899.

Although drysalteries are quiet, general chemicals are, on the whole, fairly firm. Caustic Soda and Bleaching Powder are unchanged at late rates. Soda Crystals are in fair demand. Sulphate of Copper has had an advance since our last, the lowest being now £26 10s. per ton, Manchester, best brands. Arsenic has also been scarce, and the price has risen to £18 15s. and £19 per ton, ex ship, Garston. Coal Tar Products are dull generally, and there is no change to note in Benzols, and the season for Pitch is now almost closed from this port. In Sulphate of Ammonia we find most makers in this centre are well contracted forward, which may account for the recent reaction. Green Copperas is stagnant almost locally, owing to so much Welsh being brought in. Makers here, however, regulate the production fairly well, and as the article is dry and good, it is found to be better suited for commercial purposes than Welsh. Yellow Prussiate is scarce and dear as things go—8¼d. to 8½d. Salt Cake is offering at easier prices. Brown Acetate of Lime is steady, and the turn higher at £4 15s. to £5 per ton, Welsh and American, delivered Manchester. White Sugar of Lead weaker. Chlorates unchanged.

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PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

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Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

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Calendar for the Week.

Sunday, May 7. Rogation Sunday. Sun rises, 4.24; sets, 7.29.

Monday, May 8. Sun rises, 4.22; sets, 7.31.

Tuesday, May 9. ● 5.39 A. Sun rises, 4.20; sets, 7.33.

Wednesday, May 10. Sun rises, 4.19; sets, 7.35.

ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Prof. Silvanus P. Thompson on "Electric Eddy-Currents" (second of the Tyndall Lectures).

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—"The Photography of Colour," by E. Sanger Shepherd.

Thursday, May 11. Sun rises, 4.17; sets, 7.36.

Friday, May 12. Sun rises, 4.16; sets, 7.38.

ROYAL INSTITUTION, Albemarle Street, W., at 9 p.m.—Prof. T. Preston on "Magnetic Perturbations of the Spectral Lines."

Saturday, May 13. Sun rises, 4.14; sets, 7.40.

WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP, Bowes Park—Kepler *v.* Burgoynes.

Partnerships Dissolved.

(From the London Gazette.)

A. E. Kingsford and S. T. Rake, Mineral Water Manufacturers, etc., St. Ann's Works, Chepstow, Mon., so far as regards A. E. Kingsford.

Adolphus Lonsdale and Henry Lonsdale, Photographic Apparatus Manufacturers, 22, Goswell Road, E.C., so far as regards Adolphus Lonsdale.

Advertisement.

(Received too late for Classification).

MANAGER, Branch. Qualified Extractor. Photography. Store experience. Married. Disengaged. BROMIDE, "Pharm. Journal" Office, 5, Serle St., W.C.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Acker, Ayrton, Barnes, Bartlett, Bennett, Birkbeck, Booth, Brook, Brown, Burroughs, Caldecott, Clayton, Clifford, Cox, Curtis, Davies, Dawson, Durrant, Elstob, Evans, Farbwerke, Fargher, Gordon, Hall, Hanbury, Harrison, Hill, Hooper, Hughes, Humphreys, Jowett, King, Kirkby, Langman, Osborne, Plummer, Poppelreuter, Ransom, Scott, Simons, Southall, Tebbut, Tottle, Ward, Wellcome, Wilson, Woolcock, Worfolk,

POLITICAL GOSSIP.

Major Rasch proposes to follow up his question reported last week by asking the Vice-President of the Committee of Council whether the Executive of the General Medical Council had stated, in its reply to the Privy Council, what grounds it had for considering that accidents due to the employment of unqualified dispensers by medical practitioners are very rare; and if not, whether he will ask the Executive what means it has of knowing the number of accidents, fatal and otherwise, which have resulted in doctors' surgeries from the employment of unqualified dispensers.

Lord Shand and the Marquis of Salisbury have, between them, blighted the hopes of the female assistants in Scotch shops by ruthlessly throwing out Mr. Souttar's seat-providing Bill, to the accompaniment of disparaging remarks on grandmotherly legislation that should prove highly interesting to members of the House of Commons. We are sorry that our congratulatory note of last week has so soon to change into the minor key, and that the blushing honours of the member for Dumfriesshire should have experienced so sudden and effectual a frost. The chief interest of the episode, however, lies in considering the fate in store for similar Bills. The Early Closing proposals, for example, fall into the same category as the Seating Bills and, by analogy, must be regarded as doomed so long as an unreformed House of Lords exists. The friends of the movement for securing reasonable leisure for assistants would therefore be wise to face the position and cease to fritter their energy in a hopeless parliamentary struggle. Such friends are numerous and influential, and can, if they choose, secure without parliamentary aid, and in a quarter of the time consumed in promoting futile Bills, the praiseworthy object in view. The action of the Lords may be taken as a sharp, but perhaps wholesome, lesson to those disposed to turn their eyes to the State for the remedy of every private grievance.

The Petroleum Bill, promoted by the advocates of a higher statutory flashing point, having met a sudden and unexpected end early this Session, inquiries have been rife as to the intentions of the Government on the subject. Official notification is now to hand that a Ministerial measure has been drafted regulating the storage and sale of petroleum, and that it may be looked for on the Notice Paper of the House before the commencement of the Whitsuntide recess. It is understood that the Bill is rather more moderate in its proposals than that brought in by Mr. Ure, the Edinburgh advocate who represents Linlithgowshire.

Food Preservatives were again the subject of inquiry last week. This time it was Mr. A. Moore (Londonderry) who asked for information respecting the promised official investigation of the use of preservatives in food. Mr. Chaplin replied that a Departmental Committee was in course of formation, and Mr. Channing (Northamptonshire E.) elicited the additional statement that that Committee—after the manner of its kind—would not be in a position to report its conclusions in time to be of any use; that is to say, it would not be ready before the Food and Drugs Bill reached the report stage. Mr. Chaplin's Committee is no doubt the body of experts alluded to by Mr. Long in the Standing Committee on Trade, and used by him to keep the member for East Somerset quiet. After all, there is good reason for the application of the "hasten slowly" principle in the case of this investigation, for the commercial and scientific considerations involved are as complex as they are important.

Southport's Opportunity.—The regrettable death of Sir H. Naylor-Leyland, at the age of 35, leaves the Southport Division of Lancashire without a member, and gives rise to some speculation as to whether the seat may not revert to the Ministerial Party. It will be remembered that Sir Herbert captured, by the narrow majority of 272 votes, the place vacated by Lord Curzon, and was said to owe his success to his territorial influence in the district. At any rate, it is conceivable that a strong Government candidate might restore the *statu quo ante* 1898. Such a candidate is already in the field in the person of Mr. Charles B. Balfour—a cousin of Mr. A. J. Balfour, First Lord of the Treasury. He is to be formally adopted on Friday, 12th inst., at a meeting of Conservative delegates at Southport, and as it is probable that, if selected, he will at once commence to cultivate the constituency, the chemists there should take an early opportunity of making known to him the present conditions under which the practice of pharmacy is conducted in Great Britain, and should secure if possible his interest in their case. Mr. Balfour's opponent has not yet been named, but when he is, it should be the duty of pharmacists in that portion of S.W. Lancashire to approach him in like manner. In such an evenly divided constituency it should not be difficult for the pharmaceutical element to make itself felt—a little organisation and a modicum of earnestness should be all that is needed.

The Drug Section of the Food and Drugs Bill has now been reached by the Standing Committee on Trade, and the discussion thereon is proceeding merrily and with comparative celerity. The first clause of Part II., *i.e.*, the portion relating to drugs, introduces a somewhat important principle from a legal point of view. Everyone is familiar with the provisions of Section 8 of the Act of 1875, relating to the labelling of mixtures which takes the vendor out of the clutches of the law if he "distinctly and legibly" announces on his label that the article sold is mixed. Human ingenuity has devised means of complying with the letter of that section whilst offending against its spirit, hence the clause under discussion undertakes to check this misdirection of intellect by defining what is not legible. It provides, in fact, that if the notice be obscured by added matter on the label it shall not be deemed a compliance with the Act of 1875. No interference is to be made with registered trade marks now extant, nor with labels of seven years' standing, but—and it is a big disjunctive—in future the Comptroller of Patents, Designs, and Trade Marks is not to register any trade mark purporting to describe a mixture, "unless it complies with this enactment." A very good principle indeed, which we hope to see extended. No evasion by way of the Patent Office will be possible in face of statutory instructions to the Comptroller not to take fees from persons desirous of an official shelter for irregularities. The principle seems good, inasmuch as its logical outcome would point to a needed amendment to the Pharmacy Act, 1868, and would justify the insertion in our next Act of a clause providing that the Comptroller shall not seal any patent for a medicinal substance which contains a scheduled poison.

The Committee at its Monday's sitting had a long and interesting wrangle over the question of penalties, Mr. Kearley pointing out the difficulty of hitting the offender who carried on several businesses by the hands of irresponsible nominees. The majority of the members present, however, declined to adopt the drastic remedies of Mr. Kearley as to the minimum punishment for habitual offenders, or Captain Donelan's Spartan suggestion that the confirmed adulterator should be compelled to brand himself as a rogue in the local newspapers at his own expense. The next meeting will be occupied in discussing the uses and abuses of the warranty or invoice.

No Sign has yet appeared of the second reading notice of the Lord Chancellor's Pharmacy and Companies (Medical Profession) Bills. If they are not moved on before Whitsuntide the danger of their becoming law this session will be materially diminished.

FRENCH NEWS.

A French Medico's Duel.—Duels between official persons are in France rather rare, and, accordingly, an encounter reported from Brionde, in the Departement of the Haute Loire, has attracted some attention. The opponents were Dr. Vidal, a Mayor and Councillor-General, and Monsieur Révilliod, sub-Préfect of the district. The two quarrelled recently at an official gathering, Dr. Vidal reproaching M. Révilliod with having done wrong in receiving one of the local mayors who had been declared a bankrupt. The sub-Préfect, stung by the words of the Councillor-General, sent him a challenge, which was refused, Dr. Vidal considering himself to be the injured party. The point was referred to a jury of honour, and a decision was given in favour of the sub-Préfect. The two met outside the town of Brionde, the result of the meeting being that the doctor was severely punctured in the stomach. If perchance he recovers from the effects of his injury he will have to face an action for slander brought against him by the local mayor, who was the cause of the discussion and the duel, or, on the other hand, perhaps offer himself up a second time as a target for his puncturing compatriots who hate to hear the truth.

A Weighty Client for the Pharmacist.—An old lady of immense proportions and weight got into a cab on the Boulevard St. Michel the other day and came down upon the seat with such force that she crashed through and broke the vehicle almost in two. The horse, however, started off at a brisk canter, carrying along in the dismantled cab the unfortunate fare, who could not extricate herself from her position and who screamed loudly to the passers-by for aid. At last a policeman and four men came to her assistance, but could not get her out for a long time, so tightly was she wedged and buried in the ruin she had caused. When finally she emerged she was at once borne off to the nearest pharmacy, where she was examined and kind hands ministered to her needs, binding up her bruised and bleeding limbs. When released from this haven she began to abuse the cocher, the horse, the cab, and everybody in sight, pharmacien included, to such an extent that the cocher, replying in kind, both of them were taken before the Police Commissary of the Odéon quarter. Here the woman made out a complaint against the cocher, whose only defence was that his destructive client weighed at least 300 lbs.

Octroi Duty on Alcohol.—An important decision, calculated to gladden the heart of the pharmacien, as also that of the public generally, has just been given by the Civil Chamber of the Court of Appeal. The decree issued by the Préfect of the Seine on October 21, 1898, increasing the "octroi" duty on alcohol by 85 f. per hectolitre has been declared irregular, and the city of Paris is ordered to refund the extra duty collected. This, says the *Figaro*, means a matter of nearly five millions of francs (£200,000), not a bad haul in six months for a city like Paris.

SCOTTISH NEWS.

A Linlithgow Amateur Photographic Association has been successfully established, the meetings being held at the premises of Mr. C. M. Spence, chemist and druggist, Linlithgow.

Forfarshire and District Chemists' Association.—The annual meeting of this Association will be held at Kirriemuir, on Wednesday, May 24. Members from Dundee travel by train from East Station at 11·27. At 1 o'clock, on the invitation of Mr. Ford, all will go for a drive round the district if the weather is favourable. At 3 o'clock, the business meeting will be held; and at 3.30, dinner will be served in Ogilvy Arms Hotel. Ticket, 4s. Return train for Dundee leaves at 6.20 In order that complete arrangements may be made, early intimation should be given to Mr. W. Cummings (Hon. Sec.), by those intending to be present.

Aberdeen Pharmaceutical Association.—A meeting of this Association was held in Robert Gordon College on Tuesday evening, the 9th inst., Mr. Chas. Simpson, President, in the chair. The business before the meeting was the distribution of prizes to the successful students in connection with the evening class at the School of Pharmacy in Gordon's College. There was a large attendance of students and members of the Association. Dr. Ogilvie, Principal of the College, and Messrs. Ellis and Watt, teachers of pharmacy, were also present. The Chairman, who rose to present the prizes, said that he must congratulate Dr. Ogilvie and the Governors of the College on the addition of a school of pharmacy to an institution which had done so much for technical education in Scotland. The Aberdeen Pharmaceutical Association had made up its mind to establish a school of pharmacy, and it was a fortunate circumstance that it had been attached to such an important institution as Gordon's College. It was also very gratifying to find that so many of the students had already passed the qualifying examination of the Pharmaceutical Society since the school was established in October last. No doubt a considerable amount of this success was due to the excellent teaching of Mr. Ellis, but it was also due in a great measure to the solid foundation laid during apprenticeship in attending the science and art classes of the College. Messrs. Johnston, Clark, and Giles also congratulated Dr. Ogilvie on the success of the pharmaceutical department under Mr. Ellis. Dr. Ogilvie thanked the Chairman for the kind way in which he had referred to his connection with the College, a connection extending over twenty-seven years. He also was very pleased with the success of the pharmaceutical department, and said that already there was need for increased accommodation, but that would be attended to. Mr. Ellis had proved himself a capable teacher, but he might add that the success of the School was expected, being connected with Gordon's College. The students should not, however, be contented with success already acquired, but let their motto be "Forward Yet." He complimented the students on their exemplary conduct inside the College. The following is the prize list:—Practical Chemistry: 1, Geo. Watson; 2, Jas. Halkett; 3, Wm. Ritchie Robb. Theoretical Chemistry: 1, Geo. Watson; 2, Jas. Birnie. Botany: 1, Jas. Halkett; 2, Geo. Nicol. Materia Medica: 1 and 2 (equal), Geo. Nicol and James Birnie.

Glasgow School of Pharmacy.—On Saturday afternoon last, the students of the Glasgow School of Pharmacy, accompanied by Mr. John Lothian (Principal), visited the gasworks at Paisley. The party was conducted over the works by Mr. John Airth, and the various processes in connection with the manufacture and purification of coal-gas was ably demonstrated. Oil-gas is also manufactured at the works by special plant, the oil being sprayed on to iron plates which have been heated to a high temperature. The gas so produced is freed from undecomposed vapours and used to enrich the coal-gas. The party was afterwards photographed by Mr. William Airth.

IRISH NEWS.

Mr. S. Templeton, School of Chemistry, Belfast, has opened a special preliminary class for July and October examinations. He claims that "at the April examination about two-thirds of all successful candidates, including first three, passed direct from this class." The other teachers are Messrs. J. D. Wylie and T. Harper.

A gentleman, name unknown, has shot himself dead with a revolver at Albert Quay, Belfast. From various papers found upon him, he is supposed to be an American, and appears to have been a commercial traveller representing a Boston firm of chemists. His notebook was found to contain the address of a large number of American ladies, to whom he had evidently sold medicines. Amongst his numerous aliases were Flint and Lincoln.

Mr. Robert Barklie, Public Analyst and science teacher, has entered an action against a Monaghan farmer named Carville for assault in a railway carriage. A motion to remit the action from Dublin on behalf of defendant was refused with three guineas costs.

A Number of Cases of Strychnine Poisoning have taken place of late throughout the country. In two or three cases absence of evidence as to where or by whom the poison was purchased was noticeable. Provincial coroners are not as a rule very particular in this respect.

The 'Irish Christian Advocate' for April 28, in a leaderette condemning texts from novels, institutes the following remarkable parallel: "Such efforts remind us of those well-known tricks of trade adopted by quacks and patent-medicine vendors, and, like these, they have their day." The columns of the same paper are crammed with "patent" medicine advertisements, notably Congreve's elixir for consumption, stuck in just above the "leader." It does not lie in the mouths of religious editors to rebuke quacks.

ENGLISH NEWS.

Mr. Benjamin Vincent, whose death at the age of eighty-seven, occurred at Barnsbury, on Wednesday May 3, was connected with the Royal Institution for more than half a century. He entered its service in 1848 as assistant secretary, and subsequently became keeper of the library, retaining that post till 1889, when, owing to failing health and eyesight, he retired with the title of honorary librarian. He owed his appointment in the first instance to Faraday, who always took a great interest in him and his pursuits. The *Times* states that at the Royal Institution, Faraday, who was about twenty years his senior, found in Mr. Vincent an untiring and enthusiastic coadjutor in promoting the knowledge of scientific progress and the welfare of the institution. Faraday was well aware of the importance of creating and maintaining public interest in scientific work, and in this respect was greatly helped by Mr. Vincent, who for many years, quite apart from the official duties of his position, drew up clear condensed reports of the

lectures and discourses delivered at the Institution, which were published in the *Times*, the *Athenæum*, and the *Illustrated London News*. As librarian of the Royal Institution he was responsible for the arrangement and selection of its large and valuable collection of books, and he found time to prepare an admirable classified catalogue of them. Mr. Vincent had remarkable linguistic abilities, and thought it a waste of time to acquire languages singly, holding that linked languages should be studied together. He learnt German in a few weeks in order to correct and assist in editing Flügel's German Dictionary, and he did his task so well that the thanks of the author were recorded in the preface. In 1848 he compiled the index to the persons, places, and subjects occurring in the Holy Scriptures, which may be found in many editions of the Bible. Another arduous task which he first took up in 1855 was the superintendence of the preparation of Haydn's 'Dictionary of Dates,' then in its seventh edition, and which is now in its 22nd. He also brought out a companion 'Dictionary of Biography.'

Cricket.—In a match played at Willesden on Saturday, May 6, between Allenbury's Cricket Club and Johnsen and Jorgensen Cricket Club, F. C. Hanbury, for the former, scored 49; W. Little, 1; W. Goldman, 5; C. F. Petty, 13; E. Adair, 14; W. Maurice Jones, 0; J. F. Graves, 5; A. Gloyn, 0; H. Ranse, 4; R. Dixon, 1; extras, 17; making a total of 109. For the latter, A. E. Pullen scored 1; J. R. George, 9; Absolom, 2; J. J. Hoskins, 0; Philpot, 19; A. G. Gooding, 0; Frost, 0; A. Burrows, 24; Ling, 4; G. J. Richardson, 3; Weston, 1; extras, 16; making a total of 79. Being the first match of the season and indifferent outfield accounts for so good a score on both sides being credited for extras.

Royal Institution.—A general monthly meeting of the members of the Royal Institution was held on Monday, the 8th inst., His Grace the Duke of Northumberland, President, presiding. The following were elected members:—Mr. A. Cooper, F.R.C.S., Mr. A. W. Porter, Mr. S. Stephenson, and Mr. T. Uzielli. The special thanks of the members were returned to Mr. Hugh Dewar for his donation of £200, to Mr. Thomas H. Sowerby for his donation of £5 5s., and to Mr. John H. Usmar for his donation of £50 to the fund for the promotion of experimental research at low temperatures. The President referred to the death of Mr. Benjamin Vincent, for many years Assistant Secretary to the Institution, and said that he desired to express the high appreciation that the managers held of his services.

Oxford University Junior Scientific Club.—The 200th meeting of this Club was held at the Museum on Friday, May 5, the President in the chair. Professors W. F. R. Weldon and A. E. H. Love were elected honorary members of the Club. During private business it was announced that, owing to ill-health, Professor E. Ray Lankester was unable to accept the invitation to deliver the Boyle lecture, and that Professor McKendrick, of Glasgow, had accepted the invitation, and will deliver the lecture on June 13, taking as his subject "Musical Sensations and the Inner Ear." Mr. E. H. J. Schuster, New College, exhibited, by the aid of the lantern, a series of slides, representing various forms of shore life. Mr. G. C. Bourne, M.A., New College, one of the earliest presidents of the Club, delivered his address on "The Early Constitution and History of the Club." In it the lecturer traced the growth of the study of natural science in Oxford from the introduction of the Honours School of Natural Science in 1853 up to the present time. He then passed on to the foundation of the Club in 1882, the first meeting being held on November 8 in that year, and gave an account of the first meetings, the subsequent progress of and alterations in the Society, and ended with a short account of what was expected in the future.

The Sale of Drugs by Grocers.—The Bradford Grocers' Association directs attention by circular to the risks run by retailers who include drugs in their stock-in-trade, in case those goods happen not to be up to the standard fixed by the new edition of the British Pharmacopœia. The gentleman who raised the subject at a meeting held recently called special attention to sweet nitre, camphorated oil, cream of tartar, and seidlitz powders. Other goods were also mentioned as being more or less affected. The subject was incidentally referred to at a recent meeting of the General Purposes Committee of the Grocers' Federation, when Mr. Burgis, of Leamington, remarked that what his firm did with their seidlitz powders when the new Pharmacopœia came out was simply to send the whole lot back to the wholesale suppliers, who made the powders up to the proper standard. The *Grocer* remarks that probably this plan has been followed by many of the large firms of retailers, but there is little doubt that the majority of small traders concerned have not done so, and those are urged to note the recent prosecutions and to communicate with the wholesale houses in case they have in stock any drugs or compounds that are at all doubtful.

A Doctor's Application—At the Otley Police Court, on May 5, Dr. Usher, of Yeadon, made an application in respect of a case heard a week previously (see *ante*, page 426), in which John Naylor, chemist, was summoned for the sale of certain Gregory powders, which were stated not to be in accordance with the British Pharmacopœia.—Dr. Usher stated that evidence of a very material character had been given in that case by a Mr. Kaye, who described himself as a doctor of medicine, but he (Dr. Usher) had been unable to find the name of Dr. Kaye on the medical register. Mr. Kaye was the medical officer of health for the West Riding, and it was inconsistent for a body like the County Council to appoint as medical officer of health a man who was not on the Register. Mr. Kaye's name had been removed from the Register in 1891 in accordance with the provision relating to inaccuracy of address, but it could be restored at any time on his identity being established.—Mr. Humphries (a magistrate): Has he committed any offence?—Dr. Usher: I ask your Worships to grant me a summons. A penalty of £50 hangs over his head. He has given evidence here, and is liable to be prosecuted. He was the chief factor in the case.—The Bench considered that it would be for the County Council to deal with Mr. Kaye, and refused to grant the summons.

Royal Society.—The following fifteen candidates were selected on May 4 by the Council of the Royal Society, to be recommended for election into the Society:—Professor William F. Barrett, Mr. Charles Booth, D.Sc., Major David Bruce, A.M.S., Mr. Henry John Horstman Fenton, M.A., Mr. James Sykes Gamble, M.A., Professor Alfred Cort Haddon, M.A., Dr. Henry Head, Professor Conwy Lloyd Morgan, F.G.S., Mr. Clement Reid, F.G.S., Professor Henry Selby Hele Shaw, M Inst.C.E., Dr. Ernest Henry Starling, Professor Henry William Lloyd Tanner, M.A., Mr. Richard Threlfall, M.A., Mr. Alfred E. Tutton, B.Sc., Professor Bertram Coghill Allen Windle, M.D.

Nourishing Rat Poison.—At Bournemouth Police Court on May 5 a gipsy, named Sampson Hughes, was charged with fraudulently obtaining sums of money from several persons by selling some innocuous compound as rat and beetle poison.—Evidence was given of the purchase, and a witness named Hall stated that, his house being infested with beetles and cockroaches, he bought the preparation with a view to stopping the nuisance. He was told by prisoner to smear the compound on sticks of wood and lay it near the infested area. He did so, and during the night found the sticks covered with beetles, but they seemed to enjoy the preparation. He did not, however, have to sweep up large numbers of dead beetles, as prisoner confidently told him he would. None of them died.—Police evidence went to show that for the past few days a beetle had been treated with the compound, but to the experimenter's surprise the creature appeared actually to grow fatter, and it thrived wonderfully. Rats also had been experimented on, but instead of suffering any ill-effects, the rodents appeared to thrive on the preparation, and, in fact, there had been an addition to the family.—Prisoner was committed for trial.

Carriage of Calcium Carbide.—At the Thames Police Court on May 8, Messrs. Thomas Ronaldson and Co., of 34, Leadenhall Street, E.C., appeared to answer a summons for permitting the steamship "Tay," whilst laden with forty drums of calcium carbide, to be navigated in a manner contrary to the provisions of the bye-laws made by the Conservators under the provisions of the Petroleum Acts of 1871 and 1879 and the Order in Council of February 26, 1897.—Mr. Bunting, who prosecuted on behalf of the Conservancy, said calcium carbide was petroleum within the meaning of the Act, according to an Order in Council, and should be brought no further than Thames Haven.—On behalf of the company a plea of guilty was entered, but Mr. Mead, the magistrate, held that calcium carbide was not within the Act, and if the Conservators thought it ought to be, they should pass a bye-law dealing with it. He would adjourn the case *sine die* to enable the point to be considered.

A Caution.—Mr. R. Wright, of Buxton, writes as follows:—"Permit me to caution the members of the trade against a man from whom I received a visit a day or two ago and by whom I was nearly duped. He gave the name of James Walter Phillips and informed me that he had formerly been in business at Brighton and latterly at Newport, but having lost his savings in the Liberator smash had been obliged to sell his business, and had since been engaged in "locum" work. On the day on which he called on me he had walked from Manchester to Buxton, and was quite without money. He was, however, expecting a remittance from his father, who was living in Brighton, and when this arrived he would gladly refund any money I chose to advance him. Such, in rough outline, was his story, told with every appearance of frankness and sincerity. Although I had no reason to doubt the truth of the man's tale, it occurred to me that it would be well to test it so far as a reference to the Reigster would enable me. In the Register I found the name of James Wilson Phillips, but no James Walter Phillips. Without comment, I put two or three further questions and learnt that my visitor was a chemist and druggist who passed the Minor in 1872, had been a subscriber to the Society down to 1896, and was in business at Park Street, Newport, when he sold the business to a Mr. Selby. The Register showed that the gentleman whom this man was undoubtedly personating was a pharmaceutical chemist who passed the Minor in 1874 and is in business in Commercial Street, Newport. And a reference to the Calendars failed to reveal the name of James Walter Phillips in any of the years during which this man claimed to have been an Associate. I at once told him that I did not credit his story, and he left me, protesting that both the Calendar and Register were incorrect. On writing to the Mr. Phillips above mentioned, I learnt that, although he could not identify my visitor, he could assure me that there had never been a chemist's business in Park Street, Newport, nor any chemist named Selby in the town. It only remains to give a description of this impostor, so far as I can remember it: Age about 45, medium height, head bald on top, light hair and side whiskers, grey eyes, complexion somewhat florid. He was wearing a hard felt hat and a well-worn brown suit. I trust that this description, together with the record of my experience, will be sufficient to prevent other members of the trade being imposed upon by this plausible individual."

North-East Lancashire Chemists' Association. — At a meeting of the Executive of this Association on Tuesday evening it was decided to obtain signatures to the memorial to the Pharmaceutical Council, promoted by the Federation. A resolution was also passed recommending the retiring members of the Council for re-election, as the policy of those members recommended itself to the Executive.

Plymouth, Devonport, Stonehouse, and District Chemists' Association.—A meeting of the Committee of this Association was held in the Rooms on Wednesday, May 10, when the following resolution was moved and carried:—

> That this meeting desires to express the fullest confidence in the conduct of Mr. C. J. Park, of Plymouth, as a member of the Pharmaceutical Council, to the duties of which office he has devoted much time and application. He is in complete sympathy with all efforts made to maintain and strengthen the position of pharmacy throughout the country, and to secure the sale and dispensing of medicines to the hands of qualified persons only; it is therefore hoped that he will receive the cordial support of the trade in the forthcoming election. As he is the only representative on the Council from the West of England, it is thought that should be an additional reason for returning him, as otherwise a large section of the country will be virtually unrepresented.

Bradford and District Chemists' Association. — The Council of this Association met on Wednesday last to consider the forthcoming election of councillors of the Pharmaceutical Society, and decided to recommend the members of the Association to vote for Messrs. Campkin, Carteighe, Druce, Harrison, Park, Smith, and Young.

Poisoning by Opium.—Mr. A. B. Hicks held an inquest on Saturday, May 6, at Kingston-on-Thames, on James Gridley, aged twenty-five years, a sailor in the mercantile marine, who was found dead in his bed from the effects of opium poisoning at Sudbrook Lodge, Ham, on March 29.—Miss Emily, Gait, of 2, Park Place, Kingston Road, Ham, said that she was engaged to the deceased, and saw him on the night before his death. He then seemed very ill, and when she referred to a bilious attack he had had on the previous day, he replied, "It may be a very wicked thing to say, but I have been poisoned." Witness laughed, whereupon he retorted, "You can believe what you like." He did not say by whom he had been poisoned, but she thought that perhaps he meant he had been taking something. He told several other persons that he had been poisoned. They parted that night on good terms, and he promised to meet her the next evening.—The jury, after some deliberation in private, returned a verdict of death by misadventure.

The Crusade against Consumption.—The National Association for the Prevention of Consumption and Other Forms of Tuberculosis held its first general meeting at its offices, 20, Hanover Square, on May 4. All the work in connection with the Association is done gratuitously by its officers and members, from its President, the Prince of Wales, downwards; but it has now been registered at the Board of Trade, so that it may be in a legal position to receive bequests and so on. The Earl of Derby, K.G., took the chair, and was supported by many leading physicians and surgeons, and others. Dr. St. Clair Thomson presented the report of the Organising Committee, which showed that the movement had its inception at a private meeting of some medical men held on June 22, 1898, when it was unanimously agreed that a public movement should be inaugurated for the purpose of endeavouring to prevent the ravages caused by tuberculosis in the United Kingdom. It was decided to promote the cause by (1) the education of public opinion and the stimulation of individual initiative; (2) the influencing of Parliament and other public bodies on the subject; and (3) the establishment of branches throughout the kingdom. Members have already been enrolled to the number of 1252. A meeting of the Executive Council was afterwards held, under the chairmanship of Sir William Broadbent, for the appointment of officers and general committee.

Exeter Chemist's Assistant Poisoned.—On Tuesday afternoon last, the Exeter City Coroner (Mr. H. W. Hooper) held an inquest ot the Black Horse Hotel, Longbrook Street, Exeter, relative to the death of Frank Bank Wakefield, aged 22 years, stock-keeper to Messrs. Milton and Son, chemists, of High Street, Exeter, who died on Sunday last from poisoning at his lodgings, 9, Park Road.—William Henry Odgers, assistant at Messrs. Milton's, said the deceased was 22 years of age last week. Witness was with him on Saturday night, when he said he had the tooth-ache "jumping mad." In the morning he took one drachm of morphine solution, remarking to witness, "It's all right, old man; it's only the maximum half-grain dose." That was about ten o'clock in the morning. Later in the day he appeared easier, and at nine o'clock in the evening joined witness at the theatre. They went home together, and as witness was standing in the passage the landlady's daughter said, "Mr. Odgers, Mr. Wakefield has a bottle in his hand." Witness went to the room where deceased was and found two bottles on the mantelpiece, one containing toothache tincture, while the other contained the morphine solution. He told witness that he had taken a dose of the same quantity as in the morning. He then went to bed, and after about half-an-hour had elapsed he repeated, in conversation with witness, that he had taken "the same dose as morning." On Sunday at dinner he was not so well, and witness fetched Dr. Mortimer, later going for Dr. Harris, but he died at ten minutes to nine on Sunday night. Latterly he had been in the habit of taking morphine and chlorodyne. He had been with Mr. Milton five months and a fortnight. He never showed any suicidal tendencies.—Mr. J. Mortimer, surgeon, said he saw the deceased at two o'clock on Sunday afternoon, and found him suffering from marked symptoms of morphine poisoning. Witness applied all the appropriate remedies, with, apparently, considerable success, for three hours. Then the heart began to fail, the remedies failing to act, and deceased died between eight and nine. Death was undoubtedly due to morphine poisoning, and the deceased must have taken a good deal more than the half grain which he told the last witness about.—Mr. T. C. Milton, the deceased's employer, said he should like to mention that he had no previous knowledge that the deceased took drugs from the shop, nor that he was in the habit of taking morphine. Deceased was stock-keeper, and as such it would be impossible to keep those things from him. Deceased had been in the office of his brother, a surgeon in London, and had a greater knowledge of drugs than most assistants.—The jury returned a verdict of "Death from misadventure."

MARKET REPORT

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

May 11, 1899.

Business has been decidedly quiet during the past week, there being no changes of any importance to record. Quinine, after being better last week, has again relapsed, and the position of the article appears to have again become undecided, those best competent to judge appear to think that buyers who are not stocked would do well to take advantage of present lull to secure a moderate supply, and the more so in view of the fact that the makers remain firm at quotations which are more than 10 per cent. above the price at which the Sulphate can be bought from second hand. Cocaine is very firm but, so far, unchanged in price. Rape Oil and Linseed Oil are dearer and very firm. Sulphate of Ammonia again dearer. Quicksilver and Mercurials firm. Camphor expected to be dearer. The following are the actual prices of articles of chief interest :—

Acid Boracic.—*Crystals* 26s. per cwt., *powder* 2s. per cwt. more money.

Acid Carbolic—Is firm at 6⅝d. to 6¾d. per lb. for 35-36° C. *ice crystals* in bulk, and for large quantity ; other qualities and packing being quoted in proportion. *Crude* 60° F. 2s. 1½d. per gallon, 75° F. 2s. 7d. per gallon. *Liquid* 95 to 98 per cent. of pale straw colour 1s. 2d. to 1s. 3d. per gallon, in 40 gallon casks.

Acid Citric—Is rather firmer at 1s. 3d. per lb. on the spot.

Ammonia Compounds—With the exception of *Sulphate* are without alteration in value. *Sulphate* is now quoted grey prompt 24 per cent., London, Hull, and Leith, £12 per ton ; Beckton not offering ; Beckton terms prompt £12 per ton.

Antimony.—*Regulus*, £39 per ton, *crude Japan*, £21 10s. per ton, landed.

Bleaching Powder (Chloride of Lime).—English £6 per ton.

Borax—Quiet, *crystals* 16s. 3d. per cwt., *powder* 6d. per cwt. more money.

Bromine and Bromides—Are steady at unchanged prices.

Camphor.—*Crude* is quiet and unchanged ; while the German makers of *refined* yesterday advanced their price ¾d. per lb. to 1s. 8¼d. for ton lots, the English makers hitherto quoted 1s. 7½d. per lb. for *bells* and *flowers* in ton lots. It is, however, expected that they will also very shortly advance their price to 1s. 8½d. per lb.

Cloves.—Privately *Zanzibar* are quiet but prices steady, business done for March-May delivery at 3 1/32d. At auction only 20 bales *Zanzibar* offered and bought in at 3 3/32d.

Coal Tar Distillation Products.—*Toluol* : Pure, 1s. 3d. per lb. ; commercial, 10d. per gallon. *Benzole* : 50 per cent., 8d. per gallon ; 90 per cent., 7½d. *Creosote*, 3½d. per gallon. *Crude Naphtha* : 30 per cent., at 120° C., 3½d. per gallon. *Solvent Naphtha* : 95 per cent. at 160° C., 1s. 4d. per gallon. *Anthracene* : A, 3½d. per unit ; B, 2¾d. per unit. *Pitch*, 28s. per ton, *f.o.b.* *Tar* : Refined, 12s. 9d. per barrel, 2⅛d. per gallon ; crude, 12s. 6d. per barrel, 2⅛d. per gallon.

Cocaine.—Makers have not so far advanced their prices, which remain as quoted last week, market is, however, very firm.

Codeia—Firm at 12s. 3d. to 12s. 6d. per oz. for the *pure* according to quantity.

Cod-Liver Oil.—Market is somewhat steadier at nominally unchanged price.

Cream of Tartar—Quiet. First white crystals spot 74s. per cwt., powder 76s. to 77s. 6d. per cwt., according to quality.

Ferri et Quinæ Citras, B.P.—Howards reduced price on 8th inst. to 7½d. per oz. in bulk and 8½d. per oz. in 1-oz. vials.

Ginger.—*Cochin* continues very dull, 571 packages offered being all bought in, except a few bags brown cuttings, which sold at 17s. *Jamaica* in large supply resulted in lower prices. Over 1300 packages offered and about half sold, good bold hard at 77s. 6d. to 80s. ; medium and bold, 73s. 6d. to 75s. ; medium to fair bright, 66s. to 72s. ; ordinary to good ordinary, part lean, at 54s. to 64s. 6d. 90 bags *Japan* offered and bought in, slightly wormy, at 20s. 6d.

Glycerine—Is very weak at 53s. to 57s. 6d. per cwt. for *German*, and 48s. 6d. to 50s. per cwt. for *English* refined, 1260° quality, in tins and cases.

Iodine and Iodides—Are unchanged at prices quoted last week.

Mercurials.—Last week's advance is maintained.

Morphia.—No alteration in price to report.

Oils (Fixed) and Spirits.—*Linseed* strong and dearer, London spot, pipes, £18 10s. to £18 12s. 6d. ; barrels, £18 17s. 6d. to £19 per ton ; June-Aug , £18 7s. 6d. ; Sept.-Dec., £17 10s. ; Hull spot, naked, £17 10s. ; June-Aug., £16 17s. 6d. ; Sept.-Dec., £16 2s. 6d. *Rape* very firm ; ordinary brown, spot, £21 5s. to £21 10s. ; June-Aug. and Sept.-Dec., £21 5s. to £21 10s. ; refined spot, £22 15s. ; Ravison, naked spot, June-Aug. and Sept.-Dec., £17 5s. *Cotton* quiet, London crude spot, £14 5s. ; June-Aug., £14 10s. ; refined spot, £16 to £17 per ton, according to make ; Hull naked, refined spot, and June-Aug., £15 ; crude spot, £14 ; June-Aug., £14 7s. 6d. per ton. *Olive* : Mogador, £30 to £31 ; Spanish, £30 to £32. *Coconut* : steady ; Ceylon, spot, £25 10s., landed, July-September shipment, £24 5s., *c.i.f.* ; Cochin, spot, £29 ; May-June shipment, £26 10s. ; August-October, £26 5s., *c.i.f.* *Palm* : Lagos, spot, £23 10s. *Lubricating* : pale American, spot, 5s. 6d. to 7s. per gallon ; black, 5s. to 5s. 9d. ; Russian black, 5s. to 5s. 6d. ; pale, 5s. 9d. to 8s. *Turpentine* : After being dearer, has again sharply declined for spot, while, for delivery, price remains steady, spot, is quoted 33s. 6d. per cwt., June, 30s., July, 27s. 9d., September-December, 27s. 1½d. to 27s. 3d., January-April, 1900, 27s. 9d. to 28s. per cwt. *Petroleum* firm ; Russian, spot, 4⅝d. ; September-December, 4¾d. per gallon ; American, spot, 5d. to 5⅛d. ; September-December, 5⅛d. Water-white, 6⅛d. to 6¼d. *Petroleum Spirit* : American, 9d. ; deodorised, 9d. to 9¼d. per gallon.

Opium—Quiet and without change.

Oxalic Acid.—3¼d. to 3½d. per lb. nett, free delivered London.

Quicksilver.—Importers' price is still £8 2s. 6d. per bottle, while secondhand is not offering.

Phenacetin.—Dull and weak at 3s. 3d. to 3s. 6d. per lb. for both *crystals* and *powder* in quantity.

Potash Compounds—Are quite without change at the prices given last week.

Quinine.—In the absence of speculative demand the article has turned very quiet at 1s. 3½d. per oz. spot and 1s. 4d. per oz. for August delivery, *B & S* or *Brunswick*, in 1000 oz. lots, from second hand. The makers of these brands still quote 1s. 6d. per oz. are, however, naturally doing no business thereat.

Shellac.—Market is very quiet at nominally unchanged prices, *TN* being quoted 68s. per cwt. on the spot, basis fair ; same price *c.i.f.* for April-June steamer shipment, and 72s. per cwt. landed for August delivery.

Soda Compounds.—There are no alterations in value to report.

Spices (Various).—*Black Pepper* : Singapore bought in at 5½d. and Penang at 5⅛d. *White Pepper* : Singapore bought in at 8½d., and Penang at 8d. ; of Siam 20 bags sold, without reserve, at 8¼d. to 8⅜d. *Chillies* : 140 bags Japan sold, fair bright at 35s., with one lot at 35s. 6d. ; 8 bales Zanzibar sold at 31s. 6d. *Capsicums* : 2 bales Natal bought in at 120s. ; 24 bales Bombay sold at 30s. *Cassia Lignea* : 127 cases sold, chiefly without reserve, fair new, false packed, at 43s. *Cassia Vera* : 116 bags Japan bark and chips bought in at 24s. *Cinnamon Chips* : 284 bags bought in at 3¼d. *Mace* : 20 cases West India sold, good pale at 1s. 7d. to 1s. 8d., good red at 1s. 5d. to 1s. 6d., good pickings at 1s. 4d., broken red at 1s. 1d. *Pimento* : 326 bags bought in at 2⅞d. to 4⅜d.

Star Aniseed Oil—Firm at 5s. 10½d. per lb. on the spot, and 5s. 8d. per lb. *c.i.f.* for July-August steamer shipment.

Sulphate of Copper.—Firm at £25 5s. to £26 15s. per ton according to brand, etc.

Sulphonal—Unchanged at 17s. per lb. for both *crystals* and *powder*, this being makers' price. The stocks in second hand are now practically exhausted.

Tartaric Acid.—*English* 1s. 1d. per lb. on the spot, *foreign* 1s. 0¼d. per lb., *c.i.f.*

To-day's Drug Auctions passed off quietly, without any particular change, price of Ipecacuanha being maintained. The following are the particulars:—

Aloes.—2 cases, one good and one fair, *Zanzibar*, sold at 70s. per cwt.; 62 kegs good *Socotrine* did not sell; 786 gourds all sold at 21s. down to 15s. 6d. per cwt.

Ambergris.—5 tins, part sold at 39s. per oz.

Anatto Seeds.—38 bags were held for 2½d. per lb.

Areca Nuts.—8 bags good quality bought in at 45s. per cwt.

Anitol.—4 cases catalogued as pure Russian Anitol were bought in at 7s. per lb.

Antimony.—40 cases crude *Japan* were bought in at £24 10s. per ton.

Argol.—9 bales *Cape* bought in, part at 45s. and rest at 30s. per cwt.

Balsam Copaibæ.—2 cases clear, were bought in only 1s. 3½d. per lb. being bid.

Balsam Peru.—1 case bought in at 8s. 3d. per lb.

Balsam Tolu.—33 cases rather soft were taken out at 1s. 7d. per lb.; less money would, however, probably have been accepted. 18 cases of good quality part sold later in the day at 1s. 4d. per lb.

Buchu Leaves.—8 bales rounds rather stalky, but otherwise of fair quality, were taken out 4d. per lb., 12 bales ditto at 5d., a bid of 3½d. per lb. being declined.

Calumba Root.—7 bags fair washed were taken out at 42s. per cwt., 142 bags fair sorts sold at 12s. 6d. per cwt.

Camphor.—100 cases *crude China* all bought in at 130s. to 132s. 6d. per cwt., 10 cases *Japan refined* in 1 oz. tablets at 1s. 6d. per lb.

Canella Alba.—5 bales of good quality were taken out at 40s. per cwt.

Cardamoms.—Fair to good *Mangalores* sold at 2s. 4d. to 2s. 6d. per lb., while for fine bold a bid of 3s. 3d. per lb. was declined. 5 cases medium to fair *Ceylon* sold at 1s. 11d. to 2s. per lb,; good ditto, 2s. 6d. to 2s. 9d.; fine at 3s. 3d. per lb.; fine *seed* sold at 2s. 5d. per lb.

Cascara Sagrada.—25 bales good bright bark were taken out at 45s. per cwt.

Cascarilla Bark.—Good quality sold as high at 61s. per cwt. down to 35s. for medium.

Cassia Oil.—5 cases of fair quality were bought in at 4s. 9d. per lb.

Castor Oil.—15 cases *Calcutta firsts* were taken out at 4d. per lb., and 70 cases ditto *seconds* at 3½d. per lb.

China Soy.—18 casks were bought in at 1s. 8d. per gallon.

Chiretta.—19 barrels of good quality were taken out at 3½d. per lb.

Cinchona Bark.—52 bales yellow bark sold freely at 10d. per lb. for the sound, and at 4d. to 8d. per lb. for 4 to 1 CCD. 51 bales flat *Calisaya*, part sold at 8d. per lb. for ICCD.

Cummin Seed—Of 41 bags part sold at 13s. 6d. to 14s. per cwt., subject to approval.

Coca Leaves.—2 bales broken *Truxillo* sold at 8½d. per lb.

Cod Liver Oil.—15 barrels catalogued as finest *Norwegian* cod liver oil did not find a buyer, and were taken out at 70s. per barrel.

Croton Seed.—2 bags rather dull of appearance were bought in at 40s. per cwt., while 15 bags were taken out at 53s. per cwt. for fair bright.

Cubebs.—80 bags were held for 25s. per cwt.

Dill Seed.—28 bags sold, subject to approval, at 9s. per cwt.

Dragon's Blood.—10 bales of low common quality sold without reserve at 10s. to 13s. per cwt., while fair to good quality was held for £10 10s. to £13 per cwt., 1 case fine selling at £19 5s. per cwt.

Galangal Root.—10 bales of fair quality were bought in at 25s. per cwt.

Gamboge.—4 cases only fair quality sold at £7 15s. per cwt., while for fair pipe £8 10s. per cwt. was asked, and for good pipe £10 per cwt.

Gentian.—45 bales of fair quality were bought in at 16s. 3d. to 16s. 6d. per cwt.

Guaza.—58 Robbins dusty and of not very desirable quality were held for 6d. per lb., while another lot of 129 Robbins good tops was held for 5d. per lb.

Gum Arabic.—5 cases fair grain part sold at £6 12s. 6d. per cwt. remainder being bought in at £7 10s., 20 serons *Turkey* sorts were bought in 70s. to 80s. per cwt.

Gum Guaiacum.—6 barrels good quality, part sold at 1s. 6d. per lb.

Gum Benzoin.—17 cases *Siam* all bought in, £18 per cwt. being price mentioned for part, fair *Palembang* sold at 50s. to 51s. per cwt.; while medium to fair seconds *Sumatra* was sold for £7 5s. to £7 10s. per cwt., good seconds ditto were held for £8 to £8 10s. per cwt.

Gum Kino.—2 cases genuine *Cochin* bought in at 7s. 6d. per lb., while another lot of 5 cases said to be *Cochin* was bought in at 3s. 6d. per lb.

Gum Myrrh.—8 casks good quality were taken out at 110s. per cwt., while 29 cases low dark quality were bought in at 30s. per cwt., 4 cases good sorts selling at 70s. per cwt.

Rose Oil.—5 pots were bought in a 4d. per oz.

Gum Sandarac.—13 packages *Australian* realised 25s. per cwt. for the sound portion.

Honey.—44 barrels good to fine white *Jamaica* all sold at 24s. 6d. per cwt. down to 20s. for rather inferior. 54 cases fair *Californian* were bought in at 36s. per cwt. 20 cases fine liquid ditto at 40s. per cwt., and 10 cases *Italian* at 33s. per cwt.

Ipecacuanha.—15 bales *Carthagena* part sold at 10s. 3d. to 10s. 6d. per lb., balance being bought in at 10s. 9d. Good *Rio* sold at 13s. 6d. per lb., the market remaining very firm.

Isinglass.—6 bales *Japan* strip of good quality were taken out at 1s. 6d. per lb.

Kamala.—5 cases fair bright were bought in at 6d. per lb.

Lime Juice.—7 casks sold at 1s. 1d. per gallon.

Menthol.—5 cases fair *Japan* bought in at 7s. per lb.

Musk.—3 tins *Tonquin* bought in at 40s. per oz., while for two caddies of fair quality 65s. per oz. was price mentioned.

Nux Vomica.—83 bags small *Cochin* sold readily at 8s. per cwt; while 360 bags medium rather brown *Madras* were bought in at 8s. to 10s. per cwt., 22 bags fine bold bright *Cochin* were held for 12s. per cwt.

Oil Eucalyptus.—Of 24 cases 5 cases of fair commercial quality in tins of 23 lbs. nett sold at 1s. 4d. per lb.; lower quality in drums was taken out at 1s. per lb. 15 cases *Globulus* part sold at 2s. 2d. per lb.

Oil Lemongrass.—8 cases bought in at 3d. per oz.

Orange Peel.—12 packages sold at 6d. per lb. for fair down to 4½d. for inferior.

Orchella Weed.—4 bags bought in at 14s. per cwt.

Orris Root.—5 parcels *powder* each net 28 lbs. of good quality catalogued *Stafford Allen and Sons' grinding*, sold cheaply without reserve at 22s. per cwt.

Quince Seed.—1 bag good sold at 1s. 5d. per lb.

Rhubarb.—81 cases were chiefly bought in; fair flat *Canton* sold at 1s. 2d. to 1s. 3d. per lb.; rough round and high dried at 6½d. per lb., while for 4 cases fair flat 10½d. per lb. and for 2 cases round and flat 9d. per lb. were accepted, both, however, subject to owners' approval; fair round *Shensi* was sold at 2s. 2d. per lb., fair flat being held for 2s. 6d. per lb. and fine for 3s. 6d. per lb.

Sarsaparilla.—14 bales *Jamaica* sold at 1s. 8d. per lb. for sound, and 1s. 6½d. per lb. for ICSD. 11 bales *Lima* part sold at 1s. 3d. per lb. for ICCD. 8 serons *Honduras* were bought in at 1s. 5d. per lb.

Scammony Root.—351 bags all bought in, 22s. 6d. per cwt. being price mentioned.

Senna.—7 bales bold leaf *Tinnevelly* of fair colour were bought in at 7d. per lb.; 4 bales ditto at 8d. per lb.; 2 bales small spotty sold for 3½d. per lb.; and 2 bales ditto broken at 2¼d. per lb. 6 packages yellow *Alexandria* were bought in at 6d. per lb.

Squills.—Of 5 bags, 4 bags were bought in, while 1 bag sold at 2¼d. per lb., subject to approval of owner.

Sulphate of Quinine.—A rather "scratch" lot of 4 cases both as regards brands, packing, and kinds, there being besides *sulphate* some ¼-ko. tins of *Bisulphate* and *Muriate*, were bought in, a bid of 1s. 1d. per oz. not being entertained. Another lot, consisting of 18 cases *Anerbach* and 2 cases *Zimmer*, were taken out at 1s. 4d. and 1s. 3d. per oz. respectively.

Star Anniseed Oil.—2 cases fair were held for 5s. 9d. per lb.

Tamarinds.—16 barrels *West Indian* were bought in at 10s per cwt.

Tonquin Beans.—1 cask fair *Angostura* were bought in at 3s. 6d. per lb.

Wax.—Fair *Zanzibar* sold at £5 12s. 6d. to £5 17s. 6d. per cwt., while for 19 bales ditto of good quality £6 7s. 6d. was refused. Fair *Madagascar* realised £6 12s. 6d.; fair *Jamaica* sold at £7 5s. per cwt.

Newcastle Chemical Report.

May 10, 1899.

More business in heavy goods is now passing. Shipping orders for the Baltic ports are in free circulation. Bleaching Powder is specially in request, and dcliveries are much above the average. Soda Crystals for home use are going better. Sulphur is still scarce. Quotations are:—Bleaching Powder: £5 7s. 6d. to £5 12s. 6d., according to markets. Soda Crystals: 45s. to 47s. 6d. Caustic Soda: 70 per cent. basis, £7 to £7 5s. Soda Ash: 52 per cent., £4 5s. to £4 10s. Alkali: 52 per cent., £5 5s. Sulphur: £4 15s. to £5 per ton.

Liverpool Market Report.

May 10, 1899.

The chief variations in price from last week's report are confined to oils, Linseed and Cottonseed being slightly lower, whilst Olive has advanced 10s. per tun. Good sales of Beeswax are included in the list of miscellaneous items, as well as transactions in Gum Arabic "sorts" and Brazilian Arabic. Carnauba Wax has commanded a considerable amount of attention and good sales of "grey" have taken place at full prices.

Ammonia Salts.—*Sulphate* is very brisk at £11 10s. to £11 12s. 6d. per ton.

Beeswax.—20 bags of Buenos Ayres made £7 6s. 3d. per cwt.; 5 bags of Cuban, £7, and Peruvian sold at £7 5s. to £7 7s. 6d. per cwt.

Bleaching Powder—Is still quiet at £5 per ton.

Canaryseed—Is in moderate demand; 400 bags of Turkish sold for 26s. per 464 lbs.; closing price, 25s. 6d. to 26s. 6d. per 464 lbs.

Carnauba Wax.—About 250 bags of grey changed hands at 41s. to 45s. per cwt.

Copperas—Is very firmly held at 40s. per ton for Lancashire and 37s. per ton for Welsh.

Copper Sulphate—Is still firm at £26 10s. per ton.

Gum Arabic—Small amounts of "sorts" have been disposed of at 65s. per cwt. A fair inquiry is experienced for Brazilian, and sales have taken place at 19s. per cwt.

Linseed—Is dearer and firmly held by shippers, but buyers are unwilling for business at present rates. Calcutta seed for May and June shipment is 35s. 9d. per 416 lbs., and River Plate 33s. 6d. for same dates. Sales include 200 tons of River Plate on the spot at 34s. 3d. per 416 lbs.; 200 tons Calcutta afloat, near at hand, 36s. 6d.; and 200 tons, May shipment, at 35s.

Oils (Fixed) and Spirits.—*Castor* is quiet but steady, Calcutta "spot" 2⅞d. to 2 15/16d. per lb., "forward" rather firmer. French 1st pressure 2¾d. per lb., 2nd pressure 2⅝d., Madras 2¾d. per lb. *Olive*: Spanish oil is dearer, and quotations rule £31 10s. to £32 per tun. *Linseed* is a little easier, with fair demand at 19s. 6d. per cwt. *Cottonseed* is steady at 17s. to 17s. 3d. per cwt. in export barrels. *Spirits of Turpentine* are quiet at 36s. per cwt.

Manchester Chemical Report.

May 10, 1899.

The export returns for the past month bear out the idea expressed from time to time recently as to the general improvement which has taken place in the chemical trade. The imports of chemical dyestuffs and tanning substances are about the same as last year, a little over half a million. The exports of chemical and medicinal preparations show a decline of 5·2 per cent., £724,988, as against £765,130 this time last year. Considering the serious decline in Alkali exported to the States, it is satisfactory to note that there is only a decline of four per cent. on April last year, and values are also well maintained, but in Bleaching materials there is an increase of 17·4 per cent. (114,845 cwts. as against 97,809), but the increase in value has not maintained an equal ratio, only 2 8 per cent., the figures being £27,950 in 1898 and £28,720 in 1899. It is almost startling to see that in 1897, two years ago, the quantity of Alkali exported to the States was 258,963 cwts., last month it was only 61,758 cwts. So far as this centre is concerned, there have been few changes during the past week, and manufacturers appear pretty well employed. High strength Caustic Soda continues scarce, and Ammonia Alkali, 58 per cent., is firmly held at late rates. Sulphate of Copper varies from £26 10s. to £27 per ton, best brands, delivered Manchester, and Brown Acetate, £5 15s. to £6 per ton, Welsh and American, here. Acetate of Soda is lower, and offered at £13 per ton, *c.i.f.* The news of the break up of the glycerin combine was confirmed in our market on Friday, and it was stated that there was great competition for the small number of orders to be given out. Quotations will be very fluctuating now for some time to come. Alum is quiet, and some makes can be bought at lower figures.

PERSONALITIES AND BUSINESS NOTES.

[Notices are inserted free in this column, if sent by persons directly interested or otherwise properly authenticated.]

Mr. Thomas Cooper, chemist and druggist, of Sycamore View, Oxford Road, Macclesfield, has recently been elected a Councillor on the Town Council for No. 5 Ward, in the room of the late Councillor Bloor, and has been placed on the Water, Gas, and Parliamentary Committees of the Council.

Mr. George Senter, of the Central School of Pharmacy, Edinburgh, has taken the medal in the Honours Class in Electricity and Magnetism, and also the medal in the Advanced Practical Physics Class at the Heriot-Watt College.

Mr. Charles A. Pratt, chemist and druggist, was unanimously elected an Overseer of the Poor by the Town Council of Saltash at their last meeting.

Mr. D. Lewis, pharmaceutical chemist, formerly senior dispenser to Messrs. Bradley and Bourdas, Belgravia, S.W., has purchased the old-established pharmacy of Mr. John Hamer, 289, Broad Street, Pendleton, Manchester.

Mr. Edwin A. Morgan, M.P.S, is shortly opening a business in the High Street, Royston, Herts. He has been well known in the town and district for many years, and we understand he has an excellent connection there.

Messrs. Clayton and Jowett, Ltd, essence distillers, Concert Street, Liverpool, well known among mineral water manufacturers, have had the whole of their offices remodelled, and they now present a handsome and striking appearance. The entire alterations have been carried out by Messrs. Ayrton and Saunders, shopfitters, Liverpool.

Mr. C. D. Moffat, pharmaceutical chemist, Kingston, Jamaica, and late of London, recently gave professional evidence for the defence in an Excise case, in which the defendants were charged with entering almost pure alcohol at the Customs as tincture of saffron.

Publications Received.

City and Guilds of London Institute for the Advancement of Technical Education: Report to the Governors—March, 1899. Pp. xl. + 160. London: Gresham College, Basinghall Street, E.C. 1899. From the Publishers.

Einfuhrung in die praktische Nahrungsmittelchemie. Bearbeitet von Dr. Hermann Thoms. Mit einem Anhange Botanisch-Mikroskopischer Teil, bearbeitet von Dr. Ernst Gilg. Pp. viii. + 415. Leipzig: Verlag von S. Hirzel. 1899. From the Publisher.

Animal Simples Approved for Modern Uses of Cure. By W. T. Fernie, M.D. Pp. xxiv. + 565. Price 6s. Bristol: John Wright and Co. 1899. From the Publisher.

Golden Rules of Medical Practice. By Arthur Henry Evans, M.B., B.S. (Lond.), F.R.S.S. (Eng.). No. iv. Pp. 71. Price 1s. Bristol: J. Wright and Co. 1899. From the Publishers.

EXCHANGE.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Sale or Exchange, 300 stock bottles and jars, set of six specie-jars.—Hugh Walton, Market Place, Alston.

Daisies in 3 doz., 8s.; Munyon's in 3 doz., 7s. 6d.; 6 doz, 7s. 3d.; Savaresse's Santal Capsules, 28s. doz.; post paid.—Eastman, Forest Lane, Stratford, E.

Stocktaking Clearing Lines.—New 5000 cartes, the lot 15s.; 2500 cabinets, 25s.; 1000 stereoscopic, 12s.; 1000 ½ plates, 12s.; 1000 ¼ plates, 5s.; 1000 (¼ pl.) 8×6 Oxford Lines, 15s.; 1000 waterproof cabinets, dark, 15s.; 1000 "Slip in Pocket" Kodaks, 17s. 6d; soiled, 500 assorted "Slip Ins," 15s.; 1000 each c.d.v. and cabinets, G.B.E. light colours, 25s. (lot); 1000 each ditto, dark, 30s.; 1000 ¼ plates G.B.E., 7s. 6d.—Edward Peck, East Dereham.

Materia Medica Cabinet, £5, take £2; also Minor Books.—Coles, Theale, Berks.

'Chemist and Druggist' from 1873 to 1899, cash offers; also 'Diary,' 1877 to 1899.—Woodward, North End, Uttoxeter.

For Sale, 5 cwt. Dried Dandelion Roots, 45s. per cwt., or smaller portion.—Holbrook, City Road, Derby.

For Sale, Mahogany Medicine Chest of superior workmanship, 14 by 13 in., 8½ deep, contains 40 bottles, scales, weights, 5 drawers sliding back with spring, £7 10s., cost £20.—Bailey, 69, Gower Street, London.

Microscope, 3 power objectives, rack-and-pinion adjustment, 9 slides; £1 15s. the lot.—Bell, 6, Milton Terrace, Dewsbury.

Hooper's Water or Air Bed for 4 ft. bedstead. Almost new. Cost £15 few months ago. Used in amputation case.—John Ettles, Chemist, Burnham-on-Crouch.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Latest Edition Deschanel's 'Philosophy,' good condition.—Moore, 10, Park Square, Luton.

Empty Munyon's Case; also Dispensing Scales with Pillar.—Eastman, Forest Lane, Stratford, E.

Marriages.

Foster—Plumpton.—On May 10, at St. Andrew's Church, Collumpton, Murray Toogood Foster, M.P.S., son of Mr. Joseph Foster, chemist and wine merchant, of Collumpton, to Emmie, daughter of Mr. P. Plumpton, of Collumpton.

Bamford—Benson.—At St. Andrew's Church, Georgetown, British Guiana, on April 8, 1899, by the Rev. W. B. Bitchie, M.A., Harry Bamford, chemist and druggist, only son of James Bamford, of Staleybridge, England, to Flora Alexandra Benson, only daughter of George C. Benson, L.G. Electrician, Georgetown.

Obituary.

Davies.—On May 6, Sidney Edward Davies, Chemist and Druggist, Braintree. Aged 21.

Roe.—On May 6, Septimus Roe, Pharmaceutical Chemist, Salisbury. Aged 75. Mr. Roe, who has been a member of the Pharmaceutical Society since 1847, was accidentally killed by being knocked down by a carriage and pair of horses.

FOLDED BOTTLE CASES.

	PER 1,000.		PER 1,000.
2 oz.	15/-	8 oz.	26/9
3 oz.	17/-	12 oz.	29/-
4 oz.	19/-		
6 oz.	21/6	16 oz.	35/-

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Calendar for the Week.

Sunday, May 14. 1st after Ascen. Sun rises, 4.13; sets, 7.42.

Monday, May 15. Sun rises, 4.11; sets, 7.43.

Tuesday, May 16. Sun rises, 4.10; sets, 7.45.
Pharmaceutical Society of Great Britain, Whitehall Rooms, Hôtel Métropole, S.W., at 6.45.—Annual Dinner.
Royal Institution, Albemarle Street, Piccadilly, W., at 3 p.m.—Professor W. J. Sollas will deliver the first of a course of three lectures on "Recent Advances in Geology."
Royal Photographic Society, 12, Hanover Square, W., at 8 p.m.—Exhibition of "Specimens of Work with Irregular Grained Screens," etc.

Wednesday, May 17. Sun rises, 4.8; sets, 7.46.
Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C., at 11 a.m.—Meeting of Council, followed at 12 noon by the Annual Meeting and Election of Council.
Royal Microscopical Society, 20, Hanover Square, W., at 7 30 p.m.—Exhibition of Pond Life.

Thursday, May 18. ☽ 5.13A. Sun rises, 4.7; sets, 7.48.
Chemical Society, Burlington House, Piccadilly, W., at 8 p.m.—Papers on "Corydaline," Part vi., by J. J. Dobbie and A. Lauder, and on "Oxidation of Furfurol by Hydrogen Peroxide," by C. F. Cross, E. J. Bevan, and T. Freiberg.
Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C.—Adjourned Annual Meeting.

Friday, May 19. Sun rises, 4.5; sets, 7.49.

Saturday, May 20. Sun rises, 4.4; sets, 7.51.
Wholesale Chemists' and Druggists' Cricket Championship, Brockley.—Davy Hill's *v.* Burgoyne's.

Advertisements.

(Received too late for Classification).

WINSLOW.—Junior or Improver wanted at once. Good-class dispensing and mixed country trade. Work light and clean. Hours short, no Sunday duty. Out-doors. Full particulars and photo to R. A. Easton, Market Square, Winslow, Bucks.

WANTED, all Assistants to read Mr. R. E. Wright's address, printed on page 5 of last week's Journal.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Abraham, Abram, Akhurst, Austin, Bartlett, Batley, Blackburn, Branson, Breeze, Burroughs, Cowley, Cruickshank, Cummings, Dunstan, Ekins, Gartside, Gledhill, Hebb, Herbert, Hewlett, Hey, Hill, Hitchin, Hooton, Ireland, Kimpton, Lambert, Lewis, Lorimer, Lothian, Makepeace, Murison, Noak, Palmer, Pratt, Rees, Reeve, Reynolds, Richardson, Sanderson, Scott, Spence, Street, Thompson, Uhlich, White, Wright.

POLITICAL GOSSIP.

The Standing Committee on Trade has now finished with the Food and Drugs Bill, which has been reported to the House with amendments, and is in many respects a much-improved measure. It has been put down for consideration on Thursday, June 1, and is the third order on the paper for that date, but its chances of a hearing then are somewhat remote, seeing that Mr. Chamberlain's Small Houses Bill is No. 1 on the list, and that an opposed Irish measure furnishes the second item. We print on page 476 the principal clauses of the amended Bill so far as it relates to drugs, and would direct attention to a few of the salient provisions therein set forth. Chief amongst the innovations is the proposal that an invoice shall be deemed a warranty, without the addition of specific words expressing a guarantee. For this sheet-anchor retailers are indebted to Mr. R. G. Webster, the well-known member for E. St. Pancras, who, as a barrister and the author of a work on trade, seems to have been particularly fitted for a seat on the Grand Committee. He succeeded in carrying his point with respect to the elevation of invoices to the dignity of guarantees in the face of the opposition of the Government representatives on the Committee, defeating Mr. Long by twenty votes to sixteen. Mr. Webster also essayed to follow up his success by proposing that where a defendant is discharged under shelter of his invoice, the prosecution should be entitled to proceed against the wicked manufacturer of the spurious document. The proposal was, however, not pressed.

Protection by Invoice is a comforting thing for a retailer, but there is a danger that it may render him a trifle less careful than he might otherwise be concerning the standard of the medicinal substances supplied to him for distribution to the public. In the case of foreign invoices or warranties, the danger of too childlike a reliance is recognised in the Bill, for in sub-section 2 of Clause 19 it is proposed that before a purchaser can claim the protection of the warranty, he shall be required to show that he used reasonable care to ascertain its value. It can hardly bo expected that manufacturers and wholesale dealers can fill their offices with clerical copies of George Washington, but Mr. Webster's additions to the Food and Drug Bill will have an excellent effect if it induces a practice of straightforwardness in business transactions and banishes fiction from commercial billheads. Of course, the invoice giver is not always the guilty party. It may happen that falsification or deterioration takes place after delivery to the retailer, and it is only just that this eventuality should be provided for. In the Bill under discussion ample provision is made for the hearing of both sides of the case, and for the due representation of the interests of the person giving the warranty. A clause is also inserted safeguarding the servant who innocently sells for a master who bought under a warranty.

The Sufficiency of the analyst's certificate as evidence is a point to be noted. A good deal of controversy has at one time and another circled round this question, but the defendant cannot be prejudiced by the operation of a clause such as that numbered 21 in the Bill. He will save money by not requiring the attendance of the analyst upon whose certificate he relies, and may possibly gain by not having to submit the analyst to examination and cross-examination. It will be observed that the Bill contains no allusion to the Court of Reference upon which both Mr. Kearley and Sir C. Cameron have manifested considerable interest. Both gentlemen seemed to think the atmosphere of Committee Room unfavourable to the discussion of this project, for they made no attempt to bring up the clauses they had drafted. Sir Charles has, however, given notice that on June 1 he will move the adoption of the Reference clause. He has also one or two elaborate clauses on warranties and wholesale dealers, and the exemption of defendants who can prove their innocence; all of which seems like "painting the City," for the Bill as it stands is sufficiently explicit on these points to afford adequate guidance to a Court called upon to deal with the infinite variations arising from food and drug prosecutions.

Mr. Strachey is disgusted with the Committee and all its works, and is as little enamoured of the amended Bill as he was with the unadulterated measure which issued from the pigeon holes of Mr. Long's office. He proposes to ask the House of Commons to pause before considering the Bill any further, and he will move Parliament to express the opinion that the Bill does not sufficiently guard the interests of the consumer and producer, and only slightly prevents dishonest trading. Perhaps the House may, like the public, prefer the slightly increased honesty to the prospect of no legislation at all.

Lord Harris has produced the Oyster Bill in the House of Lords, perhaps because he is a man of Kent, and lives within hail of Whitstablo, where the natives come from. The Bill provides more work for the over-worked Local Government Board and more for local authorities. Layings are to be inspected and the removal of oysters from insanitary layings is to be prohibited. The object of the promoter is to restore confidence in the oyster and to protect the public against the dangers arising from the consumption of unwholesome bivalves. It is somewhat grandmotherly in its provisions.

Spirits in Bottle, including perfumed spirits and liquors, cordials, and other spirituous preparations in bottle, imported into Great Britain are to be charged with a surtax of 1s per liquid gallon. The Chancellor of the Exchequer is very fond of tampering with the spirit duties, but chemists should be thankful that his concessions to the wine party have not driven him further than this shilling tax on bottled imported spirits. Perhaps he preserves a lively recollection of the pharmaceutical opposition to the sixpenny tax on spirits some few years ago, and thought it wiser this time to look to the foreigner to supply the necessary revenue.

The Question of Unqualified Dispensers was raised anew by Major Rasch on May 12, when he asked the Vice-President of the Committee of Council whether the Executive of the General Medical Council had stated, in its reply to the Privy Council, what grounds it had for considering that accidents due to the employment of unqualified dispensers by medical practitioners are very rare; and if not, whether he would ask the Executive what means it has of knowing the number of accidents, fatal and otherwise, which have resulted in doctors' surgeries from the employment of unqualified dispensers. In reply, Sir John Gorst said the infrequency with which such cases were reported to the Privy Council tends to confirm the opinion of the General Medical Council that they are very rare, and the Privy Council have not, therefore, thought it necessary to ask the General Medical Council for any further information.

The Whitsuntide Recess commenced on Friday, the 19th inst., and terminates on Wednesday, the 31st inst.—that is to say, on Derby Day. The House of Lords will not resume until June 1. Meantime, the Pharmacy Bill and its medical colleague are in a condition of suspended animation, and company legislation is likely to remain in abeyance, notwithstanding Mr. Faithful Beggs' anxious inquiries as to when the Select Committee is likely to finish its investigation.

SCHOOL OF PHARMACY.—SESSION 1889-1890.

The appearance of the annual School photograph is a reminder that another session has nearly run its course. It gives an opportunity, moreover, for a few general remarks concerning such changes as have taken place and the work so far completed. The photograph itself is remarkable for the absence of tobacco-pipes, emblems of unconventionality, which have, in the past, frequently obscured the features of some of the sitters. The task of making the necessary arrangements fell to Mr. Horace Finnemore, to whom great credit is due. Only those who have undertaken the work know how difficult it is to get together the whole staff and all the students; but the difficulty does not end there, inasmuch as inclement weather often causes the postponement of the gathering four, and sometimes even five times.

It will be noticed that changes have taken place in the teaching staff. The faces of Mr. Harold Wilson and Mr. J. A. Dewhirst will be missed, and since the group was taken, Mr. Colin C. Frye, as recently announced, has left the School. Mr E. M. Holmes also was unfortunately unable to be present Those three gentlemen all left amid feelings of the greatest cordiality, so much so that on the departure of each a special meeting of the students was called and a token of esteem presented, together with the heartiest expressions of goodwill.

Perhaps the most important innovation of the year is the column in the *Pharmaceutical Journal* which from time to time is specially devoted, by the kindness of the Editor, to School of Pharmacy news. The promoters of the enterprise, which was first undertaken on December 10 of last year, have every reason to believe that in time there will be no difficulty in finding ample matter relating to the Square and its Alumni to use all the space at their disposal. Old students can render valuable aid by sending newspaper reports directly concerning themselves; these and reminiscences of old times will always be welcome. In the past there has always been lacking a full account of each session's doings, and the students of to-day are doing their best to hand down a complete record to their successors.

The students are to be congratulated on their new commodious quarters in Galen Place for operations in galenical pharmacy. The laboratory is fitted with every accommodation in the way of gas, water supply, and sinks, while the loftiness of the room and the abundance of windows render ventilation all that can be desired. The old upper octagon room, which was formerly devoted to the purpose, always became insupportably hot when full of students, while its acoustic qualities rendered it impossible for class demonstration. These disadvantages still pertain to the lower octagon, which, as heretofore, is the sanctum devoted to practical dispensing. It is hoped that the day is not far distant when this work also may be done in the other building.

The new Pharmacopœia is now engaging the serious attention of the students in the elementary course. Much as they agree with its trend towards uniformity they wish it could have been pushed many points further. The formulæ for the official plasters are as bewildering as formerly, and the processes for preparing the extracts are as varied and as perplexing as ever. From the student's point of view, the introduction of new assay processes is distinctly a change for the worse. He wishes the compilers of the Pharmacopœia no harm at present, but if future editions contain large additions of that nature it is safe to prophesy an unpleasant change in his present forbearing attitude towards them. One student, somewhat of a critic in his way, has but a poor opinion of a work in which some confusion exists between two processes so wide apart as infusion and digestion.

The average student of to-day is like his prototype of twenty years ago. He starts the session with feverish anxiety to miss no lecture and profitably employ every available hour in the laboratories. Yet the fascinations of the Lord Mayor's Show prove too strong for him, and he leaves his test-tubes for half a day ere he has been in town five weeks. Nay, more than that, even a lecture cannot hold him back from the Boat Race, when that classic event comes round, and it is surprising if he does not later devote a whole day to the Derby. They did just so twenty years back!

The old chemical laboratory—the first laboratory used for teaching in London—remains unchanged. The roomy cupboards and the well-worn stools accommodate a different set of men. This, practically, is all the change from one year to another. The great old jar of opium is still the despair of successive generations of students, for is there not a legend connected with it? Long ago, when the jar reached the laboratory, the opium was in a semi-liquid condition. The Professor, while examining it, had the misfortune to let slip his valuable platinum spatula, which has remained to this day buried down, far down, at the bottom of the narcotic abyss. He let it remain for the benefit of the student who should first reach the bottom.

Square men are careful to observe the regimen prescribed for them in the inaugural address, viz., alternation of work and play. The two institutions of the School, the Students' Association and the Football and Cricket Club, have never been in a more flourishing condition. The membership of the former is a record one, upwards of seventy names being on the Register. Mr. Lucas gave it a good send-off last autumn, and the meetings have been enjoyable and well attended. It would be well if there were more debates in the future. Nothing awakes more enthusiasm among the men than a debate on a topic of current interest. The proposed division of the Minor examination engaged the attention of the Association early in the session, and created more fun than all the other meetings put together. From another point of view debates are good, in that they are better practice in public speaking than mere comments on a paper, which usually resolve themselves into remarks of a congratulatory character, a strain which does not lend itself to an infinite choice of words and phrases. The one social evening of the year gave universal satisfaction.

For the first time in its history the Students' Association has been managed entirely by students, with the intention of enabling them to gain experience in the conduct of meetings and of the general affairs of the Association. The rules of the Association are not entirely revolutionised, however, everything being conducted exactly on the same lines as before. No doubt the phrase *ut ante* is as familiar to the embryo-pharmacist as it is to the pharmacist, so much so that he puts it into practice, and is a stickler for precedent and a conservative in his tastes. A pleasing instance of anti-revolutionism is worth mentioning again. In a recent report of a meeting of the Cricket Club it was proposed that an entirely new committee should be formed, but the secretary, having alluded to "the time-honoured custom," the amendment was withdrawn.

The annual School Dinner, which proved an immense success, was conducted on slightly new financial lines. The committees of the Students' Association and Football Club jointly guaranteed any loss that might be incurred by the Dinner Committee, on the understanding that any surplus should be divided between them. As the dinner is not run for a profit, this arrangement is a source of satisfaction to the promoters, relieving them of the risk of financial embarrassments. The Committee was able this year to hand over a few shillings to each of the guarantors, thereby establishing what should prove a useful precedent for the future.

The Football and Cricket Club naturally claims some attention, and merits it well, in any account of Square doings, however meagre. There is room in this connection for a word of warning to future Squaremen, lest they should carry to excess their love of sport. In the old days, when the Minor course occupied only six months, and the Major course ran for about two months longer, there was but little time for play. From the start the men knew that the time at their disposal was all too short to enable them to successfully pass the two examinations in one session. Now all that is changed. The Minor or Elementary course itself occupies the whole session, and as a consequence, the sporting man is prone to indulge more or less unwisely in his games, with the idea that there is plenty of time—a whole session, in fact—in which to do six months' work. But that is not the case, and it is well to recognise at the very beginning that little time for sports can safely be allowed beyond the half-day on Saturday.

It is necessary to couple with these remarks an injunction to the man who transgresses the other way, spending too long over his studies, snatching long hours from sleep. Varied is the fate of such a student. He may become a drivelling idiot or a learned fool; at the best he will be a one-sided wise-head. He will never develop into an alert, capable man of business. Men who come to the Square sometimes tend to one extreme and sometimes to the other, but contact with their fellows seldom fails to tone them down to a judicious mean.

The teams engaged during the past winter were distinctly better than those engaged during recent years. They included the teams of the London Hospital, Ealing (B), Honourable Artillery Company, Old Georgians, Middlesex Hospital, and Central Technical College. Consequently the Square team had often an uphill fight, and it is indeed creditable to it that out of thirteen matches played one game was drawn and five were won. The goal average was good, and nineteen points were scored for the Square against the opponents' eighteen. Of cricket it is yet somewhat early to speak. Suffice it to say that as the football team was well captained by Mr. Wild, so there is every reason to believe that the same office will be well filled by Mr. Tibbitt in the forthcoming cricket matches.

It is impossible to leave the question of sports without reference to a new departure, brought about through the exertions of Mr. John Evans, in the shape of the Pharmaceutical Football League. Though the competition for the new cup will not be large, it will certainly be eager, and next season's football promises to be of exceptional interest to pharmaceutical footballers.

In the accompanying group are many who will shortly face what to them is an ordeal—the Minor examination. It is hoped that, when assayed by that somewhat tedious and lengthy process, they will all be found up to standard.

Vaseline Stains may be removed from clothes by painting the spot with a mixture of aniline oil and powdered soap, each 1 part, and distilled water, 10 parts. The articles are finally soaked in the liquid for five to ten minutes and rinsed with clean water. If the stains do not quite disappear the process is repeated.—*Pharm. Post*, **32**, 24.

SCHOOL OF PHARMACY—CLASS OF 1898-99.

First row.—R. Mellor, C. Palmer, G. Taylor, W. de F. Collenette, S. Greaves, W. Carlton, P. Horsley, W. Wilkinson, P. Woollatt, W. Betts.
Second row.—H. D. Kelf, W. Forster. W. Garsed, K. J. Padwick, A. J. Tipping, S. G. Robinson, D. L. Pratt, M. W. Lloyd, L. Pace, F. E. Buckingham,
Second row continued.—F. A. French. E W. Ewell, T. J. Stokoe, W. Arrowsmith, E. S. Dupuy, H. G. Weall, C. H. Baker, L. R. Tibbitt.
Third row.—Hobbs. W. Spurway, T. E. Wallis, W. L. Nundy, T. J. Wild, H. S. Durbin, A. Said, Miss Jones, Miss Taylor, Miss Magan, Miss Coney,
Third row continued —Miss Rayner, Miss Blundell, Miss Cable, J. E. Hyde, M. T. Ransom, M. Sharpley, J. E. Dyas, W. Owen, "Fred."
Fourth row —W. Whiting, G Pattison, E Chapman, F. A. Upsher Smith. R. Gompertz, T. Tickle, C. Frye, Dr. Lapworth, Prof. Greenish, Prof. Collie (*Dean*),
Fourth row continued.— Prof Green, E C. Horrell. P. B. Grav. H. Finnemore, J. Evans, H. Payne, F. Bonello, J. F. Snook, C. H. Caines.
Fifth row.—R. S. White, G T. Godolphin, N. Spiteri, T. W. Maddison. D. J. Bailey, E. G. Martin, F. M. Robinson.

FRENCH NEWS.

"Association Française" for the Advancement of Science.—The next congress of the "Association Française pour l'avancement des Sciences" will take place at Boulogne-sur-Mer on September 14, being the same date upon which the British Association purpose holding theirs at Dover with the same aims. It has been decided that views shall be mutually exchanged between the two societies, and much interest has been aroused in the possibility of great achievements accruing therefrom.

Riotous Students.—In consequence of a quarrel of a private nature between a medical student and a cadet of the Cavalry School, a number of students hissed the cadets who were present at a circus on Thursday night. The intervention of the spectators alone prevented a serious conflict. The following morning, however, a body of students attacked a company of cadets in the street. The latter drew their swords, and a fierce battle ensued. Officers and professors succeeded in stopping the fight. In the afternoon the trouble re-commenced, and the gendarmes had to be hurriedly called out to restore order. By this time what had commenced as a private quarrel had quickly developed into a sort of feud, in which the populace sided with the students. The disorders were renewed on Saturday, and the gendarmerie were again called out to disperse the combatants, several of whom on each side were severely wounded and lie in a precarious state. Fears are entertained that the students may organise a gigantic demonstration, the result of which it is easy to predict forbodes ill for the cadets, whom, unfortunately for them, do not enjoy much of the public favour.

Pharmaceutical Changes in Paris.—A familiar old landmark in the Parisian world of pharmacy bids fair to be obliterated, or, at least, to change the name by which it has for the last half a century been known to the world. Consequent upon the death of Mr. Swann, which we announced in our columns last November, the Superior College of Pharmacy granted a permit of twelve months' duration for the continuation of the business in the widow's behalf, within which period negotiations for the sale of the same were to be conducted, failing which the pharmacy would have to be closed at the expiration of the appointed time. The sale, however, was happily effected last Friday, and the newcomer, M. Soudaiu, will take formal possession on July 1. He is a Frenchman, but is no stranger to English pharmacy, having about fifteen years ago engaged with the well-known French pharmacist, M. Jozeau, of the Haymarket, London. Having there gained a preliminary knowledge of English, he went a trifle further afield and engaged with Mr. Dawson, chemist, near Fenchurch Street, where he completed his knowledge of the language he had left hearth and home to learn. Since his return to France, however, he appears to have turned to but little account his linguistic attainment, for he bought a cosy little pharmacy at Choumes, in the Seine-et Marne department, and settled down comfortably to French pharmacy pure and simple. Having tired somewhat of a prosy country life, and hearing of Mr. Swann's decease, he opened negotiations at once, and successfully terminated the same on Friday last, for the purchase of the pharmacy. Mr. Borney, an old and highly respected assistant and Mr. Swann's right hand, has bought up the trade marks and rights to manufacture all the specialities, &c., for which the late proprietor was originator or representative, and will continue to pursue his usual course in directing that part of the affairs of the house with which he has always been an essential and inseparable quantity. Little change in the ordinary routine of affairs is anticipated, so that the outer world will not readily become aware of the slight change which is about to be effected.

A Passer-by in the English quarter of Paris would naturally imagine that English pharmacies were conspicuous by their absence, for out of five which exist in this, the main thoroughfare, two are now undergoing a process of transformation and are completely boarded in by hoardings placarded by the inevitable bill posters, advertising some place of amusement or somebody's marvellous tonic wine, etc. The uninitiated would never know that the hole in the boards conducted to an improvised sanctum within, where, despite the fact that chaos reigned supreme and that they were up to their eyes in *débris*, patient assistants still awaited to wield the pestle for such and sundry individuals who ventured to penetrate the gloom within. The pharmacies in question which are in process of transformation are Pharmacie Roberts, 5, Rue de la Paix, and Pharmacie Boissy, 2, Place Vendôme. It is hard to imagine why this, the busiest, part of the season should have been chosen for commencing repairs. Serious loss to business must assuredly result therefrom.

IRISH NEWS.

Under the Merchandise Marks Acts, Frederick Bell, trading as the Ulster Bottling Company, was summoned for selling aerated waters to which a false trade description was applied. The prosecuting solicitor stated that the Belfast manufacturers used some hundreds of thousands of bottles in pursuit of their trade, and had established the Belfast Bottle Exchange, Limited, to which the various traders, defendant included, agreed all the bottles should be sent to be sorted. He had been detected a few months ago selling his lemonade in bottles bearing the embossed name of Cantrell and Cochrane, Ross, Millin, and Rankin, etc., but had repeated the offence. A fine of 10s. and 10s. costs was imposed in each of the six summonscs.

Dr. J. C. McWalter, M.P.S.I., proprietor of Leonard's Medical Halls, Dublin, has been admitted on examination a licentiate in medicine of the Royal College of Physicians in Ireland.

"The Irish Phalophycia" was the title of a paper read last week in Dublin at a meeting of the Royal Irish Academy. The paper dealt with the collection of brown seaweeds from nearly all parts of Ireland since 1891, and referred to some forty species to be added to the seventy kinds already known. The lecturer exhibited specimens of kelp made in Donegal by burning seaweed, and also a specimen obtained from Norway, where the kelp is now so prepared that it is substituted for oiled silk.

The Belfast Board of Guardians having been recommended by a committee to appoint an analyst for drugs at £50 per annum, an amendment that the salary be £30 was proposed. Dr. Stewart said that some of the committee were willing to grant £100. The original proposition was passed, only three voting against it.

The Same Board when drawing up a more extensive list of medicines than that supplied by the L.G.B., was reminded by Dr. M'Donnell that a substitute for cod-liver oil and malt extract could be easily prepared from other medicines by the doctors, so it was not included in the revised list.

The Cork Drug Company has circularised the various pharmacy companies, urging them to bring all their influence to the support of Lord Halsbury's Bill.

Dr. George Johnston Stoney, a distinguished Irish scientist, has been awarded by the Royal Dublin Society the first "Boyle" medal ever struck, in consideration of his works on Boyle and Marriott's law.

Mr. John H. Parker, registered druggist, has opened business on his own account at 54, William Street, Limerick.

At a Meeting Last Week of the Ulster Amateur Photographic Society, Mr. S. K. Kirker delivered an interesting lecture, illustrated by numerous slides, on ancient Irish sanatoriums. The speaker referred to an old-time sweathouse as used in early ages for the cure of rheumatism, and explained that these buildings were made up of large stones covered over with mud and rushes. . Peat fires were lighted within the buildings, which heated the stones to a very high temperature. The floor was then covered with rushes to prevent the body coming into contact with the heated stones. When a patient had entered, the "sweat doctor" closed the door by means of rushes so that the heat within the building might not escape. Profuse perspiration having been induced, the patient was immersed in an adjacent river. The treatment bore a strong resemblance to the present-day Turkish baths.

The Cork Board of Guardians are asking the Local Government Board to appoint examiners to test the attainments of candidates seeking public medical and kindred positions. The Guardians state that they will not entertain the application of any candidate unwilling to undergo such examination.

A Marriage Has Been Arranged, and will shortly take place, between Captain Ernest C. Cochrane, 3rd Connaught Rangers, eldest son of Sir Henry Cochrane, D.L., chemist, managing director of Messrs. Thacker and Hoffe's drug and chemical concern, Dublin, and Ethel, youngest daughter of the late John Henry Davis, and granddaughter of the fifth Baron Carbery.

The Irish Medical Association have agreed to hold their next annual meeting in Cork, instead of in Dublin as heretofore. The departure from the usual course is the subject of mixed comment in medical circles generally.

Mr. W. J. Hardy, of the firm of Davidson and Hardy, 20, Castle Place, Belfast, writes as follows :—"My attention has been called to a paragraph which appeared in your issue of the 6th inst., under the head 'Irish News,' as follows :—'The Ulster Medical Hall (Davidson and Hardy), Belfast, which was purchased a year ago by the Lurgan Estate Co., and fitted up in palatial style with electric light, mural mirrors, etc., is again for sale.' I beg to inform you that there is not a shred of truth in the whole paragraph, nor is there the smallest foundation for the report. Messrs. Davidson and Hardy have no intention, nor have had any, of disposing of their premises known as 'The Ulster Medical Hall,' neither are they in any way connected with the Lurgan or Lagan Estate Co. as reported." The Editor deeply regrets that the information furnished to him should have been incorrect, and has written to the correspondent who furnished it, asking for an explanation. On receipt of his reply, Mr. Hardy will be communicated with in due course.

SCOTTISH NEWS.

The Brechin Vitriol-throwing Case.—At the High Court of Justiciary, Edinburgh, on Friday, May 12, before the Lord Justice Clerk, John Robertson, 25, Montrose Street, Brechin, came up for sentence. The original charge bore that the prisoner did, on April 14 or 15, in his house at Brechin, throw at his wife a quantity of sulphuric acid, with intent to murder, maim, disfigure, or do her grievous bodily harm. This indictment was brought under Act X., George IV., Cap. 38, Sect. 3, which made it a capital offence. Ultimately, however, it was restricted to a common law offence by deleting the words "to murder, maim, etc."—Mr. James Thomson, who appeared for the prisoner, said he was of a jealous temperament and had words with his wife about a man. After the quarrel he went out and bought a gill of whisky, which he drank right off. He then went to a chemist's shop and got the bottle filled with sulphuric acid, with which he committed the deed. He asked his Lordship to temper justice with mercy.—The Lord Justice Clerk, in passing sentence, said the crime was a very serious one. It was one of the few crimes now left in the Statute Book which caused prisoner to be liable to be sentenced to death. The circumstances were not favourable to the prisoner. In the first place, the person he assaulted was his wife; in the second place, for a man to buy sulphuric acid for the purpose he admitted he had was a serious offence; and lastly, the effects were serious, and the sight of one eye was lost permanently. Imprisonment only had been inflicted for offences of this kind in recent cases, but the injuries were so serious that he could not do less in this case than pass sentence of five years' penal servitude.

Edinburgh District Chemists' Trade Association.—The annual excursion held in connection with this Association will take place on Wednesday, June 14. A special train will convey the party to Perth, from whence they will drive in brakes to Birnam by way of Bankfoot (14 miles). Five hours will be spent here in viewing the beautiful sights of this historic district, and dinner and tea will be served in the Baronial Hall of the Hotel. The return drive to Perth will be made by way of Dunkeld, Caputh Bridge, and Stanley. Tickets (11s 6d each, to include all charges) may be had from the Hon. Secretary, Mr. C. F. Henry, 1, Brandon Terrace, Edinburgh, and all pharmacists who may find it convenient to be present are cordially invited to join the excursion.

Interesting to Aerated Water Manufacturers.—Sheriff Fyfe gave judgment in Glasgow Sheriff Court on Monday, 15th inst., in a complaint recently made by Charles Cook Thomson, 99, Grant Street, Glasgow, inspector to the Glasgow and West of Scotland Aerated Water Manufacturers' Defence Association (Limited), and duly authorised to prosecute by the Council of said Association, to sue against a number of mineral water manufacturers, under the Merchandise Marks Act, for selling bottles of waters to which were attached the name or trade mark of certain members of the Association. Objection was taken to the complaint by respondents' agents on the ground that the prosecutor had no title to sue.—His Lordship, in his interlocutor, said that he did not think the question fell to be decided under company law; if it did, the instance was obviously bad, for an inspector was not under the Companies Acts clothed with any title to sue, and the complaint should have been in the name of the company itself or its secretary. The real question raised was, had the limited company involved in the cases such an interest as entitled it to bring such a complaint? The Merchandise Marks Act had two purposes—(1) to prevent members of the general public being misled; and (2) to prevent traders being injured. He thought the company in this case was neither a deceived member of the public nor an injured trader. If it had any *locus standi* at all as a prosecutor, it was only as the representative of the injured trader. If it was competent for those traders to relieve themselves of responsibility and to hand over their prosecuting rights to this company by merely joining its membership, then it was competent for any person who had by law a title to prosecute not to prosecute in his own name, but to pass over his right to a mandatory. His Lordship did not think this was consistent either with criminal law and practice in Scotland or with the recognised rules of fair warfare, which assumed the person making the cause of quarrel should come out into the open and himself take the responsibility of meeting his opponent. The right of an injured party to prosecute for crime was not transferable, and he thought the case should have been brought at the instance of the trader whose trade mark was alleged to have been used by respondents. He accordingly sustained the objection of no title to sue, and dismissed the complaint, awarding the respondents a guinea each of expenses.

SCHOOL OF PHARMACY NEWS.

Cricket.—The Pharmaceutical Cricket Club opened its season on Saturday last, when the team journeyed to Nunhead, to try conclusions with a team representing the South London School of Pharmacy under the captaincy of Mr. Armstrong. The "Square" captain lost the toss, and his team were sent in to bat. The bowling of Muter's captain seemed rather too much for the Pharmaceutical, whose wickets fell rather rapidly, the first four wickets falling for about as many runs; but on the appearance of Palmer, who is no doubt one of the Square's chief supports—and more will be heard of him before long—matters seemed to improve, and, with Garsed as partner, a short stand was made, raising the score to 25, when Palmer was bowled. The remainder of the eleven offered very little resistance, both Wild and Tibbitt failing to score, and the innings closed for 34—not a very grand total. On glancing at such a small total, it seemed inevitable that we were in for a crushing defeat, but owing to the superb bowling of Padwick—who bowled uphill and against the wind the whole afternoon, securing four of our opponents' best wickets, including their captain, from whose bat we had most to fear—they only obtained a narrow majority of 15 runs. Padwick's analysis read: 4 wickets, 12 runs, 7 maidens, and as three of their men were run out, it speaks well for the Square's bowling and fielding.

As There Was Yet an Hour Left for Play, the "Square" men once more took up the bat, and matters were considerably enlivened by Tibbitt and Wild, who on coming together hit about in fine style, but on being separated there seemed nobody able to keep the wicket up for our captain, who was not out 15, out of a total of 48. No time was left for a second innings for Muter's, so the result was declared on the first innings. Team as follows: Godolphin, Garsed, Wild, Palmer, Padwick, Tibbitt (captain), Sharpley, Gray, A. Tibbitt, Lloyd, and A. N. Other.

It Is Pleasing to Note that in the recent open Council Prize Examination the first three places on the list were secured by students of the School of Pharmacy, and as this is so often the case it might be thought there was no opposition from outside, but, of course, that is not so. It might also be worth mentioning that, once more in the annals of the School, the Pereira medallist is a Bell Scholar of the Society.

ENGLISH NEWS.

The Employment of Unqualified Dispensers.—The resolution which Mr. Glyn-Jones had notified his intention of moving at the annual meeting of the Pharmaceutical Society, on Wednesday last, was worded as follows:—

> That the members of the Pharmaceutical Society, assembled in Annual Meeting, respectfully express the opinion that the reply sent by the Executive of the General Medical Council to the Privy Council on the question of dispensing by unqualified persons is illogical and disastrous, as it undermines the principle which requires a legal qualification from those who undertake responsible duties involving the public safety, and that the General Medical Council be respectfully invited to co-operate with the Pharmaceutical Society to secure that medicines shall only be dispensed by those holding a medical or pharmaceutical qualification.

The President, however, ruled that this was out of order (see p. 461), and Mr. Glyn-Jones then suggested the following:—

> That the members of the Pharmaceutical Society assembled in Annual Meeting, respectfully express the opinion that the reply given by the Privy Council in the House of Commons on the subject of unqualified dispensers is unsatisfactory, and that the Privy Council be asked to await representations from this Society before coming to a decision on the matter, and that the Pharmaceutical Council be asked to invite the co-operation of the General Medical Council to secure that medicines shall only be dispensed by those holding a medical or pharmaceutical qualification.

The President ruled that this also was out of order. Mr. Glyn-Jones, therefore, submitted the following amended form, which he was permitted to move:—

> That the Council of the Pharmaceutical Society be respectfully requested to invite the co-operation of the General Medical Council to secure that medicine shall only be dispensed by those holding a medical or pharmaceutical qualification.

Mr. Butt moved, as an amendment to Mr. Glyn-Jones' proposition,

> That the whole question of the dispensing of medicines by unqualified persons be referred to the Council.

This amendment was carried, and subsequently adopted as a substantive motion.

Literary Intelligence.—Messrs. J. and A. Churchill, 7, Great Marlborough Street, London, intimate that the new work of Professor H. G. Greenish, F.I.C., F.L.S., 'An Introduction to the Study of Materia Medica,' will be ready on May 23, price 15s. The book is a short account of the more important crude drugs of vegetable and animal origin, designed for students of pharmacy and medicine, and has 213 illustrations. Another work, published by the same firm, now ready, is the fourth edition of Hale White's 'Materia Medica,' which, like the third edition issued in 1898, is based on the British Pharmacopœia of that year. It has been thoroughly revised, eighteen pages of new matter having been added, several parts re-written, and many substances not in the Pharmacopœia, but frequently prescribed, having been included. The price is 7s. 6d.

Banks and Receipt Stamps.—The Lord Chief Justice delivered judgment on Wednesday, May 17, in the case of the Attorney-General *v.* the Carlton Bank, Limited. The Attorney-General claimed to recover forty-eight penalties of £10 each from the defendant bank for having, in forty-eight instances, neglected to affix a stamp to what was contended to be a receipt for an amount over £2. The defendants had employed a solicitor to collect small debts at a fixed salary. When he recovered the money he handed it over to the defendants, and their cashier or secretary initialled the amount in a book, which was then handed back. The Crown contended that these entries were receipts, but the defendants argued that they were merely made by way of check between the defendants and the officials of the bank. The Lord Chief Justice, in giving judgment, said the first question he had to decide was whether the entries were receipts, and that turned upon the true construction of the Statute. The Statute provided that the word "receipt" included any writing whereby any money amounting to £2 and upwards was acknowledged or expressed to have been received or deposited or paid, and whether the same was or was not signed in the name of any person. Applying those words to the facts of the case, it seemed to him that these entries were intended to be, and were actually, acknowledgements by an officer of the bank, who had authority to receive, and did receive, these sums from the solicitor of the bank; the entries constituted *pro tanto* an acquittance of the solicitor. He felt obliged to come to the conclusion that the entries were receipts within the meaning of the Act. The next point was, Was the bank liable for the acts of its servants? There was nothing which prevented him drawing the inference that the officers of the bank acted with the authority of the bank. He thought the bank was a party to the entries. There would be, therefore, judgment for the Crown for £480, but he did not think the Inland Revenue authorities should be advised to press for the whole of the penalties, as those acting for the bank might well suppose that they were violating no provision of the law by acting as they did. Judgment was given for the Crown, and a stay of execution granted with a view to an appeal.

Tunbridge Wells and District Chemists' Association.—A fully representative gathering of members took place on May 4, when there were present Messrs. Booth, Dunkley, Gower, Gough, Green, Hobbs, Macrae, Ogle, and Wardley. A report of the Association's proceedings during the past twelve months, read by the Secretary, plainly demonstrated the value of united effort in the district. Mr. Dunkley, the President, then read a capital paper on "The Business of a Chemist now as Compared with a Quarter of a Century Ago in Social and Commercial Standing." Most of the members present took part in the discussion which followed. In debating the Lord Chancellor's Bill concerning companies, the Association unamimously passed a resolution approving the suggestion of the Society to postpone active opposition till an opportunity for effective combined effort should arise.

Variation in Charges for Drugs.—There are, we know, enormous variations in the prices charged by different chemists for the same article; but one would hardly expect to find similar variations in the tender of a single firm for the supply of drugs to two public institutions under joint management. It appears that this is the curious experience of the West Derby Guardians in regard to the contracts for the Mile Road and Walton Poor Law infirmaries. In the tenders the drugs are priced separately for each infirmary, and a comparison of the figures reveals some amazing discrepancies. In instance after instance a firm offers to supply a drug to one infirmary at a half, a quarter, or even as little as a tenth of the price they ask for supplying this precise drug to the other infirmary. Nor are the charges uniformly higher at one particular establishment; the low, almost nominal prices are quoted sometimes for Mill Road and at other times for Walton. The Guardians have appointed a committee to look into the matter, and it will be interesting to learn upon what information and with what object the figures have been manipulated in this mysterious manner.—*Truth.*

The Origin of a Large Firm—Presiding at the general meeting of the shareholders of Messrs. Southall, Bros. and Barclay, on May 4, Mr. Thomas Barclay gave an account of the origin and development of the firm. It was founded, he said, in 1820, by the late Thomas Southall, who had previously been engaged as an assistant to John Bell, of Oxford Street, London. He was so disheartened at the end of the first year's trade that he took his keys to the landlord, with the intention of giving up possession, but the landlord urged him to continue for another year, telling him that if he was not satisfied he would forgive him his rent. The faith of the landlord was well justified by the success which followed, for Thomas Southall found it necessary not long afterwards to get his brother William to join him, and they went into partnership, the name of the firm being T. & W. Southall. The two brothers were not only capable business men, but successful pioneers in pharmaceutical research, and by the interest they took in questions affecting the position of pharmacists, did much to help forward the incorporation of the Pharmaceutical Society in 1843. In the course of time William Southall, jun., a son of William Southall, was taken into partnership, and the name of the firm was then changed to T., W., & W. Southall. William Southall, jun., was known to many now living in Birmingham. He took an active part in the business, and made the science of botany his special study. He also was one of the founders of the Pharmaceutical Society, a Fellow of the Linnean Society, and a member of the Board of Examiners. During the past forty years the business had developed in many ways. The sales during the past year were about fifteen times larger than they were in the year 1861, when Mr. Barclay entered the business. During the same period large extensions of premises had been necessary to accommodate the increasing business, and over £40,000 had been expended in buildings, plant, and fixtures. Recently, it was found, after grave consideration, that the natural

development of the business required a large expenditure of capital for the building of new factories and their equipment with machinery and plant. Under those circumstances, Mr. Southall and Mr. Barclay felt that the time had come when, for family reasons, they should convert the business into a limited liability company, otherwise the new capital required for the extensions, when added to that which was already employed in the concern, would be so heavy as to prevent the younger members of the firm being able to provide it, when the death of one or both of the partners rendered that necessary, without seriously crippling the business. The formation of the company and the issue of preference shares had entirely removed that difficulty. All the ordinary shares in the Company were held by the directors, and the business in every department was under their direct personal supervision. Continuing, Mr. Barclay showed, in an interesting address, how very different the business of a pharmacist now is from what it was in the olden time. The directors' report was afterwards adopted and the dividends approved (see *ante*, p. 410*d*). On the motion of the Chairman, seconded by Mr. John Barclay, Mr. Gilbert Southall was re-elected a director.

London Matriculation Examination.—At a general meeting of Convocation of the University of London, held on May 9 in the Theatre of the University, Burlington Gardens, Dr. H. F. Morley moved the adoption of a new scheme of subjects for the Matriculation examination, which had already been adopted by the meeting of delegates from the Boards of Studies in the Faculty of Arts. This included two papers in Latin, two in English, two in mathematics, one in general elementary science, and any two of the five languages—Greek, French, German, Sanskrit and Arabic—or any one of those languages and one of the following five Sciences: —Elementary Mechanics, Elementary Chemistry, Elementary Sound, Heat, and Light, Elementary Magnetism and Electricity, Elementary Botany. Several amendments were proposed and rejected, with the exception of an amendment proposed by Miss Adamson, and seconded by Professor Sully, which proposed to omit a paper or papers in General Elementary Science. An attempt was made to refer the question back to the Standing Committee, but it was defeated, and the motion, as amended, was carried.

Soda-Water Syphon Case.—At Blackburn County Court, on May 8, Messrs. J. H. Cuff, mineral water manufacturers, of Manchester, sued Joseph Sidebottom, chemist and druggist, Church, Accrington, for £6, in respect of the detention of, and damage to, soda-water syphons.—The case for the plaintiffs was that the defendant had in his possession three dozen syphons bearing on the glass the plaintiffs' name, partially erased, and the name removed from the metal tops. Messrs. Cuff claimed that those syphons should be returned to them, and further, asked for damages for the removal of their name and trade mark therefrom.—For the defence it was stated that the defendant's business originally belonged to a Mr. Cooper, who owned a large number of syphons. A Mr. Peate succeeded him, and traded with Messrs. Cuff, forwarding his own syphons to be filled, and in most cases receiving them back, but sometimes bottles and syphons belonging to the plaintiffs were returned. Defendant then bought the business and stock, including the syphons, and instead of sending out other mineral waters in Cuff's syphons, which had now been in his possession for five years, he straightforwardly erased the trade mark and name of the firm with whom he did not deal for that particular article. It was maintained that there had been an exchange in syphons of equal value, and the property in those particular syphons had passed from the plaintiffs to the defendant. —Judgment was reserved.

A Monthly Discount Case.—On May 10, at the Clerkenwell County Court, before His Honour Judge Edge, Q.C., Messrs. Geraut & Co., Farringdon Road, E.C., sued the Chemists' Aërated and Mineral Waters Association (Ltd.), Pembroke Street, Caledonian Road, N., to recover £26 8s. 11d., balance of account of goods.—The order in question was a contract for 10,000 mineral-water syphons, which were to be delivered—the February 8, 1898, contract—by May 31, the terms being "2½ per cent. off monthly account." The amount in dispute was £23 15s. 4d. discount deducted from accounts overdue.—The defendants stated that no proper accounts and invoices had been received, hence payments were not made as quickly as they otherwise would have been. —After hearing evidence as to the custom of the trade with regard to discounts off monthly accounts, His Honour, in giving judgment, said there had been no real substantial evidence that would establish any custom, and he had to construe the contract as it appeared in writing. It was a contract by which the defendants ordered from the plaintiffs 10,000 syphons, to be delivered at a certain price less 2½ per cent. monthly account upon written orders. As the defendants required they were to give notice to the plaintiffs to deliver to the defendants, knowing the quantities they required and the price they agreed to pay for them. They also knew the quantities that were delivered to them. They knew the price and what they had received, and they could ascertain what was due. He was not satisfied that the defendants did not get the accounts in question, and he gave a verdict for the plaintiffs for the amount claimed. Judgment was entered accordingly.

The Oxygen Treatment.—At the annual meeting of the Oxygen Home, which was held at the hospital, 2, Fitzroy Square, Princess Louise (Marchioness of Lorne), patron of the home, was present, and Mr. Burdett-Coutts, M.P., who presided, said that as far as the proved importance of the oxygen treatment was concerned there were the definite and unmistakable facts of the report to go upon. Of 230 cases already treated in the home 172 had been cured, twenty-six were under treatment and progressing favourably, and of those cured the average duration of the disease before entering the house amounted to seven years for each patient, whilst the average duration of the oxygen treatment was three months. These facts bore eloquent testimony, and as a new method of surgical treatment the oxygen treatment had passed the important landmark of satisfactory scientific tests. Earnest appeal was made for £1000 needed to clear off the debt remaining from the establishment of the home.

Royal Institution.—The libraries of the Royal Institution contained many interesting exhibits on Friday evening, last week. Messrs. Müller, High Holborn, were showing new apparatus of various kinds, including copper stills, water baths, and drying ovens. Two models of a fire engine and a Bramah press attracted considerable attention. The Crystal Electric Lamp and Rose & Bird, Limited, exhibited electric lamps of fanciful designs. There was a big show of electrical apparatus from the Stewart Electrical Syndicate, Limited, foremost of which is the Stewart Lilliputian Arc Lamp, which is claimed to be particularly reliable from the absence of a clutch, thereby doing away with the possibility of over-feed or under-feed, sticking or burning of contacts. Some coloured photographs were on view, printed by means of the Acrograph Engraving Machine. By far the most important exhibit was the Michelson Spectroscope, lately made by Hilger. The main point in this instrument is the series of glass plates arranged in eschelon, *i.e.*, overlapping in steps, each succeeding plate being longer by about half a centimetre. By this device greater dispersion is gained. A tube of helium was shown by Mr. Hilger, in which the characteristic helium line was distinctly seen to be a double line.

Cricket.—At Nunhead, on May 13, the match between Muter's C.C. and the Pharmaceutical C.C. resulted in a win for Muter's by fifteen runs.

Cricket.—In a match played at West Green on May 13, between Allenbury's C.C. and Hewlett's C.C., the scoring was as follows:—For Allenbury's: F. C. Hanbury, 5; S. Brown, 1; E. A. Collins, 15; W. Goldman, 7; W. Little, 0; F. Price-White, 1; S. G. R. Coles, 11; C. P. Petty, not out, 15; W. Gunn, 0; W. Maurice Jones, 4; C. Cooke, jun., run out, 0; Extras, 7; Total, 66. For Hewlett's: H. Gray, 14; Upton, sen., 1; Stirling, 5; H. Freairmeyer, 0; Wincles, run out, 1; Upton, jun., not out, 13; Williams, 0; Bale, 5; Thurges, 0; Hemingway, run out, 1; Dickinson, 0; Extras, 2; Total, 42.

The London College of Chemistry, Pharmacy, and Botany is the name of a new establishment, the principal of which is Mr. Henry Wootton, B.Sc. (Lond.), formerly lecturer on chemistry, etc., at the Westminster College of Chemistry. The address is 323, Clapham Road, S.W., and according to an advance prospectus, the college will open for the reception of students on Wednesday, August 2, next. Its object is to provide thorough and practical instruction in all branches of science, especially for students preparing for pharmaceutical, medical, and university examinations.

Invoices as Warranties is a cry that should appeal to all retail dealers in food and drugs, and it is interesting, therefore, to

note that Mr. R. G. Webster has successfully moved the insertion of words to that effect in the Sale of Food and Drugs Bill now being considered by the Grand Committee of the House of Commons on Trade. In moving that for the purpose of Section 25 of the Sale of Food and Drugs Act, 1875, an invoice should be deemed to be a warranty without the addition of express words of guarantee, Mr. Webster stated that according to that section the defendant was to be discharged if he proved that he bought the article in the same state as sold and with a warranty, and he explained that his amendment was based on the recommendation of the Select Committee on the Adulteration of Food Products. He further explained that under the Margarine Act an invoice was accepted as a warranty, and in the experience of that Act, extending to twelve years, it had not been found that there was collusion between the wholesale dealer and the retailer. The Select Committee thought that in many cases it would be very difficult for a retailer to get an absolute warranty from the wholesale dealer. There was sometimes considerable reluctance on the part of the retailer to press for a formal warranty, and that was especially the case when the retailer was under some obligation to the wholesale dealer. Another point was that it was not to be expected that the retailer could have all the articles he sold analysed; analysis was an expensive business. Mr. Walter Long, President of the Board of Agriculture, thought that if the proposed amendment were adopted it would increase the difficulty of discovering offenders, and of successfully prosecuting them when they were found. It might, he said, be an act of justice to make an invoice a warranty—it might be a legitimate thing to do in the interests of the retailer as compared with the wholesale dealer—but he thought the Committee must realise that in doing it they would be to a certain extent weakening the procedure under which they hoped to discover offenders, and to successfully prosecute them. In the result, however, the amendment was carried.

Trade Notes.

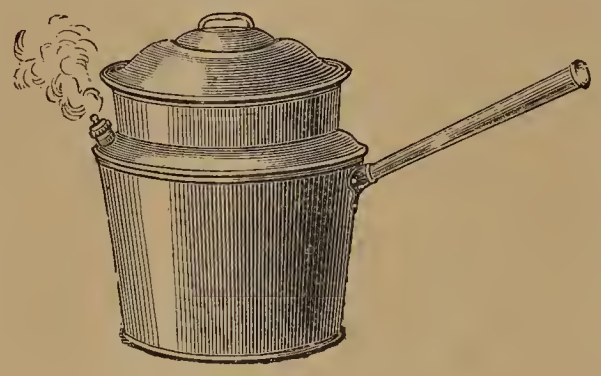
Messrs. Burroughs, Wellcome and Co. send samples of a new series of "Tabloid" mineral water salts which form pleasant effervescent draughts, one in a given quantity of water being equal in strength to the same volume of Carlsbad, Kissingen, Vichy, or natural seltzer water. They are far more compact than ordinary salts or bottled waters, and render possible a continuous course of mineral water treatment in all lands and under all circumstances. The high standard of purity of constituents and accuracy of dosage characteristic of "Tabloid" drugs is maintained in these compressed mineral water salts, which are supplied in tubes containing twenty-five each.

Messrs. Thomas Christy and Co., 25, Lime Street, London, E.C., send specimens of collapsible tubes which the firm is now supplying. They may be had in all sizes, plain, enamelled, or coloured either dull or transparent. A special feature is the printing on the ordinary plain tubes. The effect is very good, especially the design or lettering in black, which shows up extremely well on the plain metal. The tubes are all guaranteed pure tin. Special colours are supplied to order, and the following is a list of those kept in stock:—Transparent colours: red, green, blue, bluish-green, bronze, heliotrope; dull colours: mauve, green, blue, silver, bronze. The white and coloured enamelling is unsurpassed, the transparent coloured tubes with the broad band of white enamel for the wording being very effective. For printing to any design, black, blue, or other coloured printing is usually adopted on white enamel tubes, and silver or gold on coloured enamel or on dull or transparent coloured tubes.

Essential Oils and Fruit Essences.—Mr. William Poppelreuter, 54, Portland Street, Manchester, sends an extract from Heinrich Haensel's quarterly report on essential oils and fruit essences, dated April, 1899. It gives much useful information respecting Haensel's well-known terpeneless oils, together with the current list prices. Terpeneless lemon oil, it is pointed out, rotates the plane of polarised light to the left, the variations between $-7°$ and $-8°$ being very slight. Recently, however, competitive products have appeared in the market exhibiting a rotation of $+5°\,20$ to $+7°\,97$, which are therefore evidently not terpeneless lemon oils, and if used must furnish very unsatisfactory preparations. In regard to fruit ethers and fruit essences, recipes for their use may be had on request.

Merck's Annual Report for 1898.—E. Merck, of Darmstadt and 16, Jewry Street, London, E.C., sends a copy of his annual report on the year 1898, which is now ready for distribution. Free copies of this most useful publication may be obtained by chemists on application at the London address.

The Duplex Boilerette.—The Duplex boilerette is manufactured at the Duplex Works, North Newington, Banbury, and consists of one pan fixed within another, there being no escape for the steam from the outer vessel but by way of a small brass safety valve, the water being thus caused to boil under a slight pressure, some 2 lbs. to the square inch, before escaping in a small steam jet. The result is that very little water is required in the outer vessel, and this little takes several hours to boil away, so that there is no need for replenishment during cooking operations. A special feature is that the water or juices in the inner vessel are brought to boiling point, a thing not obtainable in the old system of double pan cooking; and as there is no danger of burning, no attention is required, stirring being unnecessary. It is extremely useful for household purposes, also for the use of chemists in making extracts, and for all purposes for which a water bath is requisite, the specimen submitted for examination doing its work satisfactorily in every respect. In addition to the small size illustrated, it is made in various others, up to eight gallons. As the heat is retained and the contents are subjected to great side as well as bottom heat, foods, etc., are cooked much quicker and far better than in an ordinary saucepan. Particulars as to price, etc., may be obtained on application to the works.



Messrs. Johnsen and Jörgensen, 4, 5, and 6, Bury Court, St. Mary Axe, E.C., send a specimen of their new registered poison shop bottle, which will be supplied in all sizes. The bottle, which was referred to a few weeks ago (see *ante*, 346*d*), is square and of the regulation blue colour, the distinctive feature being that each side is fluted with curves, which cover the whole surface horizontally, with the exception of a space for the label.

Visual Optics.—The Anglo-American Optical Co., 94, Hatton Garden, London, E.C., intimates that it is prepared to give instruction, either personally or by correspondence, in preparation for the S.M.C. and B.O.A. examinations, intending students being invited to join at once. Syllabus, with full particulars, may be had post free on application. The company is also the sole agent for 'The Keystone' booklet and 'The Eye and Its Cure,' and has the sale of 'The Optician's Manual,' which is claimed to be the best work on practical optics for the optical student and practising optician.

Special Poison Labels.—The Patent Caution Label Co., Upper Hagley Road, Birmingham, sends specimens of plain white bottles which are made to comply with the requirements of the recent poison regulations by means of a patent roughened caution label. The labels are made in various sizes for the dispensing counter and for "shop rounds" and jars. These labels have already been mentioned in our pages (see *ante*, p. 301*e*), but the company is now offering a new set printed on orange paper for the dispensary.

Mr. Fred. H. Barker, mechanical dentist to the profession, Grimsby, sends his special price list for vulcanite work, giving the charges for dental alloy bands or clasps, suction chambers, vulcanite repairs, adding or re-making teeth, plate repairs, etc. In consequence of the variation in the weights of plates in metal work, and the constant fluctuation in the price of metals, the exact cost is not given, but the prices mentioned are said to be a fair criterion *plus* the cost of metal, and a small charge for striking up. Barker's Premier Amalgam for stopping is a preparation which is claimed to be a distinct advance upon any preparation hitherto produced.

Urosine.—Messrs. Widenmann, Broicher and Co., 33, Lime St. London, E.C., send a sample of a new drug, "Urosine," prepared by Messrs. Zimmer and Co., at the instance of Dr. J. Weiss, of Bale, who, in a treatise published in 'Berliner Kl. Wochenschrift,' 1899, No. 14, under the title "A New Method of Treatment of the Uric Acid Diathesis," pointed out that quinic acid possesses the property of considerably decreasing the formation of uric acid in the organism, and that it is consequently apt to serve as a remedy against gout and all affections based on the uric acid diathesis. The markedly bitter taste of quinic acid renders it advisable to administer it in combination with a base, and as lithia appeared to be the most suitable base, on account of its diuretic properties, that has been chosen, and urosine, a combination of quinic acid and lithia as a base, is now manufactured. The advantages claimed for urosine over remedies hitherto resorted to in cases of gout, etc., such as alkaline waters, the usual lithia preparations, piperazine, etc., which are meant to serve only as a solvent of uric acid already formed, are that, owing to the presence of quinic acid, it is able to prevent the formation of uric acid, or, at least, limit it to a very great extent, while it also has the advantage of being perfectly innocuous. The drug is put up in tablets containing 7·5 grains, which have a pleasant taste. Effervescent urosine is also supplied, and urosine water, containing 45 grains of urosine in 360 C.c. of pure carbonated water. Free samples and particulars can be obtained from Messrs. Widenmann, Broicher and Co., as above.

Hydrochloride of Heroin.—The Bayer Company, Limited, 19, St. Dunstan's Hill, E.C., send a sample of a new preparation introduced by the company for the use of medical men who desire a neutral heroin salt, easily soluble in water, and suitable for subcutaneous injection. This desire has been complied with by the introduction of the hydrochloric acid salt of heroin, under the name of "hydrochloride of heroin." It is a white crystalline powder, melting point 230° to 231°; easily soluble in water (1:1·7), and also easily soluble in alcohol. The aqueous solution is of neutral reaction and gives no reaction with perchloride of iron. The dose for subcutaneous injection is the same as that of heroin itself, viz., 1/12th to 1/6th of a grain. It is advisable, however, in the case of a first injection to reduce these doses by one half, viz., 1/24th to 1/12th of a grain. It is also put up in tablet form by Messrs. Oppenheimer, Son and Co., 179, Queen Victoria Street, E.C., this form offering a very convenient method for administering the drug.

Squire's Newest Lines.—Messrs. Squire and Sons, 413, Oxford Street, W., send a new list of specialties and specimens of three of their newest lines, viz., Squire's chemical food lozenges, an aseptic sponges and antiseptic vaginal capsules.—The lozenges are just being put on the market, and are a new and portable means of administering chemical food, each lozenge representing an average dose.—The vaginal capsules are prepared with carbolised, specially soluble gelatin for the administration of local remedies in vaginal and uterine diseases. A fine and very soluble gelatin envelope surrounds an absorbent wool tampon, which can be saturated with such medicaments as glycerin, ichthyol, iodoform, etc. The tampon has a fine thread attached, to facilitate removal after use.—The aseptic sponge is composed of cotton fibre, subjected to very great pressure, and compressed to a disc 1/12th inch in thickness. It is said to-swell to fifteen times its size, and will absorb twelve times its weight of fluid. These sponges are stated to prove more efficient than cotton or gauze in tamponing the anterior or posterior nares, as they do not require to be so frequently re-inserted. In case of epistaxis the disc can be cut in semi-circular form and introduced into the nostril convexity upwards, a string being fastened to the sponge to assist its removal. According to the list—which is a very dainty affair, tied up with blue ribbon.—Squire's ferro-manganese peptonate contains in each ounce $1\frac{3}{4}$ grains metallic iron, and $\frac{3}{4}$ grains metallic manganese, in the form of neutral peptonised albuminates, the dose being one teaspoonful. In Squire's syrup of the glycerophosphates, the phosphates are stated to be in combination with glycerin, and are soluble in water. Dose: One to two teaspoonfuls.

Blackening Aluminium.—The aluminium article is well polished with finest emery powder, then rubbed over with olive oil and heated over a spirit lamp, frequently smearing with more oil. When the oil has gradually blackened, heating is discontinued and the article polished with a woollen rag.—*Pharm. Centralh.*, 40, 190.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

May 18, 1899.

Business has again been quiet during past week, possibly partly in consequence of the near approach of the Whitsuntide holidays. The only change to report is a further slight relapse in value of Quinine and a considerable advance in value of Lemon Juice, and consequently of Citric Acid. The other articles usually quoted in these columns remain practically unchanged. with the exeeption of Sulphate of Ammonia, which is firm and again higher in price. Bromides and Iodides are in steady demand at unchanged prices. Potash Permanganate rather firmer, which may also be said of Cod Liver Oil. Glycerin weak for the refined article. Acid Tartaric, Cream of Tartar, Borax, and Acid Boracic quiet. Quicksilver and Mercurials firm. The following are prices actually ruling for articles of principal interest:—

Acetanilide.—Market is very weak, the makers competing eagerly one against the other for the limited number of orders which are passing; 11d. per lb. for large quantities, up to 1s. 2d. per lb. for smaller lots is, however, the lowest price at which a good and reliable article can be purchased.

Acid Boracic—Quiet at 26s. per cwt. for *crystals*, and 28s. per cwt. for *powder*.

Acid Carbolic.—Quiet but steady at 6⅝d. to 6¾d. per lb. for 35—36° *ice crystal* in large drums; 7¼d. to 7½d. for 39—40° *ice crystal*, and 8¼d. to 8½d. per lb. for the 39—40° B.P. quality, in *detached crystals*; *crude* 60° F., 2s. 1½d. per gallon; 75°F., 2s. 9d. per gallon; *Liquid*, 95—98 per cent. of pale straw colour, 1s. 2d. 1s. 3d. per gallon in 40 gallon casks.

Acid Citric.—There has been a sudden jump in price of this article, brought about, it is stated, by the fact of *Lemon juice* being in short supply, and also by the limited supplies being concentrated in the hands of a few holders. The makers of *Citric acid* also appear to be short of raw material, and will only sell in limited quantity, one maker declining to sell at all. 1s. 5d. to 1s. 6d. per lb. has been paid for *acid* and £20 for *juice*, while the possibility, if not probability, of even considerably higher prices prevailing for *citric* in the near future is being freely discussed.

Acid Tartaric—Is quiet but steady at 1s. 1d. per lb., free delivered, for *English*, and 1s. per lb. *c.i.f.* for *foreign*.

Ammonia Compounds.—*Bromide*: 2s. 2d. per lb. *Carbonate*: 3d. to 4d. per lb., according to packing. *Muriate*: Commercial free from metals 25s. to 27s. 6d. per cwt., chemically pure 30s. to 32s. 6d. per cwt. *Sal ammoniac*: Sublimed firsts 35s., seconds 33s. per cwt., crushed for batteries 2s. per cwt. more. *Sulphate*: Very firm at a further advance. Grey prompt 24 per cent. London £12 10s. to £12 12s. 6d. per ton, Hull prompt £12 7s. 6d. paid, May-December £12 2s. 6d., July-December £12, Beckton not offering, Beckton terms £12 7s. 6d. per ton. *Sulphocyanide*: 1s. 1d. to 1s. 2d. per lb.

Antimony—*Regulus* is steady at £39 per ton, while *crude Japan* (*Black sulphide*) is firm at £24 10s. per too landed terms.

Antipyrine (Knorr) and Phenazone—Are both in fair demand at unchanged prices, the low prices ruling having caused the competition amongst the makers of the last-named cheaper article to become less keen, the makers of *Antipyrine Knorr* have matters now almost entirely in their own hands also as regards their *Star* brand of *Phenazone*.

Ashes.—*Potashes*, 24s. per cwt. *Pearlash*, 32s.

ATROPINE.—Makers are firm at 15s. 6d. for the *Sulphate B.P.* and 17s. 10d. per oz. for the *pure alkaloid.*

BISMUTH—Is unchanged at 5s. per lb. for the commercial quality of the *metal*, 5s. 1d. for the *Subnitrate*, and 5s. 8d. per lb. for the *Carbonate.*

BLEACHING POWDER (CHLORIDE OF LIME).—English is quoted £6 per ton on the spot.

BORAX—Unchanged, and rather quiet at 16s. 3d. per cwt. for *crystals*, and 16s. 9d. per cwt. for *powder.*

BROMINE AND BROMIDES—Are in fair demand at unchanged prices, viz., *Bromine*, 2s. 2d. per lb. in case lots (60 lbs.); *Potassii Bromid.*, 1s. 10½d. per lb.; *Ammon. Bromid.*, 2s. 2d. per lb., and *Sodii Bromid.*, 2s. 1½d. per lb.

CAMPHOR.—The market for *crude* remains quiet and unchanged. On Friday last English makers of *refined* decided to follow the late advance on part of the German refiners to extent of ½d. per lb., making price of *bells* and *flowers* 1s. 9d. per lb., tablets being dearer in proportion.

CASTOR OIL—Is flat, Belgian first pressing spot £25 per ton, second pressing, £22 10s., ex wharf. Hull manufactured, £24 10s. to £25 per ton, in barrels; 2¼d. to 2$\frac{5}{16}$d. per lb. in cases, ex wharf, London, for prompt delivery. London pressed, 24s. 6d. per cwt. in barrels. French, 25s. per cwt.

CINCHONA BARK.—The shipments of *Bark* from Java for first half of May are reported as being only 225,400 Amsterdam lbs., but doubts are thrown on the correctness of these figures, which had been previously reported as being considerably larger.

CLOVES.—Privately *Zanzibar* quiet but steady, business done comprising March-May delivery at 3⅜d.; April-June, 3⅜d.; and October-December at 3$\frac{9}{32}$d. At auction 95 bales *Zanzibar* bought in. Of 34 cases *Penang* only 2 cases sold; fine bright picked at 1s.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*: Commercial 10d. per gallon; pure, 1s. 3d. per lb. *Benzole*: 50 per cent., 8d. per gallon, 90 per cent. 7½d. per gallon. *Creosote* 3½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3½d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 4d. per gallon; 90 per cent., at 160° C., 1s.; 90 per cent., 190° C, 1s. 2d. per gallon. *Anthracene*: A, 3½d. per unit, B, 2¾d. per unit. *Pitch*, 28s. 6d. per ton *f.o.b.* *Tar*, refined, 12s. 6d. per barrel, 2¼d. per gallon, crude 12s. 6d. per barrel, 2⅛d. per gallon.

COCAINE.—The makers continue to state that an advance in price is inevitable. They have not, however, so far, fixed such advance, their prices remaining 11s. 3d. to 12s. 3d. per oz, according to quantity and brand, for the *Hydrochlorate*, in 25-oz. tins, while from second hand these prices can be shaded. The quantity available from second hand must, however, have meantime been considerably reduced, which is possibly what the makers have been anticipating and waiting for prior to advancing their prices. It is stated that the consumption of the article is rather on the decrease than on the increase.

CODEIA—Is very firm at 12s. 3d. to 12s. 6d. per oz. for the *pure*, and 1s. per oz less for the *salts.*

COD-LIVER OIL—Is, if anything, the turn firmer, it is, however, still possible to buy best new non congealing *Norwegian Oil* at 58s. to 60s. per barrel, *c i f.*, according to brand, in 25-gallon tin-lined barrels.

CREAM OF TARTAR—Steady at 73s. per cwt. for first white *crystals* on the spot, and 75s. to 77s. 6d. per cwt. for *powder.*

ESSENTIAL OILS—Continue exceedingly quiet, with practically nothing doing, with the exception of *Cassia*, for which there has been a moderate demand for arrival, prices paid did not, however, transpire.

GALLS.—*China* remain very quiet at 57s. to 58s. per cwt., on spot, for usual shape, and 62s. per cwt. for plum shape, at which prices a few sales have been effected. *Persian*, in demand at 62s. 6d. per cwt. for *Blues*, but holders ask rather more money. Of *Smyrna* a few small sales of *Blues* at 57s. 6d. per cwt. have taken place.

GINGER.—*Cochin* in good supply and slow of sale. Of about 1200 packages only 167 bags and 91 cases found buyers; medium and bold cut and scraped sold, without reserve, at 45s. to 45s. 6d., small ditto at 28s. 6d.; medium, some bold, roughly cut, at 41s.; washed rough medium and small at 22s. to 22s. 6d.; small and ends at 18s. to 20s.; ditto, shrivelled, at 16s. Of 150 bags *Japan* 50 sold; fair small limed at 17s. *Jamaica* in fair demand and only moderate supplies offered, realising higher rates for good qualities. Good bold bright fetched 77s. 6d.; medium to fair bright plump, 67s. to 72s.; ordinary to good ordinary, 54s. to 64s. 6d.

GLYCERINE.—Makers of *refined* are still quoting low prices, in spite of the fact that *crude*, and especially the quality most suitable for refining purposes, is firm, and even slightly dearer. The best white double-distilled chemically pure 1260° quality, in tins and cases (2 or 4 × 56 lb. tins in a case) can still be bought in quantity below 50s. per cwt. for English make, the best German brands being held for 53s. to 57s. 6d. per cwt.

IODINE AND IODIDES—Are in good demand, prices being without change at 7½d. per oz. for *Commercial Iodine*, 10s. 6d. per lb. for *Potass. Iodid.*, 11s. 10d. per lb. for *Sodii Iodid.*, 14s. 6d. per lb. for *Ammon. Iodid.*, 13s. 10d. per lb. for *Iodoform cryst.* (*pulv.* and *precip.*), and 12s. per lb. for *Iodine re-sublimed.*

IPECACUANHA.—Holders are firm at 13s. 9d. to 14s. 6d. per lb. for *Rio*, and 10s. 9d. for *Carthagena.*

MENTHOL.—Market is rather firmer both on the spot and for arrival; it being, however, still possible to buy good dry white *crystals* on the spot in case lots (12 × 5 lb. tins) at 7s. per lb., perhaps even a trifle below this price for 5-case lots.

MERCURIALS—Are firm at 2s. 10d. per lb. for *Calomel* and 2s. 6d. per lb. for *Corrosive Sublimate.*

MORPHIA.—Market is rather firmer, especially for prompt delivery, there being a demand which makers are unable fully to satisfy. Price remains, however, nominally 4s. 6d. per oz. for the *Hydrochlorate* in powder, while rather less would be accepted for large contracts and for little later delivery.

NITRATE OF SODA—Is quoted £8 7s. 6d. per ton for refined on the spot, and 5s. per ton less for the ordinary commercial article.

OILS (FIXED) AND SPIRITS.—*Linseed* quiet and 2s. 6d. per ton lower; London spot pipes, £18 7s. 6d.; barrels, £18 15s. to £18 7s. 6d.; June-August, £18 15s.; September-December, £17 17s. 6d.; Hull weak at 5s. decline; spot naked, £17 10s.; June-August, £16 15s.; September-December, £15 15s. *Rape* quiet; ordinary brown spot, £21 to £21 5s.; June-August and September-December, £21 5s.; refined spot, £22 10s.; Ravison naked spot, £17; June-August and September-December, £17 5s. *Cotton* steady; London crude spot, £14 7s. 6d.; June-August, £14 12s. 6d.; refined spot, £16 to £17, according to make; Hull naked refined spot, £15 5s.; June-August, £15 7s. 6d.; crude spot, £14 5s.; June-August, £14 7s. 6d. per ton. *Olive*: Mogador, £30 to £31; Spanish, £30 to £32. *Coconut*: firm; Ceylon spot, £25 15s. per ton, landed; June-July, £24 5s. to £24 10s., *c.i.f.* Cochin, spot, £29, landed, May-June, £26 10s.; August-October, £26 2s. 6d., *c.i.f.* *Palm*: Lagos, spot, £23 10s. *Lubricating*: Pale American, 5s. 6d. to 7s. per gallon; dark, 5s. to 5s. 9d. *Turpentine*: Quiet, but fairly steady; American spot, 34s. per cwt.; May, 32s. 6d. to 32s. 9d.; June, 30s. 6d.; July, 28s. 3d.; Sept.-Dec., 27s. 4½d.; Jan.-April, 1900, 28s. per cwt. *Petroleum*, firm, Russian spot, 4$\frac{13}{16}$d. to 4⅞d. per gallon; September-Decemler, 4⅞d. to 4$\frac{15}{16}$d.; American spot, 5¼d.; September-December, 5⅜d.; water white, 6⅜d. to 6½d. per gallon; Septemtember-December, 6¼d. *Petroleum Spirit*, American, 9d.; Water White, 9½d. per gallon.

OPIUM.—Market is rather firmer, with a fair demand for *manufacturing* kinds, while *soft shipping* remains quiet. *Druggists'* kinds are also in rather better demand. For *Persian* there has been a good inquiry, and full rates have been paid for good to fine, say, 11s. 3d. to 11s. 6d. per lb., while the lower qualities at 10s. 3d. to 10s. 9d. are also firm.

OXALIC ACID—Is still quoted 3⅜d per lb. nett, free delivered London.

PARAFFIN WAX.—*Crude* is quoted 1¾d. to 2d. per lb., and *refined* 2¼d. to 3d. per lb.

PITCH—8s. to 8s. 6d. per cwt.

PHENACETIN—Continues very weak, as low as 3s. 2d. per lb. having been quoted by one maker in competition with a fellow manufacturer. To make matters worse, in addition to the keen competition for orders on part of makers, there are sellers from second hand almost *à tout prix*, while it would appear that the consumptive demand is rather falling off than increasing.

POTASH COMPOUNDS.—*Bicarbonate*, 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Bromide*, 1s. 10½d. per lb. *Chlorate*, crystals, 3¾d.; powder, 4d. per lb., spot London. *Permanganate* is decidedly steadier, it is, however, still possible to buy small crystals at 52s. 6d., and large crystals as 57s. 6d. per cwt. for quantity in 1 cwt. kegs, ex wharf London. *Prussiate*, yellow, English, 8d. to 8½d. per lb.; red 1s. 1d. to 1s. 2d. per lb.

QUICKSILVER—Remains firm at £8 2s. 6d. per bottle from the importer.

QUININE.—After being dull all the week and down to 1s. 3d. per oz. for the best brands of *German sulphate* in 100-oz. tins and for

1000-oz. lots for spot delivery, 1s. 3¼d. per oz. for August delivery and 1s. 3½d. per oz. for October delivery, the market has again brightened up, partly in consequence of the pressure to sell on part of weak holders having ceased, and partly in consequence of the moderate shipments of *Bark* from Java advised for first half of the month of May, same being reported to be only 225,400 Amsterdam lbs., and to-day there are buyers at 1s. 3½d. for August delivery, but no sellers below 1s. 3¾d. The makers' price for the best *German* brands remains unchanged at 1s. 6d. per oz. for the *Sulphate* for 1000-oz. lots in 100-oz. tins.

Rosin.—Strained spot, 4s. 4½d. per cwt. ex wharf, and 4s. 1½d. per cwt., *c.i.f.*, for July-September shipment per sailing vessel.

Shellac.—Market has turned very quiet, with moderate sales of *Second Orange* at 67s. 6d. to 69s. per cwt. for fair to good *TN*, while for arrival there are sellers of *TN* at 67s. 6d. per cwt., *c.i.f.*, for April-June steamer shipment, but no buyers thereat.

Spices (Various). — *Black Pepper*: Singapore, Penang, and Tellicherry all bought in; 10 bags Ceylon sold, good bold at 6½d. *White Pepper*: Singapore, Siam, and Penang all bought in, 14 bags Ceylon sold, dull to fair at 7⅞d. to 8¼d. *Cassia Lignea*, 10 mats broken, sold without reserve, at 31s. *Cinnamon*: Of 392 bags Ceylon 118 sold, chiefly without reserve, fair quillings at 6½d., ordinary to fair chips at 2¾d. to 3⅛d., bark at 2¾d. *Mace*: Of 23 cases Penang only 1 case sold, good bold bright part wormy at 2s. 1d. *Pimento* easier, of 473 bags 204 sold, chiefly without reserve, ordinary at 3¾d., fair to good fair at 3⅞d. to 4d.

Soda Compounds.—*Crystals*, bags, 52s. 6d.; barrels, 55s. per ton ex-ship Thames; *Ash*, £5 to £5 10s. per ton according to strength. *Bicarbonate*, commercial 97 per cent., £7 10s. to £8 per ton, and 19s. 6d. to 20s. 6d. per cwt. for the fully bicarbonated. *Bichromate* 2¾d. per lb. *Caustic*, white, 70 per cent., £7 10s. per ton, 60 per cent. £1 per ton less. *Hyposulphite* (*Antichlor.*), 6s. 6d. to 8s. 6d. per cwt., according to make and packing. *Iodide*, 11s. 10d. per lb. *Nitrate*, refined, £8 7s. 6d.; commerciai, £8 2s. 6d. per ton.

Sugar of Milk—Is in short supply as regards the American makes, which have now become the chief factors in this market, and prices are firm at an advance of 2s. 6d. to 5s. per cwt. according to brand.

Sulphate of Copper—Is firm at £25 5s. to £26 10s. per ton for spot delivery.

Sulphonal.—The two chief makers maintain their price at 17s. per lb. for *crystals* or *powder*, while stocks in second hand appear to be practically exhausted; there is, however, a rumour that a new maker has appeared in the field, which if it proves to be correct, may easily lead to the cutting of prices on part of the two principal makers above referred to, who had been hoping to keep the business in the article entirely in their own hands.

Tar.—*Stockholm*, 26s. 6d. *Archangel*, 20s. per cwt.

Turmeric—Remains very quiet with only small retail sales at about previous rates, viz., good *Bengal* at 18s. 6d. per cwt., good *Madras* finger at 30s., *Cochin* 17s. 6d. to 18s., split bulbs at 10s., and bright *China* finger at 19s. 6d. to 20s. per cwt.

Manchester Chemical Report.

May 17, 1899.

Heavy chemicals of all classes are very steady, and there are no changes in prices to report. There is a good forward inquiry, which gives confidence to the market. In miscellaneous articles there are one or two advances. Sulphate of Copper is now at £27 to £27 10s. per ton for best brands, Manchester, the orders from the Continent having been very heavy, and the uncertainty in the price of the metal still acting as a factor in the price, both prompt and forward. Brown Acetate of Lime is easier for English make at £4 15s. to £4 17s. 6d., and up to £5 for American, *c.i.f.*, Manchester. Arsenic has advanced to £19 10s. per ton, ex ship, Garston, and continues scarce. Sulphate of Ammonia is unsettled and nominal, most makers in this district being contracted forward. Acetate of Soda is firm at £13 per ton, *c.i.f.* In Chlorate of Potash there is no change up to the time of writing, notwithstanding the fact that the fearful explosion at St. Helen's has taken over 160 tons off the market. Aniline Oil and Salt are quiet and unchanged. White Sugar of Lead is dull at £23 per ton, *c.i.f.* Saltcake is quiet and irregular at 27s. to 29s. per ton, in bulk on rails. Glycerin is ranging from £45 to £46, English chemically pure, tins and cases, but makers are open to offers at lower figures.

Newcastle Chemical Report.

May 17, 1899.

More Baltic shipping passing is causing greater activity on this chemical market. Heavy goods are moving with more freedom. Bleaching Powder stands firmly at quoted prices. Sulphur still remains scarce. Quotations are:—Bleaching Powder, £5 7s. 6d. to £5 12s. 6d., according to market. Soda Crystals, 45s. to 47s. 6d. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Caustic Soda, 70 per cent. basis, £7 to £7 5s. Sulphur, £5 per ton.

Liverpool Market Report.

May 17, 1899.

Drugs generally have been but slightly affected as regards changes in price during the week. In Oils higher rates rule in Linseed and Cottonseed. Spirits of Turpentine have fluctuated considerably, but are now steady at last week's price. Miscellaneous sales include a good quantity of Sierra Leone Ginger at fair rates, dried Kola Nuts at recent prices, and Carnauba Wax at full prices. Chemicals are unchanged and not very brisk.

Ammonia Salts.—*Carbonate* is very firm at 3⅛d. to 3¼d. per lb. *Sal ammoniac* is firm at 33s. to 35s. per cwt. *Sulphate* is dearer, £12 5s. per ton.

Beeswax.—20 packages of Sierra Leone brought from £5 to £6 10s. per cwt., and 7 packages Bissao made £6 12s. 6d. per cwt.

Bleaching Powder—Is still quiet at £5 per ton.

Canaryseed—Is in quiet but steady retail demand at 25s. 6d. to 26s. per 416 lbs. for Turkish. Sales are 120 bags at the former figure.

Carnauba Wax.—70 bags of Pernambuco grey went 41s. 6d. per cwt.

Copperas—Is extremely firm, Welsh at 37s. per ton, and Lancashire at 40s.

Copper Sulphate—Is quiet at £26 7s. 6d. to £26 10s. per ton.

Ginger.—265 bags of *Sierra Leone* sold for 17s. 3d. per cwt.

Kola Nuts.—7 packages of dried, offered at 1¼d. per lb., found a purchaser.

Oils (Fixed) and Spirits.—*Castor* are quiet in tone on the spot, but forward are firmer. Calcutta spot figures at 2⅞d. per lb., to arrive 2⅛d. per lb. French spot, 2⅛d. to 2¾d. for first pressure, 2⅝d. for second pressure; forward, 2¾d. per lb., first pressure; Madras, 2¾d. per lb. *Olive* are firm and steady; Spanish at £31 to £31 10s., and Candia at £31 to £32 per ton. *Linseed* of Liverpool make is a shade firmer, 19s. 6d. to 20s. per cwt. being asked, in export casks. *Cottonseed*: There is a fair trade doing in Liverpool refined at 17s. to 17s. 6d. per cwt., in export barrels. *Spirits of Turpentine* have been irregular in quotation during the week, but close at 35s. 9d. per cwt., owing to arrivals from London.

Potash Salts.—*Bichromate*, 3½d. per lb. *Cream of Tartar* is easier with spot parcels at 74s. to 80s. per cwt. *Chlorate*, 3⅛d. to 3¾d. per lb. *Pearlashes* are very quiet at 32s. per cwt. *Potashes*, 23s. 3d. to 23s. 6d. per cwt. *Saltpetre*, £22 10s. per ton.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax*, £15 10s. to £16 per ton. *Caustic Alkali*, 76 per cent. to 77 per cent., £7 15s. per ton; *crystals*, £3 per ton. *Nitrate* is steady with fair demand at 8s. to 8s. 3d. per cwt.

PERSONALITIES AND BUSINESS NOTES.

[Notices are inserted free in this column, if sent by persons directly interested or otherwise properly authenticated.]

Mr. F. W. Cannon, M.P.S., of Wallington, Surrey, formerly with Messrs. Steele and Marsh, Bath, has purchased the old-established business of Messrs. Bally and Co., High Street, Baldock, Herts., and will take over the same immediately.

Mr. H. Wootton have removed from No. 3, Kew Gardens Road, Kew, and is now in residence at the London College of Pharmacy, 323 Clapham Road, S.W.

Mr. G. Graham Davidson (recently assistant with Messrs. Squire and Sons, London), has passed first in the competitive examination, held by the Civil Service Commissioners, for three appointments as dispenser in H.M. Naval Hospitals at home and abroad.

EXCHANGE.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Stocktaking Clearing Lines.—New 5000 cartes, the lot 15s.; 2500 cabinets, 25s.; 1000 stereoscopic, 12s.; 1000 ½ plates, 12s.; 1000 ¼ plates, 5s.; 1000 (¼ pl.) 8×6 Oxford Lines, 15s.; 1000 waterproof cabinets, dark, 15s.; 1000 "Slip in Pocket" Kodaks, 17s. 6d.; soiled, 500 assorted "Slip Ins," 15s.; 1000 each c.d.v. and cabinets, G.B.E. light colours, 25s. (lot); 1000 each ditto, dark, 30s.; 1000 ¼ plates G.B.E., 7s. 6d.—Edward Peck, East Dereham.

Frena ¼-Plate Hand Camera (No. 2), faultless condition, canvas case with strap for back; cost £8 17s. 6d., charged. Cash offers.—Chemist, 146, High Street, Southampton.

Bargains.—Counters, Cases, Shop-rounds, Blue Syrups, Engraved Acids, Soda Water Apparatus, etc.; list sent.—Hasselby, Chemist, Doncaster.

Bismuth Subcarb., 5s. 3d. per lb., 4 lbs. £1; Iodoform Precip., 13s. per lb.—Eastman, Forest Lane, Stratford.

'Chemist and Druggist' from 1873 to 1899, cash offers; also 'Diary,' 1877 to 1899.—Woodward, North End, Uttoxeter.

Pharmaceutical Journals from 1878. Cash offers for whole or part.—Geo. S. Peck, Baldock.

Stock Soiled.—Stethoscopes: plain, 9d.; portable, with ivory centre and end, 1s. 3d.; with plessor and pleximeter, 3s. Scarificators: 12 blade, new condition, 5s.; two pewter cuppers with brass pump, in mahog., 5s. Plated Vaginal Speculums: 2-blade, 3s.; 3-blade, 4s.; 4-blade, 5s. Introducers, 1s. Send for list of other goods.—Phillips, 172, Harringay Road, West Green, Tottenham, London.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Munyon's, and Daisy Powders, quantity and lowest price.—Eastman, Forest Lane, Stratford.

A Set of Narrow-mouthed and Wide-mouthed Shop Rounds, must be cheap.—Rounds, 'Pharm. Journal" Office, 5, Serle Street, London, W.C.

Advertisements.

(Received too late for Classification).

QUALIFIED ASSISTANT wanted. In or out-doors. Must write a good hand, and of good address. Apply, with full particulars, to A., 74, New Bond St., London.

DURBAN, NATAL.—Qualified ASSISTANT wanted. Young man, good appearance, quick and accurate dispenser. Salary £150 1st year, £165 2nd, £180 3rd year. Room supplied, but not board. 2nd class passage paid. 3 years' agreement to be signed. Apply, with full particulars, to R. M., c/o "Pharm. Journal" Office, 5, Serle St., London, W.C.

CAPE TOWN.—Qualified ASSISTANT wanted for first-class chemist's business, not over 26 years of age. Thoroughly steady, quick and accurate dispenser. 2nd class passage paid. 3 years' agreement to be signed. Room supplied, but not board. Salary 1st year £12, 2nd year £13 10s., 3rd year £15 per month. Further particulars on application to MEDICUS, c/o John Murdoch & Co., 52, Leadenhall St., London.

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Calendar for the Week.

Sunday, May 21. Whit Sunday. Sun rises, 4.2; sets, 7.52.

Monday, May 22. Sun rises, 4.1; sets, 7.53.

Tuesday, May 23. Sun rises, 4.0; sets, 7.54.
ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—Mrs. Isabella Bishop on "Corea," the lecture being illustrated by photographic lantern slides. Tickets for the lecture may be obtained by anyone interested on application to the Assistant Secretary.

Wednesday, May 24. Sun rises, 3.59; sets, 7.56.
FORFARSHIRE AND DISTRICT CHEMISTS' ASSOCIATION, at Kirriemuir.—Annual Meeting and Dinner.
WESTERN CHEMISTS' ASSOCIATION (OF LONDON), Westbourne Restaurant, Craven Road, at 9 p.m.—General Business Meeting.

Thursday, May 25. ☽ 5.49M. Sun rises, 3.58; sets, 7.57.
CHEMISTS' ASSISTANTS' ASSOCIATION, 73, Newman Street, W., at 9 p.m.—Annual General Meeting.

Friday, May 26. Sun rises, 3.57; sets, 7.59.
ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—Sir W. M. Conway on "Climbs and Explorations in the Andes."

Saturday, May 27. Sun rises, 3.56; sets, 8 0.
WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP, at West Green.—Hewlett's *v.* Davy Hill's.

Obituary.

Rookledge.—On May 7, John Rookledge, Chemist and Druggist, Easingwold (Yorks). Aged 70.

Robertson.—On May 9, John Robertson, Chemist and Druggist, Camberwell, S.E. Aged 38.

Akhurst.—On May 11, William Edward Akhurst, Chemist and Druggist, late Walworth. Aged 55.

Ordish.—On May 4, at his residence, Holmhurst, Uxbridge Road, London, W., Thomas Ordish. Aged 78. He was the founder of the firm of T. Ordish and Co., in 1842, with which he was intimately associated until the time of his death. The business, it is understood, will be carried on exactly as heretofore.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc. have been received from Messrs. Abram, Bailey, Bartlett, Baylis, Bowdler, Cheney, Cindre, Cracknell, Ellis, Fox, Henry, Hill, Jones, Lewis, Lunan, Marsden, Meadows, Osborne, Peck, Sawer, Shorrock, Smith, Stooke, Summers, Taylor, Turvey, Wilkins, Williams, Wootton, Wyatt.

POLITICAL GOSSIP.

Well Done, Southport!—The chemists of the Southport Division of Lancashire, acting upon the hint given in this column a fortnight ago, have asserted themselves to such good purpose that both Mr. Balfour and Sir G. Pilkington are pledged to oppose the Lord Chancellor's Pharmacy Bill in the event of the Bill, or the candidates, reaching the House of Commons. This must be regarded as a distinct success, as well as an object lesson for those who, like ourselves, recognise the extreme need for a well-organised pharmaceutical Parliamentary party. The Southport constituents have demonstrated to their two candidates not only that there are such persons as chemists and druggists, but also that they have at least one legitimate grievance; and, what is more important still, they have gone some way towards showing that the particular injustice which most afflicts pharmacy is inseparably associated with prejudice to the general community. That is the only reasonable line of demonstration that can be expected to appeal to gentlemen who seek to represent the public in the National Parliament.

One Jarring Note was heard at Southport, and as it is not without significance it may be advantageously referred to here. Both candidates are reported to have spoken of "monopoly" and "Free Trade," which is, perhaps, natural when one is ill acquainted with the position registered persons occupy; but in that connection such catch words sit ill upon the lips of a man like Sir George Pilkington, who formerly practised medicine, and should know something of the pharmacist. His opponent, too, seemed rather prone to regard the deputation of chemists merely as a collection of tradesmen, not numerically powerful, who desired to secure commercial advantages for their class at the expense of the consumer. It may still be somewhat uncertain whether he has fully persuded himself that legally qualified chemists ought rightly to be placed even with the midwives in the Companies (Medical Profession) Bill. Unfortunately the first impressions of the two Southport candidates represent the settled conviction of the general public in regard to the business of a chemist and druggist and to the position of those legitimately engaged therein, and the legal exponent of the Pharmacy Act was not very happy in pointing out either the object of that Act or the injustice of the evasion of it which chemists suffer under. How far chemists themselves may be to blame for having contributed to the manufacture of the very generally warped judgment on those points need not now be discussed; one thing is clear, the warp is there, and practically no advance in public estimation can be made until the obstruction is removed.

"No Monopoly," like many other weapons in the armoury of a free nation, is sometimes recklessly used, and it certainly is an abuse of power to flourish that phrase in the face of pharmacists. Mr. John Burns is notoriously no friend of exclusiveness, social, commercial, or professional, but even he has placed upon record the opinion that the principles of democracy do not go so far as to embrace free trade in potent drugs. That view is a sound one, for considerations of public safety must always outweigh all others. If any of our friends should approach their members and be met with the Free Trade argument, we hope they will contrive to scotch it *ab initio*. One lesson may be deduced from the reception of the chemists and druggists of South-west Lancashire by their Parliamentary candidates, and that is, how unwise it is to obtrude the trade side of pharmacy or to allow it to be brought to the front when they are seeking for recognition of the individual professional qualification. That is the only ground upon which their claims can be reasonably urged, or are likely to be listened to.

It Moves!—The Companies Bill (H.L.), which for three successive sessions has been buried under the weighty proceedings of a Select Committee, and seemed laid to rest for ever, has at last been disinterred. In other words, the Committee of Lords having charge of the Bill has reported to the House the conclusion of its labours, together with the alterations which it deems desirable to suggest in the interest of the "poor but honest" director. This advance was made on May 18, just before the House rose for the Whitsun recess, the Bill being presented with amendments and laid aside for future consideration by a Committee of the whole House. No day has yet been named for the Committee stage, nor are the minutes of evidence, the report, or the amended Bill itself yet available for distribution. There appears to be good reason to anticipate that the Bill will go down to the House of Commons within the next fortnight and, if so, there should be some interesting debates in store on the question of company promoting. We hope to deal with the position more in detail next week.

EXTRACTS FROM CONSULAR REPORTS.

Chemists' Assistants' and Others who may think of transferring the scene of their labours from this country to the South African Republic may be interested to know that the conclusion arrived at by the Industrial Commission, which recently went into the question of white labour in the neighbourhood of Johannesburg very thoroughly, was that while the cost of living remains as high as at present it is not possible for the average white man to subsist on lower wages than now obtains. Evidence was adduced to show that it costs miners and others with families about £20 per month to merely live, irrespective of clothing and luxuries, and although this estimate is probably somewhat exaggerated, it is not far from the mark. The Chamber of Mines publishes a return which shows that in 1897 white men to the number of 8060 were employed in the "Fields," and that the average wage per man was £26 per month. It is pointed out in a recent report that while unmarried men may be able to save money out of such a wage, married men with families to support are not able to do much in that direction, even with the exercise of the greatest economy.

Substances Employed in Pharmacy, perfumery and chemical industries do not appear to be imported into Spain very largely from Great Britain, for after stating that in 1898 the province of Asturias received no superphosphate from this country, although there is a growing demand for that article in connection with the cultivation of beetroot, the estimate for 1899 being 10,000 to 12,000 tons, Consul C. A. P. Talbot goes on to say that Great Britain is equally behind other nations in importing the substances above mentioned. He expresses a hope that British manufacturers desirous of extending their foreign trade will take note of the fact, and endeavour to obtain a footing in the Spanish market, especially with regard to chemical manures, which should contain from 14 to 16 per cent. of phosphoric acid. In this connection, too, Acting-Consul Haag, reporting on the trade of Cherbourg and district, states that he is firmly convinced that there is still a very large and increasing market for artificial manures, and if British firms wish to maintain and improve their position in the market and their prices, it is high time that they should bestir themselves and send out fully qualified representatives, in order to ascertain the requirements and watch the fluctuations of the market, as a French syndicate is about to be established at Honfleur, which will attempt to close French markets to them permanently.

Carbonate of Soda imported by the native potteries, glass and explosive works in the province of Asturias (Spain) amounted in 1898 to 252 tons, of which Belgium sent 228 tons; Great Britain, 20 tons; and France, 4 tons. Sulphate of soda was all supplied from Belgium. Of nitrate of soda Great Britain sent none, while France sent 519 tons, and Belgium 30 tons. The importation of sulphur was 31 tons in all, France furnishing 21 tons, and Belgium 10 tons. Out of a total of 70 tons of sulphuric acid, Great Britain imported 10 tons, France, Germany, Holland, and Belgium sending the balance. The starch business is monopolised by Belgium.

Sulphate of Copper continues to enjoy the highest favour with Tuscan wine-growers as a dressing for the vines, but, according to a recent report, the large business done in the article at the port of Leghorn is beginning to prove unsatisfactory to those concerned, owing to the extreme lengths to which competition is running. Several British would-be importers, attracted by the large volume of business, are said to have been compelled to retire on account of the impossibility of securing an agent who could, under present circumstances, guarantee them satisfactory results. The import slightly declined in 1898, but was almost entirely of British origin. Tuscany is now producing sulphate of copper, but the home-made article has not as yet secured any large share of public favour.

FOOD AND DRUGS ACT PROSECUTIONS.

Camphorated Oil.—At Dudley Police Court, on Monday, May 15, Phœbe Ameson, huckster, Swan Street, was charged with selling camphorated oil not of the nature and quality demanded.—Inspector T. C. Brown said he sent to defendant's shop for half-a-dozen bottles of camporated oil. The bottles were supplied labelled "aromatic camphorated rubbing oil," but it was deficient in strength.—Mr. Barradale said it was a case of playing upon ignorance. The manufacturing firm was sharp enough to label it so as to protect themselves, but poor people like the defendant rendered themselves liable by selling it for what was demanded in the popular name.—The Inspector said she ought to have had a written warranty.—Defendant was fined 1s. and costs.——Wm. Frost, confectioner, of Prince Albert Street, Crewe, was summoned at the Borough Sessions last week for unlawfully selling 4 ozs. of camphorated oil which was not of the required substance demanded by the purchaser, there being a deficiency of camphor to the extent of 15 per cent.—A report from Dr. Carter Bell stated that the sample contained only 6 per cent. of camphor, and it should have contained 21 per cent.—The defendant said that the oil which was served to the inspector was exactly the same as had been supplied to him, but in cold weather the camphor settled at the bottom of the bottle, and his wife being in the shop at the time, and perhaps not understanding the oil, naturally turned it straight out, with the result that the strength of the oil remained at the bottom.—He was ordered to pay the costs (15s.).

Olive Oil.—At West London, on May 19, an adjourned summons was heard against King and Mortimer (Limited), of Palmerston Buildings, Old Broad Street, issued at the instance of the Fulham Vestry, under the Sale of Food and Drugs Act, in respect of the sale of olive oil which was found to contain 70 per cent. of oil other than that of olives.—Mr. Blanco White supported the summons on behalf of the vestry, and Mr. Montagu Shearman appeared for the firm.—It was alleged that the vestry's inspector went to one of the firm's shops in North End and asked for a flask of olive oil. When the assistant who supplied the flask heard that the oil was purchased for analysis he said the inspector did not ask for olive oil, but for oil.—Dr. Jackson, the medical officer of health, described the flask sold as an imitation of an Italian flask.—For the firm it was contended that the flask of oil was a well-known article in the trade, not used for food, but for cleaning purposes, and it was stated that salad oil was also sold in bottles.—Mr. Shearman said the point the magistrate had to determine was whether the inspector asked for a flask of oil. It was a *bonâ-fide* mistake.—Mr. Rose (the magistrate) believed the inspector asked for a flask of olive oil and got a flask which was not olive oil. He was surprised to hear that olive oil was not sold in flasks, for according to the firm's own price list they were prepared to sell olive oil in flask. He fined the defendants £5 with £1 13s. 6d. costs. A summons against the assistant who sold the flask was withdrawn.——The Crockenhill Industrial Co-operative Society was summoned at Dartford Police Court, on May 13, for selling olive oil which, according to the county analyst, was 100 per cent. cottonseed oil. It was stated for the defence that the oil in question was sold by mistake, pure olive oil being kept in the shop.—Defendants were fined 15s., including costs.

Iodine Liniment.—Bertrand Walter Kilvert, chemist and druggist of Earle Street, Crewe, was summoned last week for selling, on April 11, to the prejudice of Albert Timmis, 3 ozs. of liniment of iodine, which was deficient of iodine to the extent of 7·5 per cent. Mr. F. Latham appeared for the defendant.—Thomas Wright said he went into the defendant's shop on April 11, and handed to the assistant behind the counter a paper, which was to the effect that he wanted 3 ozs. of iodine liniment. He was served, and a charge of 1s. 6d. was made. Before leaving he told the assistant that he wanted the liniment for a gentlemen outside, who was going to have it analysed. He then handed the bottle containing the liniment to Mr. Timmis, who returned with witness to the shop. They saw Mr. Kilvert, who said that it was not a liniment of iodine, but the tincture.—Albert Timmis, Inspector under the Weights and Measures Act for the Cheshire County Council, stated that he sent a portion of the article purchased to Dr. Carter Bell, the public analyst, who reported that the sample only contained 3·5 per cent. of iodine, and should have contained 11 per cent.—Mr. Latham, on behalf of the defendant, pleaded guilty, but pointed out to the Bench that the iodine was supplied by the defendant's assistant. He also informed the Court that it was not customary for chemists to supply iodine liniment to ordinary customers, as they did not know the proper strength of it. They only supplied it on doctors' prescriptions or to hospitals.—The defendant expressed his sorrow that such a thing had happened, and promised in the future to look after such strong drugs as iodine himself.—The Bench ordered the defendant to pay the costs, which amounted to 16s.

Oil of Juniper.—At the Clerkenwell Police Court on May 17, the summons against William George Blackham, chemist and druggist, 510, Hornsey Road, N., for having sold oil of juniper which contained 100 per cent. of oil of juniper wood (see *ante*, p. 426), again came on for hearing. It will be remembered that the case was adjourned in order that a sample might be submitted to Somerset House for analysis, as the defendant contended that the oil answered all the tests of the B.P.—It was urged for the prosecution that the B.P. 1898 required that the oil should be prepared from the unripe green fruit, that it should, in fact, be oil of juniper and not oil of juniper wood. The Somerset House certificate stated that the oil in question agreed in colour, odour, solubility, specific gravity, and taste with the B.P. article, but it was oil of juniper wood.—Mr. Horace Smith, the magistrate, said that if an article was asked for at a chemist's the purchaser expected to get the pure article, and as the oil was not in accordance with the requirements of the Pharmacopœia, a fine of £3 and £2 2s. costs would be imposed.

Camphor Liniment.—At the Sittingbourne Petty Sessions on Monday, May 15, William Gibbs Gordelier, chemist and druggist, of Sittingbourne, was summoned for selling camphor liniment not of the substance and quality demanded, being deficient of 34 per cent. of camphor. It transpired that the olive oil was not sufficiently heated when the camphor was put in, consequently it had not properly dissolved, but had settled at the bottom. A sample was subsequently taken from the same bulk, and on that occasion it was found to be pure.—A nominal fine of 1s., with 11s. costs, was imposed.

IRISH NEWS.

The Cork Literary and Scientific Associations have invited the British Association to visit the "Southern Capital" this year. It is expected that the invitation will be accepted.

Correction.—Owing to indistinct writing, the title of the paper read before the Royal Irish Academy, referred to last week (p. 466*d*), was misspelled, it should have been "The Irish Phæophyceæ."

A Syndicate has been Formed to purchase Muckross Estate, Killarney, and to establish in the town a factory for the manufacture of calcium carbide, the material for which abounds in the neighbourhood.

The Coleraine Board of Guardians have before them the suggestion to apply the "lowest tender" principle to the local dispensary officers, fixing the nominal salary as in the case of drug contracts, and appointing the doctor who puts in the lowest "cut."

The Legal Mind.—Adjudicating a few days ago in the Court of Queen's Bench, Dublin, Judge Boyd (brother of the late Mr. Samuel Boyd, chemist and druggist) made the remarkable observation that he did not place much reliance on doctors' statements or certificates, and that the only statements which could be accepted without reserve were those made by barristers. Doctors could say what they liked and unless they were pulled up by some astute person would have it all their own way,

In Connection with the Refusal of the Local Government Board to supply a certain drug to the South Dublin Guardians, on the ground that the article is not on the official list of medicines, the Local Government Board inspector, Dr. Flinn, stated last week to the guardians that the list had been under consideration for ten months, and the greatest possible pains were taken to make it comprehensive. The leading members of the College of Physicians and Surgeons considered the list an excellent one, and the doctor who could not prescribe and carry out his practice with the material provided was very hard to please. The Chairman repeated the adage of the man who

quarrels with his tools. Another guardian objected to the attempt to stop the progress of medical science by official red-tape.

The Belfast Harbour Commissioners give notice that they have revised their regulations and rates in respect of drugs, chemicals, etc., placed in their charge.

ENGLISH NEWS.

Drug Stores: A New Departure.—On Thursday, May 18, an application was made before Justices Darling and Channell, sitting as a Divisional Court, for a mandamus directing the Licensing Justices for Middlesex to hear and determine an application made by Mr. E. J. Bishop and Mr. Robert Vincent, carrying on business at 460, Holloway Road, N., as Bishop's Pure Drug Co., for a licence to sell spirits by retail, to be consumed off the premises.—Mr. G. Elliott and Mr. Cecil Fitch appeared for the applicants, who had previously obtained a *rule nisi*.—The Justices did not appear by counsel, but had put in an affidavit stating the facts. From this it appeared that the adjourned licensing meeting was held at the Sessions House, Clerkenwell, on March 18, when the application was made for the licence under 24 and 25 Vic., Cap. 21, Sec. 2. No previous application for such a licence had been made in the Finsbury division by a chemist, as far as the Chairman was aware, and having ascertained from the applicants that they desired to compete with the stores in the neighbourhood, the application was refused. No reason was then assigned for the refusal, but in the affidavit it was stated that the Justices did not think the Legislature intended chemists to sell spirits in bottles for consumption off the premises, and they thought such a practice would be very undesirable.—Mr. Fitch said this affidavit was really no answer at all, and submitted that the Justices had no right to refuse such a licence, except on grounds affecting the character of the applicants or the premises.—Mr. Justice Darling said he saw no reason why the applicants should not add to their stock of poisons if they desired to do so.—Mr. Justice Channell concurred, and the mandamus was ordered to issue.

The Wrong Oil.—At the Brigg County Court, on May 12, Nathaniel Boon, chemist and druggist, of Kirton-in-Lindsey, was sued for £5 damages for negligence in supplying wrong medicine to a Mrs. Garbutt.—The case for the plaintiff was that, when asked for ½ oz. of castor oil, defendant's son supplied something in a bottle labelled "Castor Oil" which, however, on a dose being administered to plaintiff's two children, made them very ill, necessitating a doctor's attendance for six weeks. The doctor could only attribute the illness to a dose of croton oil. The amount claimed was in respect of the doctor's charges for attendance. His Honour, Judge Norris, was of opinion that the illness was caused by the contents of the bottle, and that the defendant's son had made a mistake. He gave judgment for the plaintiff for the amount claimed with costs.

Farewell Dinner at Haslar.—On May 12 the dispensers of the Royal Naval Hospital, Haslar, entertained Mr. Houghton, their late chief, who has just retired on a pension, to a farewell dinner. The chair was occupied by Mr. G. H. Howells. After the table was cleared, the Chairman proposed the toast of "The Guest of the Evening," remarking that they were all very sorry to lose him, and that they would miss his genial presence. He next referred to Mr. Houghton's long career in the service, and said he was sure they would all join in wishing him many happy years to enjoy his well-earned pension. Mr. O. A. Reade, F.L.S., who is Mr. Houghton's successor as dispenser-in-charge, in supporting the toast, made an eloquent speech. Eulogising his predecessor's long and useful services he mentioned that, although he had served for a short time at Haslar with Mr. Houghton twenty-seven years ago, they had not had an opportunity of meeting again until now at the close of their service career. He referred to the long and varied experiences both of himself and his old colleague since then on many foreign stations, and expressed the great pleasure it gave him to be present that evening to do honour to his old friend. Mr. Houghton, in reply, made a very interesting speech, sincerely thanking those present for the complimentary remarks made about him. He had always endeavoured to discharge his duties faithfully. He then dwelt at length on his interesting and varied experiences extending over forty years, and said it was very gratifying to him to be retiring with all their good wishes, and that he would always treasure the remembrance of the compliment paid to him that evening. He again thanked them heartily for their very kind remarks. Messrs. Woolldridge and Davidson also contributed to the success of the evening.

Royal Institution.—An adjourned general meeting of the members of the Royal Institution of Great Britain was held on Monday, May 22, the Duke of Northumberland, President, in the chair. The following foreign scientific men were elected honorary members in commemoration of the centenary of the Royal Institution, which will be celebrated on June 5, 6, and 7:—Professor S. Arrhenius (Stockholm), Professor C. Barus (Brown University), Professor H. Becquerel (Paris), Professor G. L. Ciamician (Bologna), Professor N. Egorof (St. Petersburg), Professor A. P. N. Franchimont (Leiden), Professor A. E. Gautier (Paris), Professor H. G. Kayser (Bonn), Professor W. Körner (Milan), Mr. S. P. Langley (Washington), Professor G. L. Van der Mensbrugghe (Ghent), Professor A. A. Michelson (Chicago), Professor H. Moissan (Paris), Professor R. Nasini (Padova), Professor W. Nernst (Göttingen), Professor W. Ostwald (Leipzig), Dr. E. Solvay (Brussels), Professor R. Thurston (Cornell), Professor E. Villari (Naples), Professor J. L. G. Violle (Paris), Dr. E. Ador (Geneva), Dr. L. Bleekrode (The Hague), Professor J. S. Ames (Johns Hopkins University), Professor G. F. Barker (Philadelphia), Dr. O. Liebreich (Berlin), and Dr. W. L. Wilson (Washington).

Cricket Championship in the Drug Trade.—We understand that out of the funds kindly subscribed by the various firms (a list of which has already appeared in these columns) of wholesale druggists and manufacturing chemists, a handsome cup has been purchased, to be competed for annually by the cricket clubs of *bonâ fide* wholesale druggists and manufacturing chemists. The cup, which is inscribed "The Wholesale Chemists' and Druggists' Cricket Championship, inaugurated 1899," is on view at Messrs. Mappin and Webb, Ltd., Mansion House, E.C.

Drugs Tested at Birmingham.—Dr. Hill, medical officer and analyst for the City of Birmingham, dealt with 27 samples of drugs during 1898, a great falling-off as compared with the previous year, when 108 samples were examined. Dr. Hill attributes the decrease to the fact that the authorities were desirous of allowing chemists time to dispose of articles prepared under the direction of the 1885 Pharmacopœia, but did not state his grounds for this assumption. Seven of the samples were found to be adulterated, a higher percentage than usual. Of nine samples of compound tincture of benzoin three were adulterated. Two of the vendors were let off with a caution, but one, whose sample contained 20 per cent. of water, 25 per cent. of glycerin, and was deficient in solid ingredients to the extent of 65 per cent., was fined £1 and costs, but Dr. Hill does not state that the vendor was a legally qualified chemist. Of eight samples of tincture of rhubarb taken seven were of satisfactory quality. Four of five samples of tincture of iodine were of the correct composition, but one contained 17 per cent. of iodine in excess of the proper quantity. Only one of four samples of borax was genuine, the others being adulterated with bicarbonate of soda. A sample of pills received containing arsenic and dried sulphate of iron was not altogether satisfactory, as there was a slight deficiency of iron and the pills were not so uniformly divided as carefully dispensed pills should be. In none of these instances is it stated that the vendors of the articles were registered chemists.

Serving Unscheduled Poisons in Poison Bottles.—In the course of an inquest at Hammersmith, London, on Tuesday, concerning the death of a woman who had died through drinking spirit of salt, a qualified chemist carrying on business at Shepherd's Bush was called in reference to the selling of the spirits.—In answer to the Coroner, the witness said he remembered serving the spirits in an ordinary medicine bottle, which was brought by the customer.—The Coroner: Do you not think it very dangerous to serve such a poison in any other but a poison bottle?—Witness: If I had the option—if no bottle was brought by the customer—I should serve it in an ordinary blue poison bottle. I should refuse to serve it, for instance, in a ginger-beer bottle.—The Coroner: And there is not a red label.—Witness: But I think the word "Poison" is written on the label. As a matter of fact, though, spirit of salt is not scheduled poison, not even under Schedule B.—The Coroner: I hope that the law will soon compel

people to serve such acids in proper poison bottles. In the meantime, however, I think that chemists would do well in serving such things in blue bottles with labels marked "Poison."

SCOTTISH NEWS.

Acetylene Lamp Explosion.—An accident illustrating the need for care in the use of calcium carbide for producing acetylene gas occurred at Penicuik near Edinburgh on Saturday last. A young man, home for a holiday, had with him a bicycle acetylene gas lamp, which excited the interest of one of his brothers at home, who determined to make a similar one for household use. Procuring a perfume spray producer, he showed some ingenuity in adapting it for his purpose. When the lamp was lit there was a slight explosion, which was supposed to be due to a small leak near the top of the lamp. This having been securely closed, he determined to have a second trial. He had just retired to his bedroom for the night when the family were aroused by a violent explosion, and on the father going into his son's bedroom he found it in confusion, the lamp being blown to fragments, while his son was bleeding from severe wounds about the right eye. After being attended to by a local doctor, he was taken to the Royal Infirmary, Edinburgh, where the case was regarded as a serious one. An operation was successfully performed, and he is now progressing favourably. It is probable that the leak which was supposed to cause the first explosion really acted as a safety valve, and made the explosion slight. Probably the young experimenter did not realise that the air in the perfume bottle would take some time to squeeze itself through the orifice of the spray producer, and by prematurely applying a light the mixture of air and acetylene gas was exploded.

Messrs. Idris and Co., Limited, the well-known purveyors of table waters, have opened a depôt in Glasgow for the supplying of their Royal table waters in syphons by their own van in Glasgow and suburbs. The local agent is Mr. Charles Beckett, 1, Maxwell Street, Partick. Telephone No. 2240, Glasgow Exchange.

A Prospectus of a Company has been issued under the title "Charles K. Brown and Sons, Limited," grocers, wine merchants, whisky blenders, and general dealers, of Loanhead and Dalkeith, Midlothian, which states that "premises have been secured in a central position in Loanhead, which the directors purpose to open as a retail drug store"!

FRENCH NEWS.

Death of Professor Charles Friedel.—Professor Charles Friedel, a distinguished French chemist and a member of the Institute of France, who died at Montauban on April 20, was born in Strassburg on March 12, 1832. According to Mr. J. H. Gladstone in *Nature*, he distinguished himself greatly in his studies, and took his degree of Bachelor of Science with special honours. Desiring to follow science as his profession he went to Paris, and gained the special esteem of M. de Sénarmont, who caused him to be appointed conservator of the mineralogical collections at the École des Mines. He worked in the laboratory of the distinguished chemist M. Adolph Wurtz, also a native of Alsace, at the École de Médecine. In 1869 he became Doctor of Science; two years after he received a high appointment at the École Normale Supérieure. In 1876 he became Professor of Mineralogy at the Faculté des Sciences, at the Sorbonne; and in 1878 he received the distinguished honour of membership of the Institute (Academie des Sciences). In 1884 he took the position of his late master, Professor Wurtz, in the chair of Organic Chemistry at the Sorbonne. His merits were fully recognised in Great Britain. In 1876 he became a foreign member of the Chemical Society, and four years later he received the Davy Medal of the Royal Society. In 1894 he made one of his rare visits to England to receive the degree of D.C.L. of Oxford University, an honour which he acknowledged as a great encouragement.

Electricity Plays an Important Part already in modern warfare, but according to the Paris correspondent of the *Daily Telegraph*, war by sea or land will be impossible in the future, and the millennium prayed for by the apostles of peace may become a reality, if—and of course there is an "if"—Dr. Le Bon. who is engaged in investigating electric radiations, and also Hertzian waves, is to be believed. He is reported to have produced formidable results from a coil of fifty centimetres worked by a current of 110 volts., and he is said to believe that such investigations may lead one day to capital applications, capable of acting in an extraordinary manner on fleets and armies. If, Dr. Le Bon is represented to have said, by means of proper lenses a way be found of projecting parallel electric radiations so that they shall not lose their intensity by distance, just as we send afar pencils of luminous rays, as strong along their whole line as they are at the source, then an electrician sitting at his window could destroy a whole fleet of ironclads. This destruction, always according to the doctor, could be done simply by turning on each of the warships a jet of electric radiations. The jets or rays, on reaching the electric coils in the vessels, could create an atmosphere of sparks which would cause the shells and torpedoes on board to explode. With the same reflector and radiations explosions could be produced in forts, in artillery parks, and even in the metallic cartridge-cases of soldiers. Dr. Le Bon is stated to be an authority in physical phenomena, and has been led to make the experiments to which he refers after the discovery of the properties of electric waves by M. Branly, Professor at the Catholic Institute of Paris, and the friend of Signor Marconi, whom he is said to have aided in the wireless telegraphy undertaking.

PERSONALITIES AND BUSINESS NOTES.

[Notices are inserted free in this column, if sent by persons directly interested or otherwise properly authenticated.]

Mr. Stanley Harrington, chemist, Cork, has been elected a director of the National Assurance Company of Ireland.

Messrs. J. Lizars, photographic chemists, Victoria Street, Belfast, have moved into new premises at Wellington Place, an adjoining thoroughfare.

Mr. James B. Bolger, L.P.S.I., late of Dr. Walsh's Medical Hall, Dublin, has opened a well-stocked pharmacy at Main Street, Maryboro', Queen's County.

The Business of Mr. M. H. Griffith, 38, The Strand, Exmouth, has been purchased by Messrs. Holman, Ham and Co., of High Street and Sidwell Street, Exeter, and Fore Street, Heavitree.

Messrs. Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C., intimate that during the months of June, July, August, and September their London offices, warehouses, and wharf will be closed at 1 o'clock on Saturdays.

Mrs. Anna McDowell Congrave, wife of Dr. E. McDowell Congrave, L.A.H., Examiner to the Pharmaceutical Society of Ireland, has been returned at the head of the poll as a lady Poor Law Guardian for the Rotunda Ward of the North Dublin Union.

Photographic Dark Room.—Mr. D. L. Evans, chemist and druggist, 27, Walter Road, Swansea, intimates that there is a very commodious and complete dark room for the free use of amateurs, tourists, etc., in connection with that establishment.

Mr. W. P. C. Ashdown (with Messrs. Savory & Moore) was one of the successful candidates at the recent competitive examination conducted by the Civil Service Commissioners for three vacancies as dispensers in H. M. naval hospitals at home and abroad.

Mr. Alex. A. Adam, M.P.S., Chemist, Alyth, intimates that he has removed from his late premises in Commercial Street to 9, Airlie Street. A full stock of photographic materials is kept during the season, there is also a well-appointed dark-room for use of amateurs.

Messrs. D. and W. Gibbs, Limited, 16, Finsbury Circus, London, E.C., intimate that for greater convenience and the better working of their business generally, they are removing their office and show-rooms on May 29, to their works, on and after which date they will be glad to have all communications addressed to them at the City Soap Works, 105-107, High Street, Wapping, London.

PRACTICAL PHOTOGRAPHIC NOTES.

The Lead Intensifier, suggested first in 1876 for collodion negatives by Eder and Toth, of Vienna, has never been much in vogue for gelatin negatives, because of the enormous increase in density that it gives, and also of the difficulty of keeping the plates free from fog. Hirschfeldt, a well-known German writer, now recommends an alteration of the original formula, which he states acts excellently, and it further has the advantage that it may be used both as a reducer as well as a sensitiser. The bleaching solution is—

Lead Nitrate	40 Gm.
Potassium Ferricyanide	60 Gm.
Distilled Water	1000 C.c.

This solution, if kept in the dark, will keep indefinitely. The old method of blackening the plate was to use what photographers call "stinko," or potassa sulphurata. Now Hirschfeldt suggests re-developing with an old hydroquinone developer after thoroughly washing. If it is required to reduce the plate, it should be immersed for a few minutes in a 10 per cent. solution of sodium sulphite.

Slow Bromide Papers, which can be manipulated in gas-light or without a dark room, are at present the fashion. Velox, prepared by the Nepera Chemical Co., U.S A., and placed on the English market by Messrs. J. J. Griffin and Sons, was the first, and now their example has been followed by Marion and Co., of 22, Soho Square, and the Imperial Dry Plate Co., of Cricklewood, both of whom now advertise this class of paper. It has, of course, been known for a very long time that the ordinary ruby light of the dark room was quite unnecessary, even for ordinary bromide paper, and that a bright orange could be used. Photographic chemists have also known that it was possible to prepare silver bromide in a peculiar allotropic form, in which it was extremely insensitive to light. The idea of incorporating this form in an emulsion for practical work seems but a logical sequence of ideas, and one can only wonder that it was not done before.

The Success of Velox has induced many of the English plate and paper makers to place on the market a similar paper. The basis of all these papers is a chloro-bromide of silver emulsion, which, with a short exposure and a strong developer, will give black tones; but which, with a longer exposure and much restrained developer, will give warm tones. All this class of papers are so slow that they may be manipulated in weak daylight or artificial light without fog. As regards the speed of Velox, which was the first of the kind, we have found that, assuming the speed of a slow bromide paper, such as the Ilford slow, to be 4, the ordinary Velox is $\frac{1}{100}$, and the special Velox to be $\frac{1}{10}$, that is to say, the former is 400 times and the latter 40 times as slow as the bromide.

The Eastman Company—or as it is now termed, Kodak, Limited—has introduced a similar paper, called "Dekko." The Imperial Dry Plate Company simply call theirs slow platino-bromide. The Paget Prize Plate Company have called theirs "Gravura." All these firms issue show-cards with some very effective prints, which are certain to attract not only attention but also business.

As the Papers are Practically the Same, they may all be developed with the same developer, and the following directions given by the Paget Company for their Gravura may be used for all. The concentrated developer, which is used for black tones, which require a short exposure, that will probably be from one to two minutes at a distance of four inches from a gas-flame, is—

Hydroquinone	6 Gm.
Metol	1·5 Gm.
Sodium Sulphite (recryst.)	48 Gm.
,, Carbonate (recryst.)	60 Gm.
Potassium Bromide	0·25 Gm.
Water to make	1 litre.

Surely there is no Reason why the chloride or organic salt should not be formed by direct combination of the requisite acid and the oxide or carbonate of silver. If anyone would take up the study of this question and branch out and try some of the less known organic salts, such as the lactate, rutate, or tartrate, without excess of free silver nitrate, a printing-out paper could be made which would keep much better than any of the existing kinds, and a small fortune woul await the ucky inventor.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

May 25, 1899.

As might have been expected, business has been excessively quiet during past week, the Whitsuntide holidays, followed so quickly by the Queen's birthday, having almost brought trade in drugs and chemicals almost to a standstill. The only change of any interest which we have to report is a fresh upward movement in Quinine, for which article the speculators have been paying nearly 2d. per ounce more than the figure at which purchases could have been made about the middle of last week. Cottonseed Oil is also rather dearer, as is also Sulphate of Ammonia. Wednesday's London Bark Sales, at which only a very moderate quantity of Bark was offered, passed off with good spirit at firm to somewhat higher prices, while for Bark containing Cinchonidine the price paid per unit was much higher. We give a few quotations, as follow :—

Acetanilide.—Market is weak, the combined makers quote 11d. upwards, according to quantity, the lowest price being for 5 cwt. lots.

Acid Carbolic—Is quiet but steady at 6⅝d. to 6¾d. per lb. for 35-36° C. *ice crystal* in large drums and overcasks, smaller packing being dearer in proportion ; 39-40° C. *ice crystal* is quoted 7⅛d. to 7¼d., and the B.P. quality, viz., 39-40° C. in *detached crystals*, 8⅛d. to 8¼d. per lb. *Crude* : 60° F., 2s. 1d. per gallon ; 75° F., 2s. 7d. per gallon. *Liquid* : 95-98 per cent. of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, packed in 40 gallon casks.

Acid Citric.—Market is quiet at 1s. 4½d. to 1s. 5d. per lb., according to brand, the makers will, however, only accept orders for 5 cwt. lots, and decline to book larger orders for forward delivery.

Ammonia Compounds.—There are no changes to report with the exception that *Sulphate* is again dearer, quotations being. Grey prompt 24 per cent. London, £12 15s. to £12 17s. 6d., Hull prompt £12 12s. 6d., Leith prompt £13, Beckton not offering ; Beckton terms prompt, £12 15s. to £12 17s. 6d. per ton.

Bromides and Bromine—Are in good demand at unchanged prices.

Camphor—Unchanged both for *crude* and for *refined*.

Cinchona Bark.—At the London bark sales on Wednesday supplies were unusually small, amounting to only 555 packages of all descriptions, against 4628 packages in April last. There was a good demand, and the bulk found buyers at fully last sales' prices to some advance, the average unit being 1½d. to 1¾d , against 1½d. last sale. In the case of cinchonidine bark the unit in some instances was much higher. *Ceylon* : 245 bales offered and sold, according to analysis ; Succirubra, fine rich quilly chips, 7⅛d. ; fair to good at 3⅝d. to 4¾d. ; renewed stem chips and shavings, good at 4⅜d., fair root at 3⅝d. ; Officinalis, chips and shavings, fair to good at 5⅝d. to 6⅞d., renewed ditto 4¼d. to 6½d. *East India* : Of 10 cases and 181 bales offered 10 cases and 155 bales sold. Red, stem chips, fair at 3⅝d., renewed ditto ordinary to fair at 3½d. to 4⅜d., good druggists' quills at 5d. ; Officinalis, fair to good chips and shavings 4d. to 5⅞d., good quilly chips at 6½d. ; renewed chips and shavings, good rich at 7⅛d. to 7½d. *South American* : 36 cases and 62 bales Bolivian cultivated Calisaya quills offered and 62 bales sold, fair at 9¾d. ; 21 bales flat Carthagena offered and bought in.

CLOVES.—Privately *Zanzibar* are weak and lower prices rule, but at the reduction more active business has resulted, comprising spot, basis fair, at 3 5/16d., April-June delivery at 3¼d., Aug.-Oct. at 3 7/32, and Oct.-Dec. at 3 5/16d. No spice auctions have been held this week.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*, commercial, is quoted 10d. per gallon; while the price of the pure article varies from 1s. to 1s. 3d. per lb. according to quantity. *Benzole* very dull and weak at 7½d. per gallon for the 50 per cent., and 7d. per gallon for the 90 per cent. *Creosote*, 3½d. per gallon. *Crude Naphtha*, 30 per cent., at 120° C., 3¼d. per gallon. *Solvent Naphtha*, 95 per cent., at 160° C., 1s. 3d. per gallon; 90 per cent., at 160° C., 11d.; 90 per cent. at 190° C., 1s. 1d. *Anthracene* A, 3½d. per unit; B, 2¾d. *Pitch*, 28s. per ton, *f.o b.* *Tar*, refined, 12s. 6d. per barrel, 2d. per gallon; *Crude*, 12s. per barrel, 1⅞d. per gallon.

COCAINE.—Market has been exceedingly quiet for this article during the past few days, and while makers continue to maintain that price is very firm the absence of inquiry tends to somewhat modify this fact. Makers quote 11s. 3d. to 12s. 3d. per oz. for the *Hydrochlorate* in 25 oz. tins; second hand quoting rather less than these prices, according to quantity and brand. While everything points to the prospect of an advance in the makers' prices the future course of values must, of course, largely depend upon the question whether the demand improves or not.

CODEIA—Is firm at 12s. 3d. to 12s. 6d. per oz. for the *pure*.

COD LIVER OIL—Very quiet, there having been practically no business passing in the article during the past few days.

GALLS.—Market for *China* remains quiet but firm. *Persian* have been inquired for, and a few small sales have been made. Business has, however, been restricted by the higher prices now asked by holders. Quotations now are: *Blues*, 62s. 6d. to 65s. per cwt.; *greens*, 56s. to 57s. 6d.; *whites*, 52s. 6d. to 53s. 6d. *Smyrna* and *Morea* are quiet and unchanged.

GLYCERIN—Market is quiet for *refined* at nominally unchanged prices, while *crude* remains firm.

IODIDES AND IODINE—Are steady, at unchanged values.

MERCURIALS—Are without change at last week's prices.

MORPHIA—Is unchanged at nominally 4s. 6d. per oz. for the *Hydrochlorate powder*.

OILS (ESSENTIAL).—There has been little or nothing doing in these, with the exception of Peppermint, a small business having been done in American H.G.H., at rather lower rates, and the article closes weak at about 5s. per lb. for this brand.

OILS (FIXED) AND SPIRITS.—There are no changes of any importance to record, with the exception that *Linseed* is firm and *Cottonseed* slightly dearer, the quotations for this latter article being London crude spot £14 12s. 6d. per ton, June-Aug. £14 15s., refined spot £16 15s. to £17 5s., according to make, Hull naked refined spot £15 5s., June-Aug. £15 7s. 6d., crude spot £14 5s., June-Aug. £14 7s. 6d. *Turpentine* is rather dearer for forward delivery. The other articles usually quoted under this heading are practically without change.

OPIUM.—There has been practically no business doing in this article since last week, with the exception of *Persian*, which closes firmer at 11s. 3d. to 11s. 9d. per lb. for fine to finest, 10s. 9d. per lb. for medium, and 10s. 3d. to 10s. 6d. for common.

PHENACETIN.—Market remains quiet and weak at 3s. 3d. to 3s. 6d. per lb. for *crystals* or *powder*, according to quantity and brand, while *Bayer's* make in 1 lb. orginal bottles is held for 6s. 6d. per lb., and *Riedel's* for 5s. 6d. per lb.

POTASH COMPOUNDS—Are practically without change from last week.

QUICKSILVER—Is unchanged at £8 2s. 6d. per bottle from the importer, while secondhand quotes at 6d. per bottle less money.

QUININE.—There has been another slight flutter in this article, which closes rather quieter, with sellers at 1s. 5d. per oz. for best *German* brands, in 1000-oz lots, for August delivery, at which price business was done from second hand this morning. Makers of the favourite *German B. & S.* and *Brunswick* brands maintain their price of 1s. 6d. per oz., they are, however, at the present moment, doing practically no business, while the second hand offers at 1d. per oz. lower.

SODA COMPOUNDS—Are quiet and without change at the prices quoted in our last week's issue.

SULPHONAL.—The report as to underselling on the part of a new maker of this article, who is said to have made his appearance on this market, without being, however, willing to disclose his identity, appears to be confirmed, and the consequence will probably be a reduction in the price. Buyers will do well to confine their purchases to such brands as Bayer's and Riedel's, the makers of which, at least, are not ashamed to put their names on what they offer for sale, and we would further strongly advise our riends to restrict their purchases as far as possible, buying only from hand to mouth, and then only at the last moment.

Liverpool Market Report.

MAY 24, 1899.

AMMONIA SALTS.—*Carbonate* is dearer and very scarce, 3¼d. to 3½d. per lb. *Sal ammoniac*: 33s. to 35s. per cwt. *Sulphate* is brisk and dearer at £12 15s. to £12 17s. 6d. per ton.

BEESWAX.—Chilian has been selling at £7 5s. per cwt.

CANARYSEED.—The demand for this is better, and 75 bags of Turkish went for 25s. 6d. to 26s. per 464 lbs.

COPPERAS—Continues at 37s. per ton for Welsh, and 40s. for Lancashire.

COPPER SULPHATE.—Demand not brisk, with only a little offering at £26 7s. 6d. to £26 10s.

HONEY.—About 60 barrels of Chilian sold at 28s. per cwt. for Pile X, and 24s. 6d. for Pile I.

LINSEED.—Prices are easier, but business is in small amount. Forward lots of Calcutta, May-June and June-July, are quoted at 35s. 6d. per 416 lbs., and River Plate spot and forward at 34s.

OILS (FIXED) AND SPIRITS.—*Castor* is only in retail demand both spot and forward; Calcutta "good seconds" 2⅞d. per lb., French first pressure 2 11/16d. to 2¾d., second pressure, 2⅝d., Madras, 2¾d. per lb. *Olive*: There is not much offering, demand is small, but prices are firm at £31 to £31 10s. per tun for Spanish oils. *Linseed* is unchanged at 19s. 6d. to 20s. per cwt. *Cottonseed* is steady at 17s. to 17s. 6d. per cwt., with only a small demand. *Spirits of Turpentine* are very firm and in consequence of the short supply have risen to 38s. per cwt.

POTASH SALTS.—*Bichromate*, 3½d. per lb. *Cream of Tartar* is again considerably cheaper, being quoted at 73s. to 77s. per cwt. *Chlorate* is scarce at 3½d. to 3¾d. per lb. *Pearlashes* and *Potashes* are only nominal at 32s., and 23s. to 23s. 3d. per cwt. respectively. *Saltpetre*: refined, £22 10s. per ton; 20 bags of Karachi sold at 18s. per cwt.

SODA SALTS.—*Bicarbonate*, £6 5s. to £6 15s. per ton; *Borax*, £15 10s. to £16 per ton; *Caustic*, 76 to 77 per cent., £7 15s. per ton; 70 per cent., £7; *Crystals*, £3 per ton; *Hyposulphite* is dearer, £6 per ton; *Nitrate* is in moderate demand at 8s. to 8s. 3d. per cwt.

Manchester Chemical Report.

MAY 24, 1899.

The great Lancashire carnival which marks Whitsuntide has commenced, and to-day may be said to close business operations for the week in practically all trades and manufactures in this important district. Indeed, there has been a marked absence of business men from 'Change, and few orders, except for immediate wants, have been given. In Alkalies there is marked briskness, and prices are fully maintained. Bleaching Powder is quoted £4 2s. 6d. to £4 5s. per ton, softwood casks, on rails; and Ammonia Alkali, 58 per cent., £3 17s. 6d. to £4 2s. 6d. Sulphate of Copper is unchanged, and makers stand out for £27 to £27 10s. per ton, according to quantity, although, it is reported, £26 15s. has been paid for June delivery. Salt Cake is rather lower, varying from 26s. to 27s. per ton, in bulk, on rails. Caustic and Carbonate Potash are firm, and Brown Acetate of Lime is steadier at £4 15s. per ton, English make, and £5 American, delivered Manchester. Acetate of Soda is firm at £12 10s. to £13 10s. per ton. Yellow Prussiate is higher at 8¼d. to 8½d., with short supplies. Prussiate of Soda quoted 6⅝d. White Powdered Arsenic firm at £19 to £19 10s. per ton ex-ship, Garston. Aniline Oil quoted 4½d., and salt 4d. Green Copperas is in better request and some makers are asking rather higher figures. Glycerine continues nominal, but latest reports show that makers are asking £42 to £43 per ton naked, and £45 to £46, English chemically pure, on rails, or *f.o.b.* United Kingdom.

Newcastle Chemical Report.

May 24, 1899.

Baltic and other oversea shipments of heavy chemicals are more general. Steamers on the berth are reducing to some extent makers' stocks, particularly of Bleaching Powder and Soda Crystals. Caustic Soda and Soda Ash are a better inquiry. Sulphur keeps scarce. Sulphate of Ammonia is a strong order with few sellers. There is also a good demand for Saltcake, but not much available. Prices are :—Bleaching Powder, £5 7s. 6d. to £5 12s. 6d., according to markets. Soda Crystals, 45s. to 47s. 6d. Caustic Soda, 70 per cent., £7 to £7 5s. ; 77 per cent., £7 12s. 6d. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Sulphur, £5. Roll, £6 5s. Sulphate of Ammonia, *f.o.b.*, £12 10s. per ton.

Partnerships Dissolved.

(From the London Gazette.)

C. F. F. P. Uhlmann, Ed. Kentgen, J. Rabinovitch, and Th. Zeitz (trading as the Anglo-Saxon Mineral Water Co., 3, Nile Street, Hoxton). The business will in future be carried on by the Anglo-Saxon Mineral Water Co., Limited, at 207, Pentonville Road, London, N.

F. W. Devereux Long and B. F. F. Jackson, Physicians and Surgeons, 6, Spital Square, E.C., and 1A, Stoney Lane, Houndsditch. Debts will be received and paid by F. W. D. Long.

Arthur Robbins and John Boardman (formerly trading under the style of Rabone & Co.), Manufacturers of Barometers, Thermometers, etc., 36, Tenby Street, Birmingham. Debts will be paid by John Boardman.

Wm. Heald and James Hopwood, Dental Engineers, etc., 8, Worsley Street, Manchester. Debts will be received and paid by James Hopwood.

Obituary.

Robertson.—On May 9, John Robertson, Chemist and Druggist, Camberwell. Aged 38.

Beaven.—On May 19, George A. Beaven, Chemist and Druggist, West Cowes. Aged 70.

Harrison.—On May 19, John Harrison, Chemist and Druggist, Loughton. Aged 53.

Haley.—On May 22, Emanuel Haley, Chemist and Druggist, late of Stanningley. Aged 64.

TERMS OF SUBSCRIPTION.

The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

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ITEMS OF INTEREST.

Corking Sterilised Liquids.—The following simple method, devised by J. Eury, when sterilising organic preparations by the boiling method of Appert, of employing corks which have a hole driven diagonally from the side at about half the length, is suggestive. The cork, during the process of boiling the vessels in the water bath or steriliser, is inserted in the neck of the bottle, so that the upper aperture is above the lip, thus leaving a free vent for the passage of expanded air. When heating is nearly complete the cork is driven well home, thus covering the opening and sealing the vessel. It is well, as a precaution, to cap the top of the cork afterwards with wax.—*Repertoire* [3], **11**, 58.

A Case of Camphor Poisoning.—An instance is recorded by Berkholz (*Petersburg Med. Woch.*) of recovery of a young girl who had taken 15 Gm. of camphor, suspended in water. After washing out the stomach, chloral and potassium bromide were administered as antidotes, the cure being complete in a few days. Toxic symptoms in this case did not supervene until after the lapse of two hours, when intense cephalalgia, vomiting, convulsions, and coma supervened, the respiration being rapid and the pulse full. Recovery is attributed to the fact that before taking the dose the patient had partaken of a full meal, largely composed of carbohydrates, which may have formed in the intestines the non-toxic glyco-camphoric acid. The author recommends the use of large doses of sugar as an antidote.—*Bull. Comm.*, 27, 35.

Destruction of Locusts with Arsenic.—Pharmacists in those countries where locusts are prevalent may find of service the following notes on the destruction of these insects by means of arsenic, as given by Wilkinson in the *Natal Agricultural Journal* :—"Dissolve caustic soda, 1 lb., in boiling water, 4 gallons, and add to the boiling liquid, arsenic, 1 lb. Stir until dissolved. Keep this solution under lock and key. Take half a gallon of the mixture, add 4 gallons of water and 10 lbs. of brown sugar. Dip bag-grass, grass,or mealie stalks in the mixture and lay about among the crops, or sprinkle the mixture with a white-wash brush over growing crops. Locusts will come from a hundred yards attracted by the smell of the sugar ; they eat and die, and are eaten by other locusts, which also die." With proper precautions the mixture is stated not to be dangerous, as the amount of arsenic in the diluted solution is too small to render it poisonous to animals when applied as directed. By this means the writer states that he cleared his farm of 700 acres in ten days, employing six men to distribute the poison, and kept it clear during the season from incursions from surrounding farmers.—*Cape Agric. Journ.*, 14, 28.

Salt as a Manure for Cereal Crops.—Careful experiments have proved that salt has a very beneficial effect on the growth of wheat, barley, oats, and rye. Not only are the crops better, but it is stated that salt prevents the appearance of rust and mildew. It has been observed that wheat grown in a corner of a field which was known to be brackish was perfectly free from rust, although the growth, in another part of the same field, was badly affected with the parasitic fungi.—*Cape Agric. Journ.*, 13, 817.

Cellulith.—A product has been introduced under this name which is intended to replace horn, wood or vegetable ivory for industrial purposes. To obtain it, cellulose is finely ground in water, thoroughly disintegrated, a portion of the water is removed by filtration and pressure, and the residue put into moulds ; after drying in the air or at 40° C., the mass sets and becomes hard and close. Colouring matter, caoutchouc, or shellac in solution may be mixed with it to produce a coloured or water-proof product. *Pharm. Centralh.*, 39, 77.

Eucalyptol.—A nostrum has recently appeared in the market under the name of "Cineol," which, as proved by an examination of the Carlsruhe Board of Health, consists of a mixture of the oils of turpentine, eucalyptus, and cajeput. It is to be regretted that names of definite chemical compounds like cineol are misused in this way. Combinations (?) of eucalyptol (cineol) with the naphtols, called α- and β-eunol, are said to act as antiseptics, and have recently been recommended for use in dermatology and surgery.—*Schimmel's Bericht.*

Calendar for the Week.

Sunday, May 28.	Trinity Sunday.	Sun rises, 3.55; sets, 8.1.
Monday, May 29.		Sun rises, 3.54; sets, 8.2.
Tuesday, May 30.		Sun rises, 3.53; sets, 8.3.
Wednesday, May 31.	(10.55A.	Sun rises, 3.52; sets, 8.3.
Thursday, June 1.		Sun rises, 3.51; sets, 8.4.

Chemical Society, Burlington House, W., at 8 p.m.—The following papers will be read:—"The Hydrosulphides, Sulphides, and Polysulphides of Potassium and Sodium," by W. Popplewell Bloxam; "On the Relative Efficiency of Various Forms of Fractional Distillation," by Sydney Young, and "The Salts of Dimethylpyrone, and the Tetravalence of Oxygen," by Professor J. N. Collie and Thomas Tickle.

Linnean Society of London, Burlington House, W., at 8 p.m.—The following papers will be read:—"On the High Level Plants of the Andes as Illustrated by the Collections of Sir W. Martin Conway, Mr. Edward Whymper and others," by Mr. W. Botting Hemsley, and "On some Australasian Collenabola," by Sir John Lubbock, Bart.

Royal Institution, Albemarle Street, W., at 3 p.m.—Professor L. C. Miall, on "Water Weeds" (Lecture II.).

Friday, June 2.		Sun rises, 3.51; sets, 8.4.
Saturday, June 3.		Sun rises, 3.51; sets, 8.5.

Wholesale Chemists' and Druggists' Cricket Championship, at Bowes Park.—Kepler *v.* Hewlett's.

Publications Received.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D. Pp. xv. + 144. Price 5s. net. London: Henry J. Glaisher, 57, Wigmore Street, W. From the Publisher.

On the Study of the Hand for Indications of Local and General Disease. By Edward Blake, M.D. (Second Edition.) Pp. xvi. + 135. Price 3s. 6d. net. London: Henry J. Glaisher, 57, Wigmore Street, W. From the Publisher.

The Photo-Miniature: A Monthly Magazine of Photographic Information. No. 2, Vol. I., May, 1899. Price 6d. New York: Dawbarn and Ward, Ltd. From the Publishers.

Flora of Kent. By Frederick J. Hanbury, F.L.S., and Edward S. Marshall, M.A., F.L.S. Pp. lxxxiv. + 444, with two maps. Price 12s. 6d.; special thin paper copy, 15s. London: F. J. Hanbury, 37, Lombard Street, E.C. 1899. From the Publisher.

A Treatise on Practical Chemistry and Qualitative Analysis. By Frank Clowes, D.Sc. (Lond.). Seventh edition. Pp. xxii.+516. Price 8s. 6d. London: J. and A. Churchill, 7, Great Marlborough Street, W. 1899. From the Publishers.

Victor von Richter's Organic Chemistry, or Chemistry of the Carbon Compounds. Edited by Professor R. Anschütz. Translated by Edgar F. Smith. Third American from the eighth German edition. Vol. I. Pp. 625 (illus.). Price 15s. London: Kegan Paul, Trench, Trübner and Co., Ltd., Paternoster House, Charing Cross Road. 1899. From the Publishers.

Guide Pratique pour les Analyses de Chimie Physiologique. By Dr. F. Martz. Pp. 263 (illus.). Price 3 fr. Paris: J. B. Baillière et fils, 19, Rue Hautefeuille. 1899. From the Publishers.

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PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m on Thursdays.

OFFERED.

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Stocktaking Clearing Lines.—New 5000 cartes, the lot 15s.; 2500 cabinets, 25s.; 1000 stereoscopic, 12s.; 1000 ½ plates, 12s.; 1000 ¼ plates, 5s.; 1000 (¼ pl.) 8×6 Oxford Lines, 15s.; 1000 waterproof cabinets, dark, 15s.; 1000 "Slip in Pocket" Kodaks, 17s. 6d.; soiled, 500 assorted "Slip Ins," 15s.; 1000 each c.d.v. and cabinets, G.B.E. light colours, 25s. (lot); 1000 each ditto, dark, 30s.; 1000 ¼ plates G.B.E., 7s. 6d.—Edward Peck, East Dereham.

Microscope, splendid condition (by Steward, Strand), in mahogany case, ½, ¼, and Beck's ¼ inch objectives; cost £12 12s. What offers?—Davies, 4, Arbour Street, Southport.

Nine 2s 9d., 16 1s. 6d. White's Coca Wine; 6 3s. 6d., 8 2s. Meat-Malt Wine; half price; relinquishing licence.—Kirkness, Paignton.

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Daisy Powders, 36, 24s.; 72, 46s. 6d. Carriage paid.—Eastman, Forest Lane, Stratford.

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Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Munyon's Cures, 6s. per doz.—Eastman, Forest Lane, Stratford.

Advertisements.

(Received too-late for Classification).

QUALIFIED. 24. Engagement for month of June. White, Chemist, Baldock, Herts.

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Receiving Order in Bankruptcy.

(From the London Gazette.)

Geo. Irving, Aërated Water Manufacturer, Collier Lane, Carlisle.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Allen, Baylis, Beckett, Bougault, Burroughs, Daniel, Evans, Fleming, Haigh, Hill, Howells, Mason, Mitchell, Morrison, Nicol, Polley, Reynolds, Righton, Sidebottom, Simpson, Skinner, Smith, Snowden, Wellcome, Wright.

POLITICAL GOSSIP.

The Election of Sir George Pilkington to represent the Southport Division of Lancashire is a fitting finish to the efforts recently put forth by the chemists of that division. It would be absurd to claim that the increased Liberal majority was the result of the joint circular which the local Association issued after weighing the promises of the two candidates, but it may fairly be contended, without over-stepping the limits of modesty, that the united action of the chemists contributed not a little to the success of the candidate most likely to preserve a sympathetic attitude in relation to pharmaceutical questions. Sir George does not represent the political views of all the chemists who recorded their votes for him, and he will doubtless infer from that circumstance the intensity of their feelings with regard to the proposal to hand over their professional titles to combinations of unregistered traders. The fact that the Lord Chancellor does not, apparently, intend to proceed with his Pharmacy Bill, having merged it into the Companies Bill which has just issued from the Select Committee, rather modifies the position so far as the member for Southport is concerned, but it in no wise lessens the value of the experience gained by the registerod men of Lancashire in the gentle art of electioneering. If the local secretaries of the Society will follow the example of Mr. James Righton when they have the opportunity, the body politic will begin to move forward.

On the Company Question the various public departments and authorities, from the Board of Trade to the House of Lords, appear to be singularly undecided. As for the Lord Chancellor, he seems to be in much the same chaotic condition of mind as the suddenly elevated market porter of the once popular comic song. When the Pharmaceutical Society first initiated its campaign against the abuses of incorporation, the Board of Trade Committee met the attack with a *non possumus*. "The subject does not come within the scope of our inquiry," said the Chairman (Lord Davey). Again, when the Privy Council was approached later on, it was suggested that a Companies Bill was not the proper place to effect the necessary amendment of the law in so far as it concerned medicine, dentistry, and pharmacy, and that it should be done either by a joint Bill or by separate measures to amend the defective Medical and Pharmacy Acts. The Lord Chancellor was personally very strong on this point, and showed the trend of his mind by trying to utilise the Pharmacy Acts Amendment Bill of last session. Disappointed in that particular instance, he introduced this session the two famous Bills which quickened the pulse of pharmacy to fighting rate by the unjust differentiation between the title of the pharmacist and that of the medical practitioner. Yet, after all this, his Lordship has persuaded the Select Committee to bury his Bills in the Companies Bill. This very Committee was assailed with repeated requests for a hearing on the question, but presented a deaf—nay, a callous—ear to the appeal; it was a commercial Committee, a financial Committee of bankers and judges, and could not add to its burdens by considering such academic items as professional titles. But, unsolicited and unexpectedly, it has consented to the deposit of a slightly modified edition of the Halsbury remedies within the erstwhile prohibited precincts of the Companies Bill. Truly the way of the Lords is incomprehensible!

What is the Reason for this revolution of the weather-cock, for this modification of the Lord Chancellor's proposals as to pharmacy? As will be seen at page 513, the new clause in the reported Bill is cleverly converted to have a prohibitive meaning by substituting "No" for the initial "A" which figured in the original. The value of the clause is also enhanced by a provision for the public exhibition of the name of the qualified manager *bonâ fide* conducting a chemist's business for a company. What can those modifications indicate but the operation of external influence upon the views of Lord Halsbury? And there is some ground for the hope that, having proved accessible to reasonable representations in the direction of providing a means of identifying the registered manager of a company drug department, he may be induced to suggest the deletion of the words "and use the description" from the clause as now presented, thus preserving the titles to those who have been ascertained by examination, and declared by Statute, to be competent to bear them. Whether the modifications effected by the Lords' Committee may contain the basis for a satisfactory or, at any rate, a workable compromise is a question for the Society's Law and Parliamentary Committee, but it is well to look the recent manifestations of the views of our legislators on the subject squarely in the face. They seem to imply a perception of the anomaly created by the decision of the House of Lords in the case of the Provincial Supply Association and a desire to remove that anomaly; but—and it is a big but—*only in so far as it affects the public safety*. What is unmistakably evidenced by what has taken place in Parliament recently is that no encouragement will be given to projects for limiting the principles of commercial co-operation. What the Legislature says in effect is, "We will not listen to the proposal that a company shall not be permitted to financo and run a chemist's business, but we will consider carefully any suggestion for regulating such business." The question for chemists to consider is whether it is expedient to give heed to the voice from St. Stephen's, or whether it is wiser to go on fighting in the old way.

Apart from the Pharmaceutical Aspect of the case, the amended Companies Bill is certainly a very good measure. It differs from its original form chiefly on account of the omission of certain clauses which the Committee deemed to be too hard on the directors of a company. Instead of devising such stringent provisions that the ordinary well-meaning director could hardly expect to escape, the Committee has contented itself with a code of procedure which will only hit the dishonest director. The "guinea-pig" will no doubt exist even under the new provisions, but he will not flourish as in days of yore. The clauses in the old Bill as to compulsory publication of balance sheets have also been deleted; trade considerations having prevailed with tho Committee, who did not think it just to force a company to disclose its innermost financial working to a trade competitor. Another omission is the clause which provided that a company might be wound up on three grounds—viz, fraudulent incorporation, illegality of business, and irregular allotment of shares. It was at one timo thought that this clause might furnish the Pharmaceutical Council with a weapon against one-man drug companies, but the subject now possesses no interest.

The House of Commons signalised its return to work on Derby Day by administering a snub to the Upper House. In other words, Sir John Lubbock's Bill for providing seats for shop assistants (England and Ireland) was passed through its second stage amid cheers. It will be remembered that the Scotch forerunner of Sir John's Bill was thrown out of the Lords by Lord Salisbury some few weeks back, to the deep disgust of the House of Commons. Hence the cheers on Wednesday.

IRISH NEWS.

Company Trading in Pharmacy.—It is understood that the Irish Pharmaceutical Society's encyclical on the ethics of company pharmacy, recently issued from Mount Street to county, district, and urban councils throughout Hibernia, has received but scant courtesy at Limerick. The document duly reached, and was referred by the "civic fathers" to some of the pharmaceutical licentiates in the city for expert opinion. The latter reasoned that before the Society "pounced" upon small traders for violating the Pharmacy Act it should "wipe out" the large companies, and advised accordingly. Seeing that the circular in question is intended for the extinction of company pharmacy, and assuming that the "Limerick lads" have given it the most superficial perusal, who shall say that the Irish bull is extinct? And even the eloquence of the "Grand Old Man" from Dublin has so far been wasted in trying to bring his recalcitrant graduates to a sense of the fitness of things as he would have them to be.

Adulterated Linseed Oil.—Last week, at the Londonderry Quarter Sessions, Messrs. Maxwell Greer and Co., chemists and druggists, Derry, were sued by a local trader named McElwee to recover damages sustained by the defendants selling him a barrel of adulterated linseed oil for pure oil. Professor Leebody, analyst, deposed that the oil was mixed with 25 per cent. of mineral matter. His Honour said that meant that an oil like petroleum was mixed with the vegetable substance, and that the whole was sold as pure linseed oil. That, however, was not the fault of the defendants, who, it was proved, purchased the oil from a Liverpool firm as pure linseed, and sold it as they received it. He gave a decree for £30 with £5 witnesses' expenses, and said defendants

could follow the firm from whom they bought the oil in bulk, and sue them in turn for damages.

Dr. J. J. O'Sullivan, proprietor of the Waterford Pharmacy, has sued, at the Waterford Quarter Sessions, a patient and customer named **Townsend**, to recover money due for drugs and medicines supplied, and for medical attendance. The plaintiff having proved the debt, the defendant created much amusement by pleading that the sale of medicines was, in his opinion, quite sufficient for the plaintiff's entire services. He blamed Dr. O'Sullivan for not prescribing stimulants, and alleged that his (defendant's) nephew, a "vet.," on seeing him said the doctors were killing him. His nephew gave him several drinks of a special brand of whisky, and that cured him. His Honour gave a decree for £4.

SCOTTISH NEWS.

The Eighth Annual Sports took place at Powderhall, on Wednesday, May 24. There was a large field, and the open as well as the confined events were keenly contested. Notwithstanding the cold and unseasonable weather, there was a large number of spectators. Messrs. D. B. Dott and David McLaren acted as judges of confined events, and Mr. George Coull, B.Sc., Honorary President, presided at the distribution of prizes, which were handed to the successful competitors by Mrs. Coull. Prizes were presented by Messrs. Anderson and Co., Burroughs, Wellcome and Co., George Coull, B.Sc., Duncan, Flockhart and Co., J. H. Haywood, S. Maw, Son, and Thompson, Raines, Clark and Co., and the Vinolia Co., Ltd. The following were prizemen in the events confined to the trade :—One mile bicycle handicap: 1, W. Arres; 2, D. S. Napier; time, 2 mins. 48 secs. 300 yards flat race handicap: 1, W. Butters; 2, R. Wilson; 3, J. B. Mitchell; time, 38 secs. 220 yards flat race handicap: 1, R. G. Murray; 2, J. D. Ross; time, 24⅘ secs. Half-mile flat race handicap: 1, J. Walker; 2, R. Scott; time, 2 mins. 17 secs. Anderson challenge cup five-a-side football competition (final tie): John Mackay and Co. beat Duncan, Flockhart and Co., by 2 points to nil. The arrangements were carried through with his usual ability by the Hon. Sec., Mr. J. P. Gibb.

Aërated Water Manufacturers and the Merchandise Marks Act.—At the Falkirk Sheriff Court on Thursday, May 25, before Sheriff Bell, Robert Barr, Reid Brothers, and Nelson Brothers (Falkirk), A. G. Barr (Glasgow), and Porteous Murray (Stenhousemuir), all aërated water manufacturers, brought an action against James Haddow, bottler and aërated water manufacturer, Falkirk. The pursuers alleged that defender sold to persons carrying on business in the district aërated water in bottles to which the trade marks or names of complainers had been fixed, and that the contents were not of the manufacture of complainers, contrary to the Merchandise Marks Act. A question of relevancy was raised, which his lordship decided in favour of pursuers. Mr. Haddow then pleaded not guilty, and proof was fixed for Thursday, June 1. The agent for pursuers said defender sold aërated waters in sand-blasted bottles, but he did not admit it was an offence, and he was willing to test the case. The agent drew His Lordship's attention to a circular issued by the Licensed Trade Defence Association, advising the trade not to take delivery of waters or beers in sand-blasted bottles, and intimating that the Association had resolved to support Mr. Haddow, as the prosecution was a hardship to him and to the trade in general. He submitted to His Lordship that the circular bordered on contempt of court. The Sheriff said the circular should not have been sent out and would not help the defence. He could not, however, take judicial notice of an attempt to boycott the manufacturers who were prosecuting.

Botanical Excursion.—Last Saturday the fourth botanical ramble of the season of the students of the Glasgow and West Scotland School of Pharmacy (Mr. Barrie) took place to Clydeside. After climbing hill and dale, where over thirty different flowering plants were found, the party arrived at Mauldslie Castle, and were shown by Mr. Gorrie through the conservatories, where peaches, grapes, and figs were growing well.

Poison in Jute.—At the Dundee Sheriff Court, on May 29, an inquiry was held regarding the death of Sarah Brooks, a mill-worker, whose foot was severely lacerated by being caught in the wheels of a jute mangle, and she died seven days afterwards with symptoms of tetanus poisoning. Mr. H. J. Wilson, H.M. Inspector of Factories at Dundee, said he had taken to London a large sample of the dust from below this mangle. It was found to contain a certain amount of very fine earthy material, in which, on being carefully experimented with, tetanus spores (*Bacillus tetani*) were found in very considerable quantity. There was no record, either on the Continent or in this country, of the presence of these spores having been suspected in jute, but it seemed possible that they could be imported with the jute from Bengal. The cultivation of jute (*Corchorus capsularis*) pointed to the fact that the tetanus bacillus might be very readily developed, as the plant was grown in a very muddy soil and at a high temperature, which was particularly favourable to the growth of the organism. He thought it right to say that workers need not be too much alarmed, because out of 300 accidents in the Dundee mills last year only three resulted fatally on account of tetanus poisoning, and in all three cases the lacerations were very severe. It was evident, however, that there was in the dust from handling of jute a hitherto unsuspected poison, which would lead to greater care in the manipulation of the raw material. The jury returned a verdict of "Death from laceration of the foot and tetanus poisoning."

Selling Wine after Hours for a Sick Child.—At Hawick Burgh Police Court, on Monday, May 29, John Armstrong, licensed grocer, pleaded not guilty to selling a gill of sherry wine after 10 p.m. on Saturday, May 13. A girl said she went to Mr. Armstrong's shop on the Saturday night a little after 10 and knocked at the door twice, but got no answer. She then called through the door to Mr. Armstrong that she wanted wine for a sick child, and he then supplied it. The police spoke to her and accompanied her to her house, and then took away the wine, so that the child did not get any. They never asked to see the child.—Sergeant Henderson said they had a complaint that Armstrong was in the habit of keeping open late. It was twenty-two minutes past ten when the wine was handed out to the girl. He went to the house and found that the child was ill. He had no reason to doubt that the child was ill.—Mr. Armstrong corroborated the evidence of the girl, and handed to the Bench a doctor's certificate to the effect that the wine was ordered for a sick child. He understood it was a case of necessity.—The Prosecutor said the certificate was not admissible, as the doctor was not a witness. Even if the girl had had the doctor's line with her, that would not have done away with the offence. It was high time that doctors in the town knew they had no power to grant these certificates to get liquor after hours for their patients. If the certificates were endorsed at the police office it would be all right. He admitted it was not a bad case, but it was represented to him that Mr. Armstrong was talking about it himself and also about the conduct of the police, and he therefore decided to bring the case into public court.—Mr. William Oliver, solicitor for accused, said it had been more an act of mercy than anything else. It might or might not have been that the wine would save the child's life at the time.—The magistrate said no doubt the law had been transgressed. The accused would have to pay a modified penalty of 19s. 3d., including expenses.

FOREIGN NEWS.

An Incident of the Queen's Visit to Nice.—Mr. Nicholls, the well-known chemist to the Queen at Nice, is once again the happy recipient of a mark of kindly recognition from Her Majesty. His specialties "Circassian Cream" and "Eau de Cologne do Cimiez," are held in high esteem by the Queen and Royal Family, and it is this latter product of "The" Pharmacy of the Riviera that Her Majesty has been pleased to testify her weakness for. Be it known that the peasants hold an annual market at Cimiez in the month of April, to which they bring for sale the gourds which they grow during the year, and Her Majesty always makes a point of visiting the festin. Knowing this, Mr. Nicholls, with that keen business-like instinct for which he is remarkable, purchased the prize specimen of gourd, and had a view of the Excelsior Regina Palace (the Queen's Riviera residence) painted upon one side and the Royal Arms and the words "Eau de Cologne de Cimiez" painted upon the other. The interior of the gourd was prepared to receive two gallons of Her Majesty's favourite Cologne, which Mr. Nicholls distilled specially for her. The base of the gourd

formed a bed of roses and other fleurs de Nice, and the whole, being tastefully decorated with the blue ribbon, was conveyed and presented to Her Majesty. This thoughtful act appears to have given so much pleasure to the Queen and Princesses that Mr. Nicholls soon received a letter from Colonel Carrington informing him that he had been specially commanded by Her Majesty to express her thanks and appreciation for his very acceptable present. The sale of this specialty, so much superior to the Farina Cologne, has always been enormous, but the impetus which such a public avowal of Royal esteem must impart to it bids fair to make it unprecedented in the history of perfumes manufactured by chemists.

German Doctors Arrested.—Several doctors of Cologne and the Rhenish district have been arrested on charges of administering, in return for heavy fees, pills to conscripts, which induced cardiac symptoms, thus relieving them from military service. The death of one young soldier who took an overdose led to the discovery of the fraud. Quantities of correspondence have been seized by the authorities disclosing the fact that the doctors in question had carried on their lucrative practice for a long time past.

Doctors at the 1900 Paris Exhibition.—A doctor, writing to the editor of the Paris issue of the *New York Herald*, calls the attention of the American Commission of the coming Exposition to the fact that during the last International Exposition no kind of accommodation was made for the medical or surgical treatment of the persons employed in the Exposition nor the English-speaking visitors. He goes on to say that during the Chicago World's Fair things were managed differently, for a very efficient medical and surgical service was organised, and both the men and women employed on the grounds and the visitors who fell ill there were well looked after. In conclusion, he adds that people will expose themselves in sight-seeing at an exposition, and it would only be decent charity if there were some sort of medical aid for English-speaking people to be had during the coming Exposition. It would indeed be a capital idea to show off in connection with this some of the very clever American and English methods of hospital work, trained nurses, drugs, etc.

The Kaiser on Soap and Water.—On Sunday morning the Emperor and Empress of Germany received some eighty or more delegates to the Tuberculosis Congress in the Palace near Potsdam. The Emperor touched on a number of points of view from which the Congress might prove useful as a factor in the education of the youthful classes of the population, one of which, His Majesty said, should be the inculcation upon their minds of the value of soap and water as a preventive of disease. He especially alluded to Pears' soap as a cleanser in the strictest sense of the word. His Majesty also took the delegates into his confidence as to the efforts he himself has made on his sporting estates in Lithuania to promote better and cleanlier habits among his people. By his orders smart, warm, healthy clothing was supplied to them. There is a general feeling that, as the attention of specialists and the public has been during this Congress concentrated on the subject of cleanliness, it will be productive of good, and many delegates expressed the hope that a similar Congress may be held in London, and afterwards in Paris. Messrs. Pears have now an opportunity of cultivating a foreign royal *clientèle*, since such a notable personage as the Emperor of Germany publicly testifies to the beneficial results ensuing from the use of their soap.

Chemist Heavily Fined.—In the 10th Chamber of the Correctional Tribunal of the Seine, under the presidency of Monsieur Marmonier, judgment has been given in a case brought forward by a Madame Renault against a certain Pharmacien B——— for the incorrect execution of a prescription submitted for preparation at his pharmacy. It appears from the evidence that Madame R. sent the pharmacien a prescription for a stimulating potion for her fourteen-year-old daughter, one of the ingredients of which was anisated solution of ammonia. The pharmacien, having none ready prepared in his pharmacy, ordered his assistant to make it extemporaneously by adding a drop of ammonia and a little essence of aniseed. Instead of using a medicine dropper he simply poured it from the bottle, with tho result that the mixture contained a superior quantity of ammonia to that which it should otherwise have done. Expert exidence showed that the dose of ammonia contained in the mixture when prepared according to the prescription should be equivalent to about 5 (five) milligrammes of ammoniacal gas, whereas the amount present equalled about 1 gramme, or, in other words, about 200 times the quantity prescribed. Notwithstanding that the girl had absorbed but an infinitesimal quantity of ammonia, and that her health had in no wise suffered, Dr. Ogier maintained that an error had been committed, inasmuch as the prescription had not been faithfully dispensed. For the defence it was urged that the liqueur d'ammoniaque anisé was non-official, that at least three formulæ existed for that preparation, and that the doctor had not specified which he wished dispensed. To this the counsel for plaintiffs responded that, although the pharmacist might perhaps have been right in preparing the solution by the admixture of aniseed and ammonia, in the absence of the strict specification of either of the three known formulæ, the assistant might at least have carefully counted the drops of ammonia. Seeing that the latter had acted under the order of his employer, and presumably under his supervision, the pharmacien was considered responsible for the error, in having contravened Article 37 of the laws of July 28, 1748, relating to the faithful execution of ordonnances. Judgment was therefore passed condemning him to a fine of 500 francs (£20) and costs in addition.

ENGLISH NEWS.

Pharmaceutical Cricket.—The Pharmaceutical Cricket Club journeyed to Walthamstow on Saturday to play Messrs. Willows, Francis, Butler and Co.'s C.C. An interesting and keenly contested game resulted in a victory for Messrs. Willows' C.C. by 27 runs. The Square captain won the toss and sent in Garsed and Godolphin to open the innings. After 21 runs had been scored for the first two wickets the succeeding six men succumbed rather rapidly, only 10 runs being added during their stay at the wickets, and matters looked bad for the Square, but, thanks to the steady batting of Padwick, Greaves, and French, the score reached 76 runs ere the innings closed. On the home team going in to bat their first five wickets fell for 40 runs; then some excellent batting by Bedell and Thompson, who scored freely all round the wicket, put the issue beyond doubt. Thompson scored 17, and Bedell 42 before he was caught in the long field by Stokoe, who during the afternoon made three very fine catches. The fielding of the Square team all round was good, and Padwick secured six wickets. Scores: Willows and Co.'s C.C., 103; P.C.C., 76. P.C.C. team: Garsed, Godolphin, Palmer, Payne, Tibbit (captain), Collenette, Stokoe, Gray, Padwick, Greaves, and French.

The Name of the Seller.—The Alleged Poisoning Case at Spalding.—At the adjourned inquest held at Orby on Thursday, May 25, before Dr. Clegg, the district coroner, concerning the death of Elizabeth Bell (who, it is alleged, died from the effects of strychnine administered by her husband, Edward Bell), evidence was given by Algernon H. Molson, chemist and druggist, manager of the branch shop of "Dr." Talbot's Herbal Remedies Co., Ltd., 6, New Road, Spalding, where the poison was alleged to have been purchased. Witness stated that Edward Bell came to the shop on April 22 and purchased 2 ozs. of laudanum for toothache and 1 oz. of white mercury to poison rats. He gave the name of Bell, of Holbeach Hurn, and for reference the name of his master as Mr. Clayton, a farmer, who attended the market each week. Bell visited the shop again on April 24, and asked for another ounce of mercury. Witness was surprised, and inquired about that previously supplied, receiving the answer that eight rats had been killed by it. He supplied the quantity asked for, and then Bell requested something stronger, suggesting arsenic. Witness had none in stock, and recommended strychnine. Bell thereupon bought 60 grains, entering his name in the poison book as before. Two days later, on April 26, Bell again called at the shop and asked for poison with which to kill his dog, which, he said, had been run over. Witness refused to sell any unless the dog was brought to the shop to be poisoned. Bell said he could not do this, so witness supplied a further sixpennyworth of strychnine, cautioning Bell as to its use. The strychnine was supplied in the crystal state and not as powder, each packet being wrapped in two papers, distinctly labelled and bearing the name and address of the firm on whose behalf it was sold.—The Coroner: But not with your own name upon the label?—Witness: No, only that of the firm.—The Coroner: Then there was really no name upon the label at all, as the Register of Chemists and Druggists does not contain the name of the Talbot's Herbal Remedies Company.—Witness: We have made that alteration since then.—The Coroner: That is right. It will be better if in future you have your own name upon the labels and thus comply with the regulations

—Evidence having been given as to the manner of deceased's death, the inquiry was adjourned.——AT ANOTHER INQUEST, held before the same coroner (Dr. Clegg), at Boston, on May 22, with respect to the death of Robert Jackson (70), labourer, who died the previous Saturday from the effects of a dose of laudanum, self-administered, Charles H. Talbot, of "Dr." Talbot's Herbal Remedies Co., Ltd., referred to in the Spalding case, stated that the laudanum (2 ozs.) in question "was supplied by my chemist, who is fully qualified, and I saw it paid for."—The Coroner (examining the bottle): You know the law requires that the name and the address of the seller shall be on the bottle?—Mr. Talbot: Yes, but not in the case of a company. You see this is a company, and I keep a qualified chemist.—The Coroner: His name and address ought to be on the bottle.—Mr. Talbot: Whose?—The Coroner: The name of the seller. He sold it, and his name and address are required to be on the bottle.—Mr. Talbot: Is it required in the case of a company?—The Coroner: The name and address of the seller must be on the bottle; that is quite certain. Nobody can sell unless he is on the Register of Chemists and Druggists, and your name is not on the list.—Mr. Talbot: I did not sell the laudanum. You see it was supplied by a qualified chemist.—The Coroner: Yes, but his name and address is not here. That is what is required. Your name is on the bottle, but you are not on the list of chemists and druggists.—Mr. Talbot: No, I know I am not.—The Coroner: Therefore his name, as required by law, ought to be on the bottle.—Mr. Talbot: Thanks; I did not know that. I have two chemists employed who are qualified men.—The matter then dropped, and a verdict was returned of suicide whilst temporarily insane.

Oxford University Junior Scientific Club.—A meeting of the above Society was held at the Museum on Friday, May 26, the President in the chair. The Master of Pembroke was elected an honorary member of the Club, and two ordinary members were also elected. Mr. Burr showed some specimens of the walking-stick insect from the South of France. These belong to the Phasmidæ. The specimens found are almost always female, so that the male is somewhat rare. The result of this is that reproduction is brought about by parthenogenesis. Mr. E. H. Stapleton, St. John's, read some notes on Dulong and Petit's law. The reader distinguished between the absolute specific heat of a substance and its relative specific heat. The latter quantity he defined as being composed of the absolute specific heat + the heat required to do any internal or external work. This reasoning was applied to the gases—oxygen, nitrogen, and hydrogen—and it was shown that the value of the constant in their case was approximately 2·43. Finally the reader deduced a formula for the ratio of the two specific heats of gases, which in the case of monatomic gases did not agree with the value obtained by thermodynamical reasoning. A prolonged discussion took place at the conclusion of the paper, several members taking part. Mr. J. M. Wadmore, Trinity, then read a paper on caoutchouc. The reader did not give any account of its natural history, but dealt with it in purely its chemical aspect, He discussed its relation to isoprene and dipentene, and described syntheses of these two bodies.

Poisoning by Belladonna Plaster.—A case of poisoning by the application of a belladonna plaster is reported in the *British Medical Journal* by Dr. H. Aldersmith. He states that a clergyman procured an ordinary perforated belladonna plaster from a chemist and applied it to his back, after first rubbing the skin free with a towel. In a few hours he could not read, and was delirious all night. Next morning well-marked symptoms of atropine poisoning were displayed, and he was found by the doctor picking up "snakes" and other animals from his bed. The plaster was removed, but it was several days before the patient was able to read or do any mental work.

The St. Helen's Explosion.—The inquest on the five victims of the explosion at the chlorate refinery in Kurtz's Works, one of the large concerns taken over a few years since by the United Alkali Company, was resumed at St. Helen's on Tuesday, May 30. It will be remembered that on May 12 a fire broke out in the crystallising room containing wooden tanks used for cooling chlorate. The flames ran from tank to tank, and quickly enveloped the whole building, the fire also spreading to the roof of a house where 160 tons of chlorate were stored. A little later the chlorate exploded with terrific force just as the workers were hurrying to places of safety, and reduced to ruins the extensive buildings of the firm. The vitriol chamber in the adjoining works was wrecked, a large number of dwellings in the surrounding district were devastated, and nearly all the large plate-glass windows of the town were shattered. Two men were killed on the spot, and twenty others were removed to hospital, three of the latter proving fatal. After all the evidence had been heard, Colonel Ford, inspector of explosives, and Mr. Richmond, factory inspector, expressed the opinion that chlorate should be stored some distance from manufacturing plant. The jury returned a verdict of "Accidental death," and suggested that buildings for chlorate plant should be fireproof, that the cooling tanks should be of iron instead of wood, and that chlorate should be stored in quantities limited by Government control.

MEDICAL JOTTINGS.

The General Medical Council opened its sixty-seventh session on Tuesday, when the President, Sir William Turner, delivered an address in which, among other matters, he referred to the Lord Chancellor's Medical Bill and to the fact that the Secretary to the College of Preceptors has written concerning what he alleges to be serious errors of statement and fact in the Report of the Council's Education Committee. With regard to the efforts being made by that Committee to obtain information from a wide range of authorities on general education, it was stated that the Council would be asked to extend the period of reference so that the communications might be properly analysed and digested.

The Company Trading Difficulty was brought up at the meeting on Wednesday, when it was decided to thank the Lord Chancellor for the action he has taken with regard to the Companies (Medical Profession) Bill, and to suggest that the general term "Medical Practitioner" should be inserted in Clause 1 of that Bill, after the words "Physician, Surgeon." Apparently the Council was not aware that the Bill was already practically defunct and that the clause in question had passed into another stage of existence in the Companies Acts Amendment Bill. Indeed, in the Report of the Companies Acts Amendment Bill Committee of the General Medical Council, it is distinctly stated that "the idea of endeavouring to obtain a clause in a forthcoming Companies (Acts) Amendment Bill has been abandoned."

The Employment of Unqualified Dispensers was also under consideration by the Council on Wednesday, when various communications from the Privy Council Office were submitted—including the letters sent to the Privy Council by Mr. Arthur Oglesby, of Barnsley, and Mr. Albert Cooper, of South Kensington, in January last—and it was decided to appoint a Special Committee to deal with the matter. The Committee consists of Mr. Brown, Mr. Teale, Dr. Bruce, and Dr. Leech.

The Identification of Registered Persons and the prevention of fraudulent personation of medical and dental practitioners had been the subject of consideration by the Executive Committee since November last, and the report now submitted and received recommended that no application for restoration to the Medical or Dentists' Register should be entertained unless it be accompanied by a statutory declaration by the applicant, setting forth the facts of the case, and by a certificate from a clergyman, magistrate, or registered practitioner, vouching for the applicant's identity. It was also decided to appoint a Special Committee to consider the whole matter further.

Midwives and Spectacle-Makers also came in for a share of attention, but the Report of the Executive Committee recommended the Council to refrain at present from taking any action with regard to the Midwives Bill, and suggested that, as the Council exercises no jurisdiction over opticians, it should rest content with offering to consider any properly-substantiated charge of improper conduct made against a registered medical practitioner with reference to the subject. This report was received and entered on the minutes, but further discussion of it was adjourned.

Receiving Orders in Bankruptcy.

(From the London Gazette.)

Archibald C. Gray and Clement G. Dixey, Mineral Water Manufacturers, 21A, Pemel's Place, Queen's Road, Peckham, S.E.

Wm. R. Goodfellow, Surgeon, Roche, Cornwall.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

JUNE 1, 1899.

As might have been expected so shortly after the Whitsuntide Holidays, and with the Derby Day intervening, business has again been rather quiet this week, while there are no changes of any great importance to record. Acid Citric is dearer, as also is Quinine, in second-hand. Opium and Morphia quiet. Codeia firm. Quicksilver and Mercurials, Iodine and Iodides, Bromine and Bromides, unchanged. Castor Oil dull and easier. Shellac quiet. Permanganate of Potash rather dearer. Cod Liver Oil quiet. Glycerin, weak for the refined article. Borax and Boracic Acid quiet but steady; same may be said of Cream of Tartar and Acid Tartaric. Sulphate of Ammonia has relapsed somewhat from the high prices lately reached. Petroleum dearer. Sulphonal remains in a somewhat uncertain position. Phenacetin and Acetanilide weak. The makers still prophesy higher prices for Cocaine, but so far the advance has not taken place. The following are ruling prices for some articles of principal interest:—

ACETANILIDE.—Very dull and weak at 11d. to 1s. 2d. per lb., according to quantity.

ACID BORACIC.—*Crystals* are quoted 25s. and *powder* 27s. per cwt.

ACID CARBOLIC—Is steady and in good demand at unchanged prices, viz: 35-36° C. *ice crystal*, in quantity and bulk packing, 6⅝d. to 6¾d. per lb.; 39-40° C. *ice crystal*, 7¼d. to 7½d. per lb.; and 39-40° C. *detached crystal*, which is the B.P. quality, 8¼d. to 8½d. per lb. *Crude*: 60° F., 2s. 1d. per gallon; 75° F., 2s. 7d. per gallon. *Liquid*: 95-98 per cent., of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, in 40-gallon casks.

ACID CITRIC.—Makers have advanced their price to 1s. 6d. per lb. for *crystals* in 5-cwt. casks, but will only sell moderate quantities for early delivery even at this figure, refusing to sell at all in larger quantity or for forward delivery.

ACID TARTARIC.—*English* spot, 1s. 1d. per lb., delivered here; *foreign*, 1s. per lb., *c.i.f.*

AMMONIA COMPOUNDS.—*Bromide* is unchanged at 2s. 2d. per lb. *Carbonate*, 3d. to 4d. per lb., according to make, quantity, and packing. *Muriate*: Chemically pure, 30s. to 32s. 6d. per cwt.; commercial, free from metals, 25s. 6d. to 27s. 6d. per cwt. *Sal ammoniac*: Sublimed firsts, 35s. per cwt.; seconds, 33s.; crushed, for batteries, 2s. per cwt. dearer. *Sulphate* dull and easier; gray, prompt, 24 per cent., London, £12 15s. to £12 17s. 6d. per ton; Hull, prompt, £12 10s. to £12 11s. 3d.; Leith, prompt, £12 15s.; Beckton not offering; Beckton terms, prompt £12 15s. to £12 17s. 6d. *Sulphocyanide*, 1s. 1d. to 1s. 2d. per lb., according to quantity.

ANTIMONY.—*Regulus* is quoted £39 per ton, while *Crude Japan* (*Black Sulphide*) is quoted £24 to £24 10s. per ton, landed terms.

ANTIPYRINE AND PHENAZONE—Are without change. The makers of *Dr. Knorr's Antipyrine* appear to quite control the market both for this article and for its cheaper equivalent, viz., *Phenazone*.

ASHES.—*Potashes* are quoted 23s. 6d., and *Pearlash* 30s. 6d.

ATROPINE.—Makers are firm in view of scarcity and dearness of good raw material; present prices are 15s. 6d. per oz. for the *Sulphate B.P.*, and 17s. 10d. per oz. for the *Pure Alkaloid*.

BELLADONNA ROOT.—Really good root is scarce, and small sales have been made at 42s. 6d. to 45s. per cwt. for spot delivery.

BORAX—Quiet but steady at 16s. per cwt. for *crystals*, and 16s. 6d. per cwt. for *powder*.

BROMINE AND BROMIDES.—*Bromine* is steady and unchanged at 2s. 2d. per lb. in case lots (60 lb. 1s.), 10½d. per lb. for *Potass. Bromid.*, 2s. 2d. for *Ammon. Bromid.*, and 2s. 1½d. per lb. for *Sodii. Bromid.*

CAMPHOR.—*Crude* is quiet and unchanged, there being no business passing. For arrival *China* is quoted 122s. 6d. per cwt., and *Japan* 127s. 6d. per cwt, *c.i.f.* The market for *refined* is unchanged, the *English* makers quoting 1s. 8d. per lb., and the *German* makers 1s. 8¼d. per lb. for *Bells* in 1-ton lots.

CASTOR OIL—Remains flat. *Belgian* first pressing is quoted £25 per ton, second pressing £22 10s. per ton, ex wharf. Hull manufactured, £23 to £24 10s. per ton in barrels, 2¾d. to 2 15/16d. per lb. in cases, ex wharf, London, for prompt delivery. London, pressed, 23s. 6d. to 24s. 3d. per cwt. in barrels. *French*, 25s. to, 25s. 9d. per cwt.

CHLORIDE OF LIME (BLEACHING POWDER)—Unchanged at £6 per ton for *English* make.

CLOVES.—Privately, the market for *Zanzibar* is quiet; near position easy, but distant steady. Business done comprises April-June delivery at 3⅛d. to 3 3/32d., and Oct.-Dec. at 3¼d. No spice auctions have been held this week.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*, pure, 1s. 2d. to 1s. 3d. per lb. according to quantity and packing; commercial, 10d. per gallon. *Benzole* rather lower at 7½d. per gallon for the 50 per cent., and 7d. per gallon for the 90 per cent. for prompt delivery. *Creosote* 3½d. per gallon. *Crude Naphtha*, 30 per cent. at 120° C., 3¼d. per gallon. *Solvent Naphtha*, 95 per cent. at 160° C., 1s. 3d. per gallon; 90 per cent. at 160° C., 1s.; 90 per cent. at 190° C., 1s. 1d. per gallon. *Anthracene* A, 3½d. per unit; B, 2¾d. per unit. *Pitch*, 28s. per ton, *f.o.b.* *Tar*, refined, 12s. 6d. per barrel, 2¼d. per gallon; *Crude*, 12s. per barrel, 2d. per gallon.

COCAINE.—So far there has been no change in makers' price of this article, which remains at 11s. 3d. to 12s. 3d. per oz. for the *Hydrochlorate* in 25-oz. tins. There are, however, still sellers from second hand at somewhat below the lower of above figures. *Crude Cocaine* is reported to be very scarce and dearer, and everything would appear to point to the probability of an advance in price of the *refined* article.

CODEIA.—Market is firm at 12s. 3d. to 12s. 6d. per oz. for the *pure* and 1s. per oz. less for the *Muriate*, *Sulphate*, and *Phosphate Salts*.

COD-LIVER OIL—Is quiet at about 57s. 6d. to 60s. per barrel, according to brand, for best new non-congealing *Norwegian* oil in tin-lined barrels of 25 gallons. It is thought that prices have now touched about lowest, and that we may shortly see some reaction, especially in view of the very low figure which the article has now reached.

CREAM OF TARTAR—Is quiet at 73s. per cwt. for first white *crystals* and 75s. to 76s. per cwt., according to percentage, for *powder*.

ESSENTIAL OILS—Remain exceedingly quiet. *Star Aniseed* is quoted on the spot, sellers, 5s. 9d. per lb., and 5s. 7½d. per lb., *c.i.f.*, for May-June steamer shipment. *Japan Peppermint* is quoted 3s. 2d. per lb., *c.i.f.*, for dementholised, for June-July steamer shipment.

GALLS.—*China* quiet but firm. *Persian* are also firm, with, however, rather less demand for blues. Greens are scarce and in request, but high prices asked by holders check business. *Smyrna* are in moderate supply, blues having been sold at 57s. 6d. per cwt.

GLYCERIN.—*Crude* is steady and fairly firm at about £29 to £30 per ton for the quality most suitable for refining purposes, while *refined English* is quoted 48s. 6d. to 50s. per cwt., and *German* 52s. 6d. to 55s., according to quantity and make, for the best white double-distilled chemically pure 1260° quality in tins and cases (2 or 4 × 56 lb. tins in a case).

IODINE AND IODIDES.—*Iodine* is unchanged at 7½d. per oz. for the commercial quality, while *Iodides* are unchanged at 10s. 6d. per lb. for *Potass. iodid.*, 11s. 10d. per lb. for *Sodii iodid.*, 14s. 6d. per lb. for *Ammon. iodid.*, 12s. per lb. for *Iodine resublimed*, and 13s. 10d. per lb. for *Iodoform cryst.*, *pulv.*, and *precip.*

MENTHOL—Is quiet at 7s. to 7s. 3d. per lb. for good white dry crystals on the spot, while for June-July steamer shipment from Japan the article is quoted 7s. per lb., *c.i.f.*

MERCURIALS—Are firm at unchanged prices, say 2s. 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive sublimate*.

MORPHIA—Is steady at 4s. 3d. to 4s. 6d. per oz., according to quantity, for the *Hydrochlorate Powder*.

NITRATE OF SODA—Quiet but steady at £8 7s. 6d. per ton for *refined*, and £8 per ton for the ordinary commercial quality.

OILS (FIXED) AND SPIRITS.—*Linseed*: Market is somewhat quieter; London spot pipes, £19 10s. to £19 15s. per ton; barrels, £19 15s. to £20; June-August, £19; September-December, £18; Hull, spot, naked, £18 10s.; June-August, £17 15s.; September-December, £16 15s. *Rape* firm; ordinary brown spot, June-August and September-December, £21 5s.; refined spot, £22 10s. to £22 15s.; Ravison, naked, spot, June-August and September-December, £17 5s. *Cotton* quiet; London crude, spot, £15 5s.; June-August, £15 10s.; refined, spot, £16 10s. to £17s. 5s., according to make and packing. Hull, naked refined, spot, £15 2s. 6d.; June-August, £15 7s. 6d.; November-April, £13 15s.; crude spot, £14 2s. 6d.; June-August, £14 7s. 6d. *Olive*: Mogador, £30 to £31 per ton; Spanish, £30 to £32. *Cocoanut* steady; Ceylon, spot, £25 15s., landed; June-July, £24 2s. 6d., *c.i.f.*; Cochin, spot, £29, landed; near at hand, £26 15s., *c.i.f.*; April-May shipment, £26 10s.; August-October, £26 2s. 6d., *c i f.* *Palm Oil* rather dearer, Lagos on spot being quoted £24 10s. per ton. *Lubricating*: Pale American, 5s. 6d. to 7s. per gallon; dark, 5s. to 5s. 9d.; pale Russian, 5s. 9d. to 8s.; dark, 5s. 6d. to 5s. 9d. *Turpentine* easier; American on spot is quoted 33s. 3d. per cwt.; June, 31s. 3d.; July, 28s. 9d.; September-December, 27s. 9d., Jan.-April, 1900, 28s. 4½d. per cwt. *Petroleum* firm; Russian, spot, 5⅛d. per gallon, Sept.-Dec., 5¼d.; American, spot, 5½d., Sept.-Dec., 5⅝d.; water white, 6⅝d. to 6¾d. on spot, and 6⅞d. per gallon, Sept.-Dec. *Petroleum Spirit*: American, 9d. per gallon; deodorised, 9¼d. to 9½d. per gallon.

OPIUM.—There has been a fair demand for manufacturing kinds, and a moderate business has been done at steady rates. There have also been some small sales of *soft shipping* kinds at a shade easier prices. *Persian* has been in good request, and quite full prices have been paid for really fine quality.

OXALIC ACID—Is quoted 3⅛d. to 3¼d. per lb. nett, free delivered London.

PARAFFIN WAX.—*Crude* is quoted 1¾d. to 2d. per lb., and *refined* 2¼d. to 3d. per lb.

PHENACETIN—Weak. With much pressure to sell on part of makers and their agents, a reliable quality, both *crystals* and *powder*, can be bought at 3s. 4½d. to 3s. 9d. per lb., according to quantity.

PITCH.—8s. to 8s. 6d. per cwt.

POTASH PERMANGANATE.—It looks as if this article were going decidedly better. Not only has the pressure of manufacturers competing for orders one against the other to a great extent ceased, but one maker has raised his price to 57s. 6d. per cwt. for *small crystals*, and 62s. 6d. per cwt. for *large crystals* in 1-cwt. kegs. There are, however, still sellers at below these figures, say at 52s. 6d. to 53s. 6d. per cwt. for quantity, ex-wharf, London, in 1-cwt. kegs.

POTASH COMPOUNDS.—*Bicarbonate*, 32s. 6d. to 35s. per cwt. *Bichromate*, 3½d. per lb. *Chlorate*, crystal 3¼d. per lb., powder 3⅞d. per lb. spot London. *Permanganate*: One maker has advanced price to 57s. 6d. per cwt. for the small crystals in 1-cwt. kegs; there are, however, still other sellers at a somewhat lower figure.

PRUSSIATE.—Yellow *English*, 8d. to 8¼d. per lb., while Beckton make is quoted at 7¾d. to 8d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

QUICKSILVER—Is steady at £8 2s. 6d. per bottle from first hand, and 6d. per bottle less from second hand.

QUININE.—Makers' price for best German *Sulphate* remains unchanged at 1s. 6d. per oz. for 1000-oz. lots, in 100-oz. tins, while the speculative market has hardened to 1s. 4½d. per oz. for spot, and 1s. 5¼d. for August delivery, at which price some of the speculators who bought at 1s. 3¼d. per oz. have been realising, so as to make sure of at least a modest profit. To-day there are buyers at 1s. 5¼d. for August, and few sellers.

ROSIN.—Strained on the spot is quoted 4s. 4½d. per cwt. ex wharf; July-Dec. shipment per sailing vessel, 4s. 1½d. *c.i.f.*

SANTONINE.—It is thought that we may very likely see an upward movement in this article, present price being exceedingly low, viz., 4s. 2¾d. to 4s. 10d. per lb., according to quantity.

SHELLAC—Has been in very moderate demand with but few small sales at about late rates. For arrival 500 cases TN *Orange* have changed hands at 65s. per cwt., *c.i.f.*, for October-December shipment, and there are still sellers at this figure. The speculative market is quiet but fairly steady. For August delivery 300 cases TN have been sold at 70s. 6d. per cwt. At Wednesday's auctions supplies were small, notwithstanding an interval of three weeks. The demand was slow, and only a small proportion found buyers, *Second Orange* at about 1s. decline on last sales' rates, value of fair TN now being 67s. to 68s. *Garnet* all withdrawn. *Button* was all bought in above values. A total of 435 cases offered, comprising 133 cases *Second Orange*, of which 75 cases sold, fair flat free at 67s., bronzy red cakey at 65s., with one lot at 66s.; 102 cases *Garnet* withdrawn, fair ruby at 66s., common weak at 55s. to 57s., also 200 cases *Button*, fair palish tongue, at 85s., cakey ditto at 82s. 6d., more or less blocky BL1, ordinary to good, at 75s. to 85s., BL2 at 69s., and circle 2's at 65s. per cwt.

SODA COMPOUNDS.—*Crystals*: Barrels, 55s.; bags, 52s. 6d. per ton, ex-ship Thames. *Ash*, £5 to £5 10s. per ton, according to percentage, packing, etc. *Bicarbonate*: Commercial, 97 per cent., £7 12s. 6d. to £8 per ton; fully bicarbonated, 19s. to 20s. 6d. per cwt. *Bichromate*, 2¾d. per lb. *Caustic*: White, 70 per cent., £7 10s. per ton; 60 per cent., £6 10s. per ton. *Hyposulphite* (*Antichlor.*) is rather firmer at 6s. 6d. to 8s. 6d. per cwt., according to make, quantity, and packing. *Iodide*, 11s. 10d. per lb. *Nitrate*: Refined, £8 7s. 6d. per ton; commercial, £8 per ton.

SUGAR OF MILK—Is reported to be much firmer at 57s. 6d. to 60s. per cwt. for best to very finest *American*, in *powder*.

SULPHATE OF COPPER—Is firm at £25 10s. to £26 15s. per ton, according to make and for spot delivery.

SULPHONAL.—The two chief makers maintain their price of 17s. per lb. for both *crystals* and *powder*. There are, however, still second-hand sellers in the market at about 3s. per lb. below this figure. While the question whether other makes are being offered does not appear to be definitely settled, it is more than suspicious that such quantities of the article appear to be still available months after the advance to 17s. per lb. Buyers will do well to bear in mind the advice given last week—to only cover their requirements strictly from hand to mouth.

TAR.—*Stockholm*, 26s. 6d. per cwt. *Archangel*, 20s.

TURMERIC—Has been slow of sale. In auction of 139 bags *Madras* only sixteen bags sold, subject to holders' approval, at 16s. to 17s. 6d. per cwt. for good bright whole bulbs, remainder being bought in; good bright finger at 30s. to 32s. 6d.; rather dull bulby finger at 25s. Of 219 bags *Cochin* only 20 bags were sold: rough dark whole bulbs at 10s. per cwt.; remainder bought in at 18s. per cwt. for rough dark finger, and 9s. per cwt. for fair split bulbs.

Newcastle Chemical Report.

MAY 31, 1899.

More Baltic shipping order being now in operation, together with a better general business, heavy chemicals are now moving with more freedom. Bleaching Powder is particularly steady against a good demand. Sulphur still scarce. Quotations are:—Bleaching Powder, £5 7s. 6d. to £5 12s. 6d. Soda Crystals, 45s. to 47s. 6d. Caustic Soda, 70 per cent. basis, £7. Soda Ash, 52 per cent., £4 5s. Alkali, 52 per cent., £5 5s. Sulphur, £5 per ton.

Liverpool Market Report.

MAY 31, 1899.

AMMONIA SALTS.—*Carbonate*, 3¼d. to 3½d. per lb. *Sal ammoniac*, 33s. to 35s. per cwt. *Sulphate* is dearer: £12 17s. 6d. to £13 per ton.

BEESWAX.—45 sacks of Chilian sold for £7 2s. 6d. to £7 5s. per cwt., and 10 packages of Gambia at £6 15s.

CANARYSEED—Enjoys an increasing demand. 1100 bags of Turkish sold at 25s. 6d. to 26s. 6d. per 464 lbs., and 28s. 6d. to 29s. 6d. is now asked.

CARNAUBA WAX.—80 bags went for 43s. per cwt.

GINGER.—About 800 bags of Sierra Leone changed hands at 17s. 6d. to 17s. 9d. per cwt. on the spot. In transit several lots sold for 16s 6d. to 17s. 6d. per cwt.

KOLA NUTS.—12 bags of dried made 1d. per lb.

LINSEED—Is quiet but steady as regards spot parcels. Sales of 1555 bigs River Plate "feeding" at 35s. 9d. to 36s. 9d. per 416 lbs. To arrive, 36s. 6d. per 416 lbs. is asked for Calcutta (May-June), and 34s. 6d. per 416 lbs. for River Plate.

OILS (FIXED) AND SPIRITS.—*Castor* are very quiet and are not selling to any extent either spot or forward. Calcutta 2⅞d. to 2⅞d. per lb., French 1st pressure 2⅞d. to 2¾d. per lb., 2nd pressure

2⅝d., and Madras 2¾d. *Olive* is steady at £31 to £32 per tun. *Linseed* is firmly held at the higher rate of 20s. 3d. to 20s. 6d. per cwt. for Liverpool makes in export casks. *Cottonseed* is steady, with a moderate trade passing at 17s. to 17s. 6d. per cwt. *Spirits of Turpentine* have dropped to 36s. 6d. in consequence of arrivals, but supplies are still short, and lots to arrive in a month are quoted at 35s.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate* is very scarce at 3½d. to 3¾d. per lb. *Cream of Tartar* is quiet at 73s. to 77s. per cwt. *Potashes* are slightly firmer at 23s. 3d. per cwt. *Pearl-ash* is very quiet at 32s. per cwt. *Saltpetre*, refined, £22 10s. per ton, Karachi ex-store selling at 18s. 3d. per cwt.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Borax* quiet; £15 10s. to £16 per ton. *Caustic*, 76 per cent. to 77 per cent., £7 15s. per ton, 70 per cent. £7. *Soda crystals*, £3 per ton. *Hyposulphite* still dear and scarce at £6 per ton. *Nitrate* is quiet at 8s. to 8s. 8d. per cwt.

Manchester Chemical Report.

May 31, 1899.

The market has scarcely recovered its wonted elasticity after last week's festivities, but so far as can be ascertained a fair business is passing locally, both in heavy chemicals and drysalteries. Sulphate of Copper is still in request, and without change in price at £27 and £27 10s. per ton, best brands, delivered Manchester. Glycerin is about the same as last week, and there is great competition for the few orders being given out. More attention is being paid to Chlorate of Potash, and this article is fractionally higher. In Coal Tar products there is no animation, except perhaps of Pitch and Creosote. Of Pitch, there continues a fair export from Manchester, and makers stand out for full rates. Brown Acetate is a trifle firmer at £4 17s. 6d. per ton Welsh, and £4 17s. 6d. to £5 for American, Manchester. Green Copperas continues firm at last week's rates, and it is evident that, although the import of the Welsh article is large for sewage-cleansing purposes, it is affecting the better-made Lancashire article by diverting it for export requirements. White Sugar of Lead is dull at £23 10s. to £24 per ton, *c.i.f.* Acetate of Soda is easy at £12 10s. to £13 per ton, according to quantity, on rails, or *c.i.f.* Arsenic is unchanged at £19 10s. to £19 15s. per ton, ex-ship Garston. Yellow Prussiate is firm at 8¼d. to 8½d. The oil trade is brisk, and two vessels have arrived during the week with about 1,600,000 gallons of oil.

PERSONALITIES AND BUSINESS NOTES.

Mr. Roberts, chemist and druggist, Ellesmere Port, has just had his shop completely fitted up by Messrs. Ayrton and Saunders, Liverpool. The pharmacy is now a very handsome one.

Mr. George P. Gibson, chemist and druggist, 12, West Church Street, Buckie, intimates that he has a dark room for amateur photographers and keeps a stock of photographic materials.

Mr. Johnston, medical storekeeper, Jamaica, has been appointed to act as Island and Agricultural Chemist in the room of Mr. Francis Watts, Government and Agricultural Chemist, and will be assisted by Mr. E. J. Storey, B.A. Mr. Watts has left Jamaica to take up an appointment as Agricultural Chemist under Dr. Morris, C.M.G. At Barbados he will meet Dr. Morris, and after a stay of about a fortnight he will proceed to Antigua.

Mr. Reuben Hird has bought the business known as the Bishop Hooper Pharmacy, 52, Westgate Street, Gloucester, formerly carried on by Mr. T. C. Beach, chemist and druggist.

Mr. Edward Brindle, chemist and druggist, Edinburgh, has removed to larger premises at 190, Morrison Street.

Messrs. Gibbons' Old-established Business has been removed from 41, Market Street, Manchester, to King Street, and the place which knew the Royal Arms beyond the memory of the "oldest inhabitant" will know them no more.

Messrs. Hayes, Conyngham, and Robinson, Limited, pharmacists, Dublin, have acquired new premises in Henry Street, and will shortly open a high class drug and chemical concern therein.

Trade Notes.

The "Spiral" Flycatcher.—Messrs. Kay Brothers, Ltd., St. Petersgate Mills, Stockport, submit a specimen of a novelty in the form of a spiral flycatcher. It is compact, simple, clean, and easy to handle, consisting of a small closely-wound spiral containing 3 feet of catching surface, covered with a non-poisonous sticky material, and hermetically sealed in a short (1½ in.) tube. By simply pulling out one end, the spiral is elongated and forms an effective flycatcher. A patent has been applied for, and as the article is sold at 1d. it should command a ready sale.

The "Kozie" Grease-Proof Ointment Cover.—Messrs. S. Maw, Son, and Thompson, 7 to 12, Aldersgate Street, London, E.C., submit specimens of a new thing in ointment covers, which is certainly the neatest and best article of the kind ever introduced, and will doubtless be found very useful by dispensers. It is probably the experience of every pharmacist that the old method of dispensing ointments, etc., in covered pots occasions a great waste of time, and is, at the best, inelegant. The trouble of cutting and trimming the necessary grease-proof paper is particularly annoying at busy moments. By the invention of the "Kozie" ointment covers all this trouble, annoyance, and delay are entirely avoided. They are always ready for use, require no cutting or trimming, and give a dainty finish and elegant appearance hitherto unattainable. They are made of the finest quality grease-proof paper, and are fashioned exactly to fit the dispensing pots generally in use. The covers are equally suitable for pomades, cold creams, tooth pastes, powders, etc. A little adhesive solution applied to the shoulder of the pot will render the covering air-tight as well as grease-proof. The covers are supplied in boxes containing two gross assorted, ½, 1, 1½, and 2 oz., or in single gross boxes of any of the above sizes at 1s. 6d. per gross. Customers' names (limit twenty letters) embossed on each cover in quantities of not less than six gross assorted, at 6d. per gross extra. Large users can have special sizes and shapes made by arrangement.

Obituary.

Williams.—On May 16, Thomas Williams, Chemist and Druggist, late of Llandudno. Aged 69.

Lawson.—On May 22, Edward James Lawson, Chemist and Druggist, Tottenham. Aged 48.

Crowther.—On May 24, Arthur Crowther, Chemist and Druggist, Hull. Aged 43.

Smith.—On May 26, Alfred James Smith, Chemist and Druggist, Devonport. Aged 60.

Publications Received.

An Introduction to the Study of Materia Medica. By Henry G. Greenish, F.I.C., F.L.S. Pp. xxi. + 511, with 213 illustrations. Price 15s. London: J. and A. Churchill, 7, Great Marlborough Street, W. 1899. From the Publishers.

Aids to the Analysis of Food and Drugs. By T. H. Pearmain and C. G. Moor, M.A., F.C.S., F.I.C. Second edition. Pp. 206. Price 3s. 6d. 1899. Also Aids to the Treatment of Diseases of Children (Medical). By John McCaw, M.D., L.R.C.P., etc. Second edition. Pp. 241. Price 3s. 6d. London: Baillière, Tindall & Cox, King William Street, Strand. 1899. From the Publishers.

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Calendar for the Week.

Sunday, June 4. 1st after Trinity. Sun rises, 3.49; sets, 8.7.

Monday, June 5. Sun rises, 3.48; sets, 8.8.
ROYAL INSTITUTION, Albemarle Street, W., at 5 p.m.—General Monthly Meeting (Centenary Day).

Tuesday, June 6. Sun rises, 3.48; sets, 8.9.
ROYAL INSTITUTION, Albemarle Street, W., at 3 p.m.—Commemoration Lecture by Professor Lord Rayleigh, followed by an Evening Reception by the Lord Mayor.

Wednesday, June 7. Sun rises, 3.47; sets, 8.10.
PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, W.C.—Meeting of Council at 11 a.m.
BRITISH PHARMACEUTICAL CONFERENCE, 16, Bloomsbury Square, W.C.—Meeting of the Executive Committee at 4.30 p.m.
ROYAL INSTITUTION, Albemarle Street, Piccadilly, W., at 9 p.m.—Commemoration Lecture by Professor Dewar.

Thursday, June 8. ☾ 6.21 M. Sun rises, 3.47; sets, 8.11.

Friday, June 9. Sun rises, 3.46; sets, 8.12.

Saturday, June 10. Sun rises, 3.46; sets, 8.13.
WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP, at Brockley.—Stevenson & Howell's *v.* Kepler.

Advertisements.

(Received too late for Classification).

MANAGER. ASSISTANT. Qualified. 29. 13½ years' all-round experience. Disengaged June 27th. R., 16, Cavendish St, Ramsgate.

CAPE TOWN.—Qualified ASSISTANT wanted for first-class Chemist's Business. Not over 26 years of age. Thoroughly steady, quick and accurate dispenser. 2nd class passage paid; 3 years' agreement to be signed. Room supplied, but not board. Salary, 1st year, £12; 2nd year, £13 10s.; 3rd year, £15 per month. In addition to above, small commission on business done will be paid to good man. Apply to MEDICUS, c/o John Murdoch & Co., 52, Leadenhall St., London.

NATAL.—Qualified ASSISTANT wanted for Durban on 3 years' agreement. 2nd class passage paid. Salary, £14 per month 1st year, £15 2nd year, £16 3rd year. Apply, with particulars of experience, to G. H., "Pharm. Journal" Office, 5, Serle St., London, W.C.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Pharmaceutical Journal posted every Monday morning, 5s. per year.—Lloyd, Chemist, Lewes.

Complete Soda-Water Plant, by Hayward & Tyler; soda-water machine, 2-in. pump, gasometer, new generator, capable of 500 doz. per day; suit beginner; used one season; requiring larger, reason for selling.—"Crown" Drinks Co., Bridgwater.

Superfine Oil Lemon, 10 lbs. Copper, 22s. 6d.; sample pound, 3s.—Moss, Chemist, Chorley.

Bismuth Subcarb., 5s. 3d. per lb., 4 lbs. £1; Iodoform Precip, 13s. per lb.; Saffron, 2s. 6d. per oz., 4 ozs. 9s.; Cocain. Hydroch., 11s. per oz. Offers wanted for 20 ozs. ditto, and for 2×25-oz. tins Quin. Sulph, B.P., and for 36 Carter's Nerve Pills; 36 Munyon's, 22s. 6d.; 72, 43s. 6d.; 36 Daisies, 24s.; 72, 46s. 6d. Carriage paid for cash.—Eastman, Forest Lane, Stratford.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Addiscott, Alcock, Austerberry, Beale, Bellkidd, Belsher, Blakiston, Cohen, Cubley, Cummings, Gibson, Green, Hanbury, Hardy, Happold, Hill, Hird, Jepson, Jones, Ling, Long, Murray, Nightingale, Plenderleith, Thursfield, Young.

POLITICAL GOSSIP.

Edinburgh has Lost Two of its Four Members during the past week. On the 2nd inst. the member for South Edinburgh—Mr. Robert Cox, of Gorgie Mills—died after a prolonged illness, and four days later his colleague Dr. R. Wallace, who represented the Eastern portion of the city, expired with dramatic suddenness almost in the House of Commons itself. The two vacant seats cannot be regarded as safe ones for either political party, and we feel sure that the chemists of the respective constituencies will take note of the fact and use the knowledge advantageously. East Edinburgh was last won by a Radical majority of 449, whilst the Southern Division returned a Unionist member by the meagre margin of 97 votes. There are possibilities in this evenly balanced condition of political opinion, and the example of Southport may be commended to the registered persons of Edinburgh. Naturally, one will not expect the little errors of judgment with which the Lancashire chemists have been charged in some quarters to be perpetrated by Scottish pharmacists.

The Law and Parliamentary Committee of the Council has been giving the amended Companies Bill earnest attention, and has fully resolved to oppose the clause relating to pharmacy, as strenuously as it had previously resolved to resist the Lord Chancellor's Pharmacy Bill. As the President stated in effect in Council, the position has not been materially changed by the latest trick of the quick-change artistes of the Upper Chamber, and there is thus no reason for the Council to modify its attitude in relation to the company question. The Council has further decided, on the recommendation of its Parliamentary Committee, to keep the pharmaceutical powder dry until the Bill reaches the Commons. The wisdom of this policy of watching and waiting may be, and most probably will be, challenged, and that, too, by those whose experience and judgment invest their opinions with a real value. But of what use is the ripest experience or the soundest judgment apart from the facts to work upon? The Council knows all the facts of the case, whereas individual members of the Society can only know a portion of them; hence when the Council asks the members to take the signal for action only from headquarters, it is not only loyal to obey, but it is good logic, and good business into the bargain.

The Woes of the M.P. were humorously alluded to by Sir Walter Foster at the annual dinner last month, and now Sir John Austin and Sir J. Dorington furnish living examples of the tyranny of constituencies. The first-named baronet, who represents the Osgoldcross Division of the West Riding of Yorkshire, had the temerity to vote in the Ministerial Lobby against the adoption of Local Veto, and has thus brought himself into serious conflict with the local Liberal Association which engineered his return and watches his Parliamentary actions. The Association is said to have resolved on severe measures. In the case of Sir John Dorington, the Conservative member for the Tewkesbury Division of Gloucester, the head and front of his offending is that he objects to State pensions, as having a tendency to promote improvidence. Having the courage of his convictions, the honourable baronet gave expression to his thoughts, and has been called to order, as it were, by his Committee, who, presumably, do not hold universal pensions in abhorrence. These two episodes are instructive, as they exemplify the power of the electorate, and the practical dependency of the elected representative.

Municipal Trading, which is assuming dangerous developments, is to become the subject of investigation by a joint Committee consisting of five members of the House of Commons and five members of the House of Lords. This step is not without importance, for the industrial enterprise of municipalities may run into undesirable channels. If a go-ahead local authority should strike the brilliant idea of running municipal drug stores, pharmacists would be confronted with a further complication of the co operative principle which dominates modern commercial life. It may be well for the Council to watch the proceedings of the Committee, and to bear in mind the growth of municipal trading when dealing with the company question.

Mr. James Lowther seems to have developed a pretty wit in connection with the Seats for Shop Assistants Bill. He has given notice of amendments for the Committee stage that savour rather of the comic journal than the statesman. In the first place the right hon. gentleman proposes to extend the provisions of the Bill to male assistants. Next he suggests that the seats to be provided should be "suitably stuffed," and, finally, that at least one-fourth of them should be provided with arms, and that an additional fourth should be constructed as sofas. Evidently the member for Thanet is disposed to forget his past career in responsible positions under the Crown, and to treat the whole thing as a subtle joke of Sir John Lubbock. Mr. Tennant (Berwickshire) has also a notice relating to the Bill, but, as becomes a member for a Scotch constituency, he embodies no humour in it. In fact, he will attempt to over-ride the veto of the House of Lords on the lately-massacred Scotch Bill by moving that Sir John Lubbock's measure shall extend to Scotland. There is reason to believe that it will not apply to any portion of the British Isles yet awhile.

Unqualified Dispensers in Doctors' Surgeries will again occupy the attention of the House at question time to-day, the 9th inst. Major Rasch, who is exhibiting the pertinacity of an Irish member, will ask the Vice-President of the Council to explain his last reply, which, as will be remembered, was to the effect that accidents resulting from the blunders of the aforesaid unqualified dispensers are practically infinitesimal. The gallant Major returns to the charge by slyly asking what provision exists for bringing such accidents to the notice of the Privy Council, and, if there is such provision, who reports the cases, and how many have occurred during the past two years. This interrogation places the Minister in a rather tight corner, for if he admits that no statistical machinery exists he cannot justify the statement he previously made that mistakes are rare. On the other hand, he cannot assert that the machinery does exist, or he would not have been forced to rely upon the General Medical Council for material for his former replies. The member for S.E. Essex has obviously been carefully educated on the subject he has in hand.

Righteousness in the Lords.—Though the House of Lords has not moved further with the Companies Bill or the Pharmacy and Medical Profession Bills, it is actively engaged in dealing with moral measures. The Bill to kill Usury has passed to the Commons, and the Bill to prevent corruption in the form of secret commissions is well on its way there, having received the blessings of both the spiritual and the temporal peers. In addition, there are the Copyright Bills, which will render literary pilferings things of the unholy past; and the Board of Education Bill (now in the Commons), which is expected to add greatly to the efficiency of the nation's educational system. Truly the Lords are in a purifying mood this Session.

Among the Various Effects which have contributed, in a compensatory manner, to dilute the anticipated beneficent influence of unlimited competition, moral as well as material falsification appear to have been so far equal that there is, in trade, as much need for a standard of honesty as for one of dairy produce. The Episcopal lucubrations on corruption, reported to have taken place in the House of Lords last Tuesday, might even be ludicrous if they did not refer to a subject of serious import, and the cynical editorial comments upon them in the *Times* of Wednesday are not without some suggestive indication that the exigencies of competitive trade may prove to be the influence under which the efficacy of old-established methods of controlling social conventions will prove unequal to the strain of up-to-date trade requirements.

Obituary.

Blackmore.—On May 29, at Turners Hill, Cheshunt, Peter Ludgate Blackmore, Chemist and Druggist. Aged 50. Mr. Blackmore was a grandson of the late Peter Ludgate, of Chiswell Street, and had been connected with the Pharmaceutical Society as an Associate, and latterly as a member, for many years.

Cooper.—On June 3, Daniel Burton Cooper, Chemist and Druggist, Brixton. Aged 73.

Ramsden.—On June 3, George Ramsden, Chemist and Druggist, Newport (Salop). Aged 73.

Stoddart.—On May 29, Joseph Stoddart, Chemist and Druggist, Sunderland. Aged 49.

FOREIGN NEWS.

Limitation of Pharmacies in France.—How to stem the tide of aspirants for pharmaceutical honours has long been a perplexing problem for French pharmaciens who are safely within the harbour but who fear that their little barks may soon be wrecked by that ever-swelling sea of "diplomaed" who so successfully leap the breakwaters. The latest suggestion is but a modification of that put forward in the year 1845, and is none other than a plea for the limitation of pharmacies. It is a capital idea, no doubt, but it is to be feared that they who seriously entertain hopes of its early realisation do but live in a fool's paradise. Pharmaciens have recently met in solemn conclave to discuss this disquieting problem, and have decided to take advantage of the Congress which is to be held next year to propose new laws relative to the exercise of pharmacy. Their failure to obtain their point in 1845 was due to their approaching the Government in an aggressive manner with a big programme demanding sweeping and unreasonable reforms, such as "limitation of pharmacies, suppression of specialties and pharmaceutical advertisements, abolition of herborists, etc., etc." As Monsieur Ch. Chamoüin justly puts it, "if the Congressionists in 1845 had but taken the advice of Messieurs Vée, Dorvault, Boudet, Buignet, Gaulthier de Claubry. etc., who were the sages of the profession, and had gone to the Government with a sensible and realisable proposition to refuse to authorise the opening of a new pharmacy in any quarter unless, as the result of an inquiry made by an administration and council composed of doctors and pharmaciens of the arrondissement in question, the opening of a new pharmacy be deemed necessary to the requirements of the population." This suggestion was also put forward by Monsieur Boutes at the Pharmaceutical Congress of Paris in November last year, but his hearers only accorded it a cold reception, and would be content with nothing short of limitation in its most radical form, leaving for the moment specialties and herborists in the background to be dealt with at some future epoch. Little change, therefore, seems to have come o'er the spirit of their dreams, for they have apparently not yet learned that "coercion" is an unsuitable implement to force a liberal Government with.

Nevertheless Another Attempt is to be Made to induce the law-makers to listen to their tale of woe, and suggestions for the formulation of the programme come pouring in thick and fast. Their first care is to check the number of passes, by limiting the number of entries to the pharmacy schools at the various centres. Their second is to pray the professors and examiners to use the utmost stringency, which, to put it frankly, is tantamount to praying them to plough the poor candidates right and left to knock off the keen edge of their taste for pharmacy. Their third is a somewhat novel and original suggestion, and embodies a plea for powers to strike off the register any qualified assistants who, whilst employés, are guilty of any grave and undignified misdemeanour. What the last might comprise is an unsolved question (perhaps intentionally so); however, it is hoped that these three suggestions may do something towards "limitation." The assistant bogey thusly disposed of, their next question to wrestle with is "How to limit existing pharmacies," for, upon the basis that German limitation works, only a certain number of pharmacies are permitted for a certain number of inhabitants in each locality. To this, one has had the courage and impudence to suggest that the last comer or comers should be "closed-up," but this means was not approved of, and the query was shelved *sine die*.

If this New Law were Passed it would therefore follow that as no new pharmacy could be created without the State's sanction, so no existing pharmacy could be transferred from one individual to another without similar consent; thus a sort of *concours* would be held, and the fittest for the post would gain it. Prices, of course, would be regulated and enforced by the Government, as is the case in various States in Europe, and the cry "I only paid so much for this at So-and-so's" would eventually die out. This alone would be a consummation devoutly to be wished. Competition thus abolished, it is not unreasonably supposed that the public would be greatly benefited, for inducements to trickery, etc, in pharmacy would no longer exist But unless the powers that be can be induced to see that the scheme will assuredly work out to the public good, little hope need be entertained of accomplishing eventually the end which pharmacists have in view. Better by far to drop "limitation" for the moment, and adopt a sensible and realisable scheme like that of Monsieur Ch. Chamoüin, and thus get the thin end of the wedge well in. What may be the ultimate outcome of the attempt, when it shall be presented in a more suitable form, remains to be seen. English pharmacists, like their French *confrères*, might gain much in the end by asking a little in the beginning and so create a precedent upon which to base further claims.

Fire in a Drug and Drysaltery Store.—On the morning of June 6, a serious fire broke out at Monsieur Gonache's Drug Store, at the corner of the Rue des Martyrs and the Rue Notre Dame de Lorette. It appears that an assistant, Monsieur Pagnier, descended to the cellar to seek something, and placed the naked light near an unstoppered jar of benzine, with the result that a serious explosion ensued, burning and disfiguring the poor youth. The cellar containing many other inflammable medicaments soon caught fire, and a series of explosions quickly jeopardised that and the surrounding houses. The fire brigade was soon on the spot, and four firemen very heroically made their way into the burning cellar, but were soon overcome and asphyxiated. Others were so seriously burned and injured that they were borne off to the hospital, and their lives are despaired of. At the end of a couple of hours, with the aid of other brigades, the flames were at last overcome. The damage, which is enormous, is completely covered by insurance.

Suicide by Tincture of Iodine.—Jean Wienhelm, 43 years of age, living at 32, Rue de Gentilly, committed suicide by drinking 45 grammes of tincture of iodine, which was purchased from a neighbouring pharmacien, ostensibly for painting the chest and back. No motive is assigned for the act.

Another Error in Dispensing.—A pharmacy in the 8th arrondissement of Paris has become notorious for a serious error in dispensing. In this pharmacy it is announced that "English is spoken." There is no Englishman therein, and fortunately the pharmacy is just outside the English haunts, though not a hundred miles from the British Embassy. It appears that a maid was sent to procure a purge, and one containing what was intended as scammony was given. When swallowed, alarming symptoms supervened, the patient being cramped and in agony and frequently convulsed. An English doctor was immediately sent for from hard by, and soon recognised the symptoms as those of strychnine poisoning. Treating the patient for such, he eventually, though not without much time and labour, put her life beyond danger. The "commissaire de police" was sent for and the necessary depositions taken. A searching inquiry is to be instigated, and the necessary measures for ensuring the public safety will no doubt be taken. It is alleged that this is by no means the first time carelessness has been productive of serious results at the same pharmacy.

IRISH NEWS.

Miller v. the Pharmaceutical Society of Ireland.—Before the Queen's Bench Division, Mr. William Miller, of Coleraine and London, applied for a conditional order for a mandamus directed to the Pharmaceutical Society to compel that body to admit him to their Licence examination, under Section 22, Pharmacy Act, 1875. Mr. Miller has served an apprenticeship of five years with Dr. Charles Forsythe, who is a licentiate of the Apothecaries' Hall, Dublin, an M.D. of the late Queen's University, and a licentiate of the Royal College of Surgeons, residing and practising in Coleraine. The Society refused to accept the apprenticeship, the main objection being that, although Dr. Forsythe was a licentiate of Apothecaries' Hall, he was not one within the meaning of the old A.H. Act of 1791. The Court granted a conditional order for a mandamus.

Carbolic Acid for Cough Mixture.—An inquest was held at the Belfast Royal Hospital upon the body of one Sarah Reid, who came to her death by mistaking, in the usual way, a bottle of carbolic acid for some cough mixture. The jury found that deceased died from shock following poisoning by carbolic acid, taken by misadventure. They attached a rider desiring the Coroner to express to the Home Secretary their opinion as to the necessity of dispensing poisons in coloured and ribbed bottles, and that it should be incumbent upon chemists and druggists to explain to purchasers the deadly nature of the poisons—which latter duty it is clearly not in the power of Mr. Boot's automaton to perform.

SCOTTISH NEWS.

The Glasgow Parish Council has agreed to increase the salary of the apprentice dispenser in Parliamentary Road Dispensary from £22 to £36 per annum, and another apprentice has been engaged at a salary of 10s. per week.

Glasgow Contracts Fixed.—The Parish Council of Glasgow, at its meeting on Tuesday, June 6, fixed the following contracts: Medicines: Glasgow New Apothecary Co., 59, Glassford Street, £664 13s. Glass bottles: W. and R. Hatrick and Co., 137, Waterloo Street, £59 14s. 11d. Surgical and antiseptic dressings: John J. Findlay and Co., 96, Bath Street, £370 1s. 8d. Pathological materials: W. J. Hassard and Co., 209, Sauchiehall Street, £10 7s. 2d. Medicinal oils: Andrew Steven and Son, 132, Wellington Street, £69 17s. Rectified spirits of wine: Robert Brown and Co., 45, Washington Street, £210 16s. 8d. Extract of beef: Armour and Co., London, £76 19s. Linseed meal: W. and R. Hatrick and Co., £26 8s. 9d. Malt extract: Burroughs, Wellcome and Co., London, £24. Senna leaves: James Taylor, 132, Trongate, £7. Carbolic acid, etc.: F. C. Calvert and Co., Manchester, £22 18s. 8d.

ENGLISH NEWS.

British Pharmaceutical Conference.—A meeting of the Executive was held in the Pharmaceutical Society's House, 16, Bloomsbury Square, W.C., on Wednesday last, June 7, the President of the Conference (Mr. J. C. C. Payne, of Belfast) in the chair. With a view to improving the organisation of the Conference, the first step taken was the appointment of thirty-six local corresponding secretaries, to be elected annually. Mr. C. J. Park and Mr. J. Davy Turney (local secretary) attended as delegates from Plymouth, and presented a provisional programme for the forthcoming Conference (see p. 534). The programme was adopted. A preliminary list of officers for the coming year was then drafted and eighteen new members were elected. This concluded the business.

Unqualified Dispensers.—As was mentioned in the Journal last week (page 512*d*), the General Medical Council at its meeting on Wednesday, May 31, appointed a Committee to deal with the question of the employment of unqualified dispensers. The members appointed were Mr. Brown, Mr. Teale, Dr. Bruce, and Dr. Leech, but on Wednesday last, June 7, the name of Mr. R. Brudenell Carter was added to the list. It is interesting to note that Mr. Carter is the member of the General Medical Council chosen by the Apothecaries' Society of London.

Annual Excursion.—On Saturday last Messrs. Raimes and Co., wholesale druggists, of York, held their annual excursion and dinner after stocktaking, the steam yacht "Gitana" being chartered for the occasion. Accompanied by the two partners, Mr. S. Scruton and Mr. W. C. Birks, and three of the travellers, the party proceeded at 1.30 to Newton and Linton Lock, returning at 6.30 to an excellent and well-served dinner at the Pack Horse Hotel. After dinner, under the presidency of Mr. Scruton, an evening of harmony was spent, and amongst many interesting items the songs of Mr. Henry Robinson and Mr. Walter Scruton and a double quartette by a party of friends deserve special mention. After the usual loyal toasts, Mr. H. Whipp, the warehouse manager, who occupied the vice-chair, wished "Success to the Firm," alluding to the heavy increase in business, and the partners, in responding, expressed the pleasure it gave them to meet their staff under such happy auspices, and their high appreciation of the excellent work they had done during the past year.

The Ownership of Soda-Water Syphons.—At Blackburn County Court, on Monday, His Honour Judge Coventry gave judgment in the case of James Henry Cuff, mineral water manufacturer, of Manchester, against Joseph Sidebottom, chemist, of Church The question, said his Honour, was the ownership of three dozen soda-water syphons which came into the defendant's possession in 1894, when he acquired the business from Mr. Peate, the previous tenant. It was contended that Peate had forwarded three dozen of his own syphons to be filled at Cuff's, who had returned their own syphons. Assuming that to be the fact, the Judge held that the syphons did not become the property of the defendant. He therefore held that the previous tenant never had any property in the bottles, nor could the defendant have any. As regarded the claim for £3 12s. for wilful damage to the syphons, he said it was impossible for him to see that defendant, when he acquired the goods, was bound to know that they belonged to plaintiff, and he gave no damages. With regard to the claim for the return of the bottles, he decided that the plaintiff was bound to succeed, as the previous tenant had no right to sell. He allowed the claim for £2 8s., to be reduced to 1s. if the syphons were given up. The Judge directed that each side should bear its own costs.

Royal Institution.—A general monthly meeting of the members of the Royal Institution was held on the 5th inst., His Grace the Duke of Northumberland, K.G., President, presiding. The following were elected members:—Mrs. C. M. Armstrong, Mr. R. Bentley, Sir R. Courtenay Boyle, K.C.B., Mr. R. M. Cowie, Mr. H. H. Cunynghame, Mrs. H. H. Cunynghame, Mr. H. W. Grigg, Mr. O. T. Kilvington, Mr. T. Matthews, Mrs. T. L. Mears, Mr. W. B. Myers-Beswick, Mr. T. C. Owen, Mrs. R. Palmer Thomas, Mrs. Twopeny, Mr. T. Terrell, and the Rev. C. E. Wright. The special thanks of the members were returned to Mrs. Wigan for her donation of £10 10s., and to Mr. Thomas A. Rogers for his donation of £10 10s., to the fund for the promotion of Experimental Research at Low Temperatures. The special thanks of the members were returned to Mr. Hugh Spottiswoode for his valuable gift to the Royal Institution of his father's collection of physical apparatus.

Poisons in Orchards.—On May 10, 1899, Mr. George Bunyard, Vice-President of the Fruit Committee of the Royal Horticultural Society, delivered before the Society of Arts a valuable paper on "Fruit Growing in Kent." In the subsequent discussion Mr. Bunyard remarked: "With regard to spraying, he had to be very careful what he said. If he advised people to do this, it might be done carelessly, and very grave results might ensue. He knew of a case where a man washed his apple trees with London purple, and some of it fell on the gooseberries, resulting in a vast amount of illness. It was a good thing to use where people were sufficiently careful. A man once said to him, 'I never tell people to do it, but I do it myself.'"—*Gardeners' Chronicle.*

Fatal Carbolic Acid Accident.—An inquest was held on Friday, June 2, by the Manchester city coroner, Mr. Sidney Smelt, concerning the death of William M'Loughlin, dyer, who lived in Lord Street, Blackley. He was employed at Messrs. Frederick Cawley and Company's dye works in Blackley, and on the evening of May 11 he was noticed to enter the workroom in a dazed condition shortly before the hour for finishing work. He was examined by some of the workmen, who found that he was burned about the lower part of the body. He said he had spilled some carbolic acid over himself. It was stated that the firm had cans of carbolic acid, which was used as a disinfectant. It was believed that M'Loughlin filled a ginger-beer bottle with the acid, intending to take it home, and that some of it escaped when the bottle was in his trousers pocket. A verdict of accidental death was returned.

Pharmaceutical Cricket.—At Nunhead, on May 27, in the match between Brixton College C. C. and Muter's C. C., "Muter's," although represented by a weak team, managed to win by 19 runs. Scores: "Muter's" 67, Brixton 48. On June 3, at Nunhead, the match between Metropolitan College C.C. and Muter's C.C. resulted in a win for Muter's by 37 runs. Scores: Muter's 99, Metropolitan 62 Armstrong batted and bowled well for Muter's, making 25 runs and taking six wickets for 13 runs.

South London School of Pharmacy, Limited.—The staff and present students of this school dined together on Friday, June 2, in the Empire Hall of the Trocadero, having been invited thereto by Dr. Muter to celebrate the marriage of Mr. A. H. Mitchell Muter. The banquet being a private one, no press invitations were issued, but we are informed that about one hundred guests sat down to a superb dinner put on by Messrs. Lyons. During the evening Colonel and Sheriff Clifford Probyn, L.C.C., who attended in state, addressed the students in eloquent terms, recalling the old times when he himself was a student at the South London School, and giving them good advice as to studies and success in after life. A presentation of a black marble dining-room clock and set of bronzes was made to Mr. Mitchell

Muter on behalf of the staff and students, and acknowledged by him in a feeling speech. The company, which included some of the directors and shareholders of the School Company and a few leading local officials, separated at 11·30, after a function that will live in the memories of those present for its elegance and enthusiasm.

Poisoning by Benzine.—Cases of benzine poisoning are somewhat rare, hence a case reported by F. Spurr, L.S.A., in last week's *Lancet* is worth recording. It appears that, about 5 a.m. on April 11, a woman, aged twenty-six years, who had suffered from epilepsy, swallowed nearly an ounce of benzine. Her sister immediately administered a strong emetic of mustard and water, causing her to vomit freely several times. She then complained of severe burning pain in the stomach, throat, and the mouth, but remained perfectly conscious. About seven hours afterwards she also complained of great difficulty in swallowing and of a sense of extreme weakness. The tongue was white, as if smeared over with white paint, and the fauces presented a similar appearance and were slightly swollen. There was great epigastric tenderness. The pulse and respirations were 88 and 24 respectively, and the temperature was normal. The pupils were equal and dilated, and reacted freely to light. During the day she had slight diarrhœa. She had a bad night, and next day was much worse. The pain in the throat and stomach was very great, and only a few drops of fluid could be swallowed at a time; breathing was short and rapid, the respirations being from 36 to 40, and the temperature 103° F. There were loud, moist râles all over the upper part of the chest, slight dulness on percussion, and crepitations over the lower lobes. About 4 a.m. on the 13th she was comatose; the pulse was 160, small and thready; the respirations were 48, and the temperature 105°·8. Death occurred about 7 a.m., fifty hours after taking the poison. The main feature of the case, as indicated by the symptoms and by subsequent post-mortem appearances, was the irritant action of the benzine on the structures and organs with which it came in contact. The narcotic effects described in previously recorded cases of benzine poisoning were not manifested, probably on account of the evacuation of the stomach caused by the emetic before any extensive absorption had taken place. The embarrassed breathing and circulation and the high temperature were ascribed in large measure to the direct toxic action of the poison on the great nerve-centres.

PERSONAL AND BUSINESS NOTES.

Mr. Edward Barrow, for many years proprietor of the pharmacy at Kirkstall, has transferred the same to Mr. F. W. Hollingworth, chemist, formerly of Leeds.

Mr. A. B. Passmore, of Union Road, Borough, S.E., has just opened premises at Upper Tulse Hill, fittings having been executed by Messrs. Treble and Co., Clapton, London.

Mr. Part, late of Catford, has just opened a high-class pharmacy at West Worthing. The whole of the fittings have been supplied by Messrs. Treble and Co., Clapton, London.

Messrs. Evans, Gadd, and Co., Bristol and Exeter, intimate that their offices, warehouses, and laboratories will be closed on July 1, for the annual stocktaking holiday, and request that customers will kindly anticipate their wants as far as possible in view of that event. The same firm also sends a copy of the June price list of chemicals, drugs, galenicals, etc. There is no special feature about the list, but it will be noticed that all preparations are made according to the B.P. (1898) unless otherwise ordered.

FOOD AND DRUGS ACT PROSECUTIONS.

Olive Oil.—At West London Police Court, on June 2, Messrs. King and Mortimer (Limited), of Old Broad Street, were summoned in respect of the sale of olive oil which contained 70 per cent. of oil other than that of olive oil.—Mr. T. Blanco White, solicitor, who prosecuted on behalf of the Fulham Vestry, said that the defendants had already been fined (see *ante*, 492*b*). However, he mentioned that he had received a letter from the secretary, stating that it was the intention of the company to correct the price lists.- Mr. Rose thought there had been carelessness in selling the oil after the conviction, and imposed a penalty of £5, with £1 3s. costs.

Spirit of Nitrous Ether.—At Dartford Petty Sessions, on May 27, Wm. P. Tucker, described as a chemist and druggist, of Dartford [the name Wm. P. Tucker does not appear in the Register of Chemists and Druggists for 1899.—ED. *P.J.*], was summoned for selling spirit of nitrous ether which was certified by the county analyst to contain only 1·28 per cent. of nitrous ether. For the defence it was stated that the sample was sold by mistake from some old stock. A fine of 20s. and costs was imposed.

Trade Notes.

The "Migränator."—Mr. H. Edward Acker, Kronenburgerstrasse 34, Strassburg i. E., submits a specimen of the "Migränator," a small appliance designed by Dr. L. Sarason to take the place of drugs, such as antipyrine, antifebrine, etc., for the relief of head troubles. The "Migränator" is as simple as it is said to be efficient, consisting, as it does, of a metal band with a plush-covered pad at each end, which can be regulated to fit heads of different sizes. Its application is readily understood, and the mere wearing it round the head for half an hour is said to regulate the afflux of the blood at the temples and to banish the most obstinate of headaches.

Dionin.—Messrs. E Merck, of Darmstadt and London, direct attention to a new substance, dionin, recently introduced for the treatment of the morphine habit. It is described as an ethyl derivative of morphine, and is said to have been found superior to peronin (benzyl morphine) or codeine (methyl morphine). The dose of dionin is 0·015 to 0·03 grammes subcutaneously, and 0·03 to 0·06 grammes by mouth. It is reported to produce no euphoria and consequently can be discontinued easily; it is also said to do away with the obstinate sleeplessness which attends the usual treatment of the morphine habit.

Illustrated Price List.—Messrs. James L. Hatrick and Co., Ltd., 82, Turnmill Street, E.C., send a copy of their new illustrated wholesale and export price list of surgical instruments, surgical splints, antiseptic dressings, pure petroleum jellies (yellow and white), pharmaceutical machinery, aniline dyes, etc. Net prices are quoted in most cases, great reductions in price being noticeable in the case of petroleum jelly. A copy of the list will be sent on receipt of trade card to any chemist who has not already received it.

List of Coated Tasteless Pills.—Messrs. Evans, Sons and Co., Liverpool, send their new price list of coated tasteless pills, gelatin-coated pills, flexible gelatin capsules, compressed pellets, medicated pessaries, suppositories, and bougies. The list is very comprehensive and admirably arranged, and all the kinds mentioned therein are kept in stock. The prices quoted are for not less than one gross of coated pills nor for less than half a pound of uncoated. The firm is prepared to make special quotations to buyers in quantity and for private formulæ.

The Flotation of Vinolia.—The Vinolia prospectus will be issued in the course of this month. The capital will, in all probability, be £300,000, divided into Preference and Ordinary shares, but only the former will be offered for subscription, the present proprietors retaining the whole of the Ordinary shares.

Poison Regulations.—The simple poison indicator devised by Mr. W. Temple Cooper, and described in the Journal for April 15 last (page 350), can now be procured from Mr. F. Bascombe, North London Chemical Works, Holloway Road, N. Mr. Cooper asks us to state that he has been overwhelmed with communications since the above-mentioned notice appeared in the Journal, but he is not prepared to supply the indicator himself, and trusts that all queries and orders will henceforth be sent to Mr. Bascombe at the address stated.

The Crown Meat and Malt Wine, prepared by Messrs. Lamb and Watt, of Liverpool, is a typical specimen of the class of preparations to which it belongs and as good as anything of the kind on the market. The basis of the wine is an Alto Douro port, which is blended with Mosquerah beef jelly and extract of malt. This is a difficult combination to effect without rendering the mixture unpalatable, but the difficulty appears to have been well surmounted in the case of the preparation under notice.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

JUNE 8, 1899.

Business has been quiet during the week, and it is to be feared that now that summer weather has at last set in we shall hardly see any resumption of serious business activity until somewhat later in the year. Practically the only change to report is a slight advance in price of Quicksilver (prices of Mercurials remaining so far unaltered); a set-back in value of Sulphate of Ammonia, and a slight weakening in the speculative price of Sulphate of Quinine, caused partly by the larger shipments of bark advised from Java for the latter part of May; the uncertainty also as to the results of to-day's bark sale in Amsterdam may have had some influence in the direction of weakening the market, while, furthermore, it is hinted in some quarters that the advices of shipments of Bark from Java are being manipulated for market purposes. Linseed Oil is also dearer, and Rape Oil very firm. Otherwise there have been no changes in value. The following are some of the prices actually ruling :—

ACETANILIDE.—Price of this article is being still cut. Buyers will do well to be careful as to quality. The combined makers still quote 11d. per lb. for a reliable article in 5-cwt. lots.

ACID CARBOLIC—Quiet but steady at 6⅝d. to 6¾d., according to make and quantity, for the 35-36° C. *ice crystal* in bulk; other qualities and packing being quoted in proportion. *Crude*, 60° F., 2s. 1½d. per gallon; 75° F., 2s. 8d. per gallon. *Liquid*, 95-98 per cent., of pale straw colour, 1s. 2d. per gallon, in 40-gallon casks.

ACID CITRIC.—Very firm in sympathy with *juice*, which has risen to £21 per pipe. Makers of *Citric* quote 1s. 6d., while there are limited quantities offering from second hand at 1s. 5½d. to 1s. 5¾d. Everything points to the possibility of decidedly higher prices for the article.

ACID OXALIC—Very quiet at 3d. to 3⅛d. per lb. net, delivered free London.

ACID TARTARIC—Unchanged at 1s. 1d. per lb. delivered for *English*, and 1s. per lb. *c.i.f.* for *foreign*.

AMMONIA COMPOUNDS.—There are no changes to report, with the exception that *Sulphate* has turned very dull, quotations being: Grey prompt, 24 per cent., London, £12 12s. 6d.; Hull prompt, £12 7s. 6d.; Leith prompt, £12 8s. 9d. to £12 10s. Beckton does not offer. Beckton terms, prompt, £12 7s. 6d. to £12 10s. per ton.

BORAX AND BORACIC ACID—Quiet and without change.

BROMIDES AND BROMINE—Very steady, with no change in value to report.

CHLORATE OF POTASH.—London spot is still quoted 3¾d. per lb. for *crystals* and 3⅞d. for *powder*.

CLOVES.—Privately the market for *Zanzibar* is quiet and dull, with sellers for April-June delivery at 3 3/16d. and Oct.-Dec. at 3⅛d. At auction the small supply of *Penang* was all bought in, comprising fair to good bright picked at 7½d. to 11d. Of 110 bales *Zanzibar* 40 sold, common at 3d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol* quiet at 9d. per gallon for the commercial and 1s. to 1s. 3d. per lb., according to quantity, for the pure. *Benzole* lower; 50 per cent., 7d. per gallon; 90 per cent., 6½d. *Creosote*: 3½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 4d. per gallon; 90 per cent. at 160° C., 1s.; 90 per cent. at 190° C, 1s. 2d. per gallon. *Anthracene*: A, 3½d. per unit; B, 2¼d. *Pitch*: 28s. 6d. per ton, *f.o.b.* *Tar*; *refined*, 12s. 6d. per barrel, 2d. per gallon; *crude*, 12s. 6d. per barrel, 1⅞d. per gallon.

COCAINE—Is firm at nominally unchanged prices. Any increase in actual demand would probably force makers to advance their price. There appears, however, to be still a considerable quantity available from second hand, which is offering slightly below makers' price.

CODEIA—Is very firm at 12s. 3d. to 12s. 9d. per oz., according to quantity.

COD-LIVER OIL.—Very quiet and unchanged in price.

CREAM OF TARTAR—Quiet. First white *crystals*, spot, 73s. per cwt.; *powder*, 75s. to 76s. per cwt.

GINGER.—Large supplies of *Cochin* were offered at auction, and with only moderate demand generally lower prices resulted. About 650 packages found buyers. A cut, fair to good scraped, at 56s. to 61s.; B ditto at 39s. to 42s.; C, ordinary to good, partly without reserve, at 25s. 6d. to 29s.; small and lean native cut at 30s.; washed rough, fair small at 21s.; rough D's at 17s. 6d. to 18s.; cuttings 15s. 6d. *Jamaica* also in large supply, but with good demand steady rates ruled for common, and an advance was realised for the better qualities. About 1000 packages sold, fair to good bright plump at 69s. to 74s., medium to good medium at 65s. to 67s., ordinary to good ordinary at 57s. 6d. to 63s., common Rhatoon at 50s. 6d. to 55s. 23 bags *St. Lucia* were bought in at 60s., also 60 bags fair limed *Japan* at 20s.

GLYCERIN—Very quiet; no change in price to report.

IODIDES AND IODINE—Are firm at unchanged prices.

MERCURIALS—Are unchanged from last week.

MORPHIA—Unchanged in value, while makers are very busy and find difficulty in keeping pace with the demand for immediate delivery.

NUTMEGS—Quiet but steady; *Penang*, 80 bags offered in auction part sold, 66's at 2s. 2d., 79's at 1s. 7½d.; *Ceylon*, 93's, slightly wormy, at 1s 1d.; *West Indian*, 30 cases. 41 barrels sold in auction, 66's at 1s. 10d., 74's at 1s. 7d., 76's and 79's at 1s. 6d., down to 5½d. for 146's slightly wormy.

OILS (FIXED AND SPIRITS).—*Linseed* very firm at 5s. to 10s. per ton advance. London spot pipes, £20 to £20 5s.; barrels, £20 10s.; July-August, £19 15s.; Sept.-Dec., £18 7s. 6d. Hull, 25s. per ton dearer; spot naked, £20 paid, and £20 5s. now asked; July-August, £19; Sept.-Dec., £17 10s. *Rape* very firm. Ordinary brown spot, July-August and September-December, £21 15s; refined spot, £23 to £23 5s.; Ravison spot, naked, £17 5s.; July-Aug. and Sept.-Dec., £17 10s. *Cotton* steady, without appreciable change in values. *Cocoanut* steady and unchanged. *Olive* quiet. *Palm*: Lagos spot, £24 10s. *Turpentine* firm at unchanged prices. *Petroleum* firm and unchanged.

OPIUM—Is quiet and without change. *Persian* remains very firm at 11s. 3d. to 11s. 6d. per lb. for fine quality.

PHENACETIN—Remains very weak at 3s. 4½d. to 3s. 9d. per lb., according to quantity, for both *powder* and *crystals*.

POTASH COMPOUNDS—Are practically without change from last week.

QUICKSILVER.—Importer has advanced his price to £8 5s., second hand quoting 6d. per bottle less.

QUININE.—Market has quieted down in face of the larger shipments advised from Java up to end of May. Makers still quote 1s. 6d. per oz. for best *German sulphate* for 1000-oz. lots in 100-oz. tins, while the speculative price is 1s. 4d. per oz. spot, and 1s. 4¾d. for August. The result of to-day's bark sale in Amsterdam, which was not known at time of going to press, will no doubt have a certain influence on price of *Quinine*.

SHELLAC—Steady but quiet, with small sales on spot at about previous rates. For arrival 100 cases *T. N. Orange* have changed hands at 64s. 6d., *c.i.f.*, for Oct.-Dec. steamer shipment. The speculative market has also been quiet, but somewhat steadier. 100 cases *T. N.* have been sold for August delivery at 69s. 6d. per cwt., there being still buyers at that figure.

SODA COMPOUNDS.—Prices are same as given in our last week's report.

SPICES (VARIOUS).—*Black Pepper*: No Singapore offered. Of Tellicherry 163 bags sold, fully fair, at 5¼d. 28 bags Mangalore sold at 7½d. to 8¼d. *White Pepper*: Of 331 bags Singapore 177 sold; good at 9d. *Chillies*: Of 369 packages Japan 199 bags sold; fair bright at 33s. to 34s. 21 bales Zanzibar sold at 32s. to 32s. 6d. 41 bags African sold; good bright at 48s., ordinary to good red at 36s. to 44s. *Capsicums*: 100 bags Zanzibar sold at 27s. to 31s. 2 bales Natal bought in at 100s. *Cassia Lignea*, in large supply, realised lower prices. Of 1520 cases about half sold; new selected

at 39s. to 41s.. Fine old bought in at 52s. to 52s. 6d. 460 bales broken bought in at 35s. to 37s. 6d. *Mace* quiet. Of 27 cases Penang only 1 case sold; fair bright bold at 1s. 11½d. 10 cases West Indian sold; fair bright at 1s. 5d. to 1s. 7d., ordinary old at 1s. 2d. *Pimento* dull. Only a few bags sold at 4d.

SULPHATE OF COPPER—Is firm and the shade dearer at £25 to £26 15s., according to quantity and make.

SULPHONAL.—There are still rumours of other makers of this article being in the market. The two principal makers continue, however, to repudiate this idea, and maintain their price of 17s. per lb. for both *crystals* and *powder*, while anything offering presumably from second hand at a reduction on above price appears to be quickly snapped up. The position of the article consequently remains somewhat ambiguous.

To-day's drug auctions, which included an unusually large number of catalogues, passed off quietly. Price of Ipecacuanha was maintained, otherwise there is little of importance to chronicle. The following are the results of the sale as far as it has been possible to give same up to time of going to press:—

ALOES.—Four cases fair but not very bright *Cape*, sold at 24s. per cwt., good hard bright being held for 26s. to 27s.; 20 kegs *Socotrina* bought in at 75s. per cwt.

ACONITE ROOT.—Eight bags *Japan* sold at 28s. per cwt.

ARECA NUTS.—Fourteen bags, part sold at 25s. per cwt. for fair quality.

ARRAROBA.—Twenty cases, all bought in without mention of price, while for two cases showing on Dr. Paul's test 56·5 per cent. of acid chrysophanic price required was 1s. 6d. per lb.

ASPHALT.—Forty-eight cases *Syrian* bought in at 31s. 6d. per cwt.

ASSAFETIDA.—Seventeen cases sold at 95s. per cwt. for fine pale almondy drop down to 55s. for brown free drop; other 29 cases of low quality only fetched 15s. 6d. to 25s. per cwt.

BALSAM COPAIBA.—2 casks *Maranham* were taken out at 1s. 7d. per lb.

BALSAM PERU.—4 cases of good quality were taken out at 8s. 6d. per lb.

BALSAM TOLUOL.—11 cases were all taken out at 1s. 6d. per lb.; 14 cases part sold at 1s. 4d. per lb., balance being bought in at this figure.

BUCHU LEAVES.—72 bales part sold at 6d. per lb. for good green rounds, down to 3d. per lb. for yellowish oblongs.

CAMPHOR.—19 cases *Japan refined* all bought in at 1s. 7d. for 1-oz. tablets, and 1s. 8d. for ½-oz. tablets.

CANADA BALSAM.—6 casks were taken out at 1s. 11d. per lb.

CANELLA ALBA.—20 bales were taken out at 32s. 6d. per cwt.

CARDAMOMS.—Medium to fair *Ceylon* sold at 1s. 10d. to 2s. 6d. per lb., good bold at 2s. 11d. to 3s. 2d., fair *Seed* at 2s. 4d. per lb.

CASCARA SAGRADA.—25 bales of good new bark were taken out at 32s. per cwt.

CASTOR OIL.—15 cases *Calcutta* seconds, part sold at 3d. per lb.

CASTORUM.—Of 19 packages offered, part sold at 45s. to 75s. per lb., according to quality.

COCA LEAVES.—54 bales, all bought in at 1s. per lb. for yellow *Huanoco*, and 9d. per lb. for dark ditto, and 1s. per lb. for rather pale *Truxillo*.

CINCHONA BARK.—Of 40 packages *Crown* and *grey* 2 serons sold at 7½d. per lb. 13 bales *yellow* were taken out at nominally 2s. 6d. to 4s. per lb.

COD-LIVER OIL.—15 casks new *Norwegian* bought in at 60s. per barrel.

COLOMBO ROOT.—31 bags sold at 21s. for bold slightly wormy sorts. 7 bags fair washed bought in at 35s. per cwt.

DRAGON'S BLOOD.—6 cases, part sold at £10 per cwt. for only fair quality.

ERGOT OF RYE.—10 bags good *Spanish* taken out at 1s. 9d. per lb.; other 17 bags were held for 2s. down to 1s. 4d. per lb. for small.

ESSENTIAL OILS.—2 cases *Nutmeg* sold at 2d. per oz. 10 cases *Star Aniseed* taken out at 5s. 9d. per lb., 5 cases *Cinnamon* at 2½d. per oz., fair commercial Australian *Oil Eucalyptus* at 11d. to 1s. 1d. per lb., *Globulus* at 2s. 1d., 1 case *Patchouli* at 10s.

GALANGAL ROOT.—Five bags realised 2d. per lb.

GALLS.—Thirty-eight bags offered without reserve as sea-damaged fetched full prices up to 61s. per cwt. for 1*CSD* and 46s. for 3*CSD*.

GAMBOGE.—Twenty-nine cases were bought in at £9 per ton, being price of good pipe. Very soft sold at £6 to £6 2s. 6d., and good chips at £6 7s. 6d. per cwt.

GLYCERIN.—65 drums, each 10 cwt. net, pure refined glycerin, British manufacture, double distilled, chemically pure (B.P. test), sp. gr. 1260, lying at the Salford Dock warehouse of the Manchester Ship Canal—drums to be paid for, but returnable—were offered without reserve for account of whom it may concern, and realised £37 to £39 per ton net, which was a cheap price provided quality was right.

GENTIAN ROOT.—15 bales good root were held for 16s. 9d. per cwt.

GUAZA.—Twenty bales of very dusty stuff fetched 3¼d. per lb.

GUM ARABIC.—30 bales fair *Turkey* sorts bought in at 75s. per cwt.

GUM BENJAMIN.—8 cases medium to fair *Siam* were taken out at £15 per cwt.; 1 case good fair selling at £17. Medium *Sumatra* sold at £6 10s. to £7 per cwt., fair at £8 10s.; good ditto being held for £9 15s. to £10 10s. per cwt. 4 cases *Palembang* fetched 60s. per cwt.

GUM GUAIACUM.—4 casks sold at 1s. 2d. per lb. for fair to good block and 3¼d. for inferior drossy.

GUM KINO.—6 cases good *Cochin* sold at 4s. 6d. per lb.

GUM MASTIC.—Of 15 cases pale only a case or two sold at 1s. 11d. per lb.

HONEY.—9 barrels fair white *Jamaica* sold at 23s. to 23s. 6d. per cwt., 3 packages selling at 21s.; 40 cases white *Californian* were held for 38s. per cwt; 49 cases *Queensland* and 95 cases *Australian* were all bought in at 19s. to 23s. per cwt.

INSECT POWDER.—10 bags offered without reserve realised 4½d. to 8d. per lb.

IPECACUANHA.—12 bales *Rio* were all bought in at nominally a fancy price; other 9 bales ditto realised 14s. 6d. to 14s. 9d. per lb. for good sound root.

JALAP.—45 bales were bought in at 7d. per lb. for good fairly bold, and 6d. per lb. for small but fairly heavy tubers.

LAVENDER FLOWERS.—80 bags *Spanish* were taken out at 10s. per cwt.

MENTHOL.—5 cases "*Kobayashi*" brand were bought in.

NUX VOMICA.—30 bags bold *Cochin* held for 11s. per cwt., a bid of 10s. 6d. being declined.

NUTMEG PASTE.—2 cases bought in at 2¼d. per lb.

ORANGE PEEL.—23 packages were all bought in at 5d. to 6d. per lb.

ORRIS ROOT.—88 packages *East Indian* sold at 10s. per cwt. 1 seron *Mogador*, offered without reserve, fetched 13s. per cwt. 1 bag *Verona* also sold without reserve at 10s. per cwt. 8 bags fair *Florentine* bought in at 39s.; 15 bags medium ditto at 30s. per cwt.

PATCHOULI LEAVES.—30 bales of good quality were taken out at 3d. per lb.

QUINCE SEEDS.—2 bags good *Cape* sold at 1s. 4d. per lb.

RHUBARB.—Of 65 cases only a few cases sold at 10d. to 1s. for medium to fair flat *Canton*, and 6¼d. for rough round high dried.

RHATANIA ROOT.—Thirty bales sold at 5d. per lb. for fine quality; another lot of 10 bales bought in at 6d.

SARSAPARILLA.—23 bales *Lima* realised 10d. to 11½d. per lb. 10 bales *Jamaica*, 1s. 7d. to 1s. 8d. per lb. 7 packages *Carthagena* bought in, only 6d. per lb. being bid. 8 bales *Guayaquil* were taken out at 1s. 5d. per lb.

SCAMMONY.—23 cases, part sold at 18s. to 24s. per lb., according to quantity.

SCAMMONY ROOT.—60 bales were all bought in nominally at 21s. per cwt.

SENNA.—9 bales *Tinnivelly* all bought in at 4¾d. to 5d. per lb. for fairly bold green leaf. 69 bales small part broken rather yellow ditto sold at 1¾d. to 3d. per lb. 10 bales fine bold *Alexandria*, part sold at 10d. per lb.; while of 82 packages small inferior broken and yellow leaf only 1 case sold at 4½d. per lb., remainder being bought in at 2¾d. to 4½d. per lb.

SOY.—50 casks *China* taken out at 1s. 6d. per gallon.

SULPHATE OF QUININE.—Of 2 cases "*Zimmer*," 1 case sold at 1s. 4¼d. per oz.

TAMARINDS.—152 barrels good *Antigua* were taken out at 12s. 6d. per cwt., a bid of 10s. 6d. per cwt. being declined; 30 bales brown *East Indian* sold without reserve at 8s. 6d. per cwt.

TURMERIC.—22 bags *Madras Finger* sold at 24s. per cwt.

VERMILION.—13 cases *Chinese* taken out at 2s. 2d. per lb.

WAX.—Good fair *Jamaica* sold at £7 5s. per cwt.; fair

Australian at £7. 11 cases fair *East Indian* were bought in nominally at £7 5s. 50 cases *Japan* sold at 28s. 6d. to 30s. per cwt.

Wood Oil.—32 casks were taken out at 30s. per cwt.

Yellow Berries.—31 bags bought in at 70s. per cwt. for good quality.

Manchester Chemical Report.

June 7, 1899.

On export account the demand for heavy chemicals shows improvement, although on home account there has been some falling off. Owing to the hot weather interfering with crystallisation, Soda Crystals are decidedly firm, and Bleaching Powder and 58 per cent. Ammonia Alkali are fairly brisk. Sulphate of Copper is easier and prices vary from £26 10s. to £27 for best brands, delivered Manchester. Glycerin continues to a great extent demoralised, and quotations are nominal. Almost any order in reason will be executed at low rates. Recovered Sulphur is firm at £4 12s. 6d. to £5, according to point of delivery. Pitch is steady at 24s. to 25s. per ton. *f.o.s.* Ship Canal. Chlorate of Potash is firmer at 3¾d. to 4d., and Bichromate is quoted 3½d. home and 3¼d. export. Glauber Salts have a hardening tendency at 32s. 6d. to 35s., and Epsoms 55s. per ton, bags, on rails, Manchester. Arsenic is in smaller supply and is quoted £19 10s. per ton ex ship, Garston. Yellow Prussiate is very scarce at 8¼d. to 8½d. The direct oil trade is increasing, and about 4,000,000 gallons are due this week and next from American, Canadian, and Russian ports.

Liverpool Market Report.

June 7, 1899.

Business has been fairly brisk, the demand for staple articles regular and prices without any undue amount of fluctuation. In oils there has been only a quiet trade doing, but prices are firm, with higher rates for Linseed Oil and steadier quotations for Spirits of Turpentine, for which, however, the price is still above the average. Seeds are steady, with better sales of Canaryseed, which has risen in price 4s. 6d. per 464 lbs. since last week for Turkish, whilst stocks of Spanish have been considerably reduced. Among miscellaneous sales will be noted Californian Honey at full rates, dried Kola Nuts, Sierra Leone Chillies, and Chilian Beeswax all at good prices. Chemicals are quiet with but little alteration, except advances in Yellow Prussiate of Potash and Citric Acid, and easier quotations for Ammonia Sulphate and Copper Sulphate.

Acid Citric—Is dearer, 1s. 5½d. to 1s. 6d. per lb.

Ammonia Salts.—*Carbonate* is still very firm, 3¼d. to 3½d. per lb. *Sal ammoniac* firm, 33s. to 35s. per cwt. *Sulphate* is easier, £12 15s. to £12 17s. 6d. per ton.

Beeswax —Five sacks of Chilian went for £7 5s. per cwt.

Canaryseed —Turkish has been selling well; 1000 bags went for 29s. 6d. to 30s. per 464 lbs., then 500 made 31s., at which figure the price now remains firm; 200 bags of Spanish brought 35s., but the amount available is small.

Chillies—Fair Sierra Leone fruit have sold at 45s. per cwt. ex-store.

Copperas.—37s. to 40s. per ton and very firm.

Copper Sulphate—Is lower. £26 per ton.

Honey.—Fine liquid Californian has been selling at 40s. per cwt., but the price now is going upwards.

Kola Nuts.—12 bags of dried sold for 1¼d. per lb.

Linseed—Is quiet, both spot and forward; 300 tons of 4 per cent. Calcutta sold at 35s. 9d. per 416 lbs.; to arrive, Calcutta May-June 4 per cent. is quoted 36s. 3d., and River Plate 34s.

Oils (Fixed) and Spirits.—*Castor* are in retail demand with steady prices spot and forward; Calcutta, 2¾d. per lb. ex-quay and 2 13/16d. to 2⅞d. ex-store; French, first pressure, 2⅝d. to 2¾d., and 2 5/16d. second pressure; Madras, 2¾d per lb. For shipment forward French has risen 10s. per ton. *Olive* is only in limited consumption, with prices between £31 and £32 per ton. *Linseed* has advanced to 20s. 6d. and 21s. per cwt., and closes very firm. *Cottonseed* is steady and inactive at 17s. to 17s. 6d. per cwt. *Spirits of Turpentine* is only in moderate demand at 35s. per cwt.

Potash Salts.—*Bichromate*, 3½d. per lb. *Chlorate* is scarce at 3½d. to 3¾d. per lb. *Cream of Tartar* is slack and neglected at 73s. to 77s. 6d. per cwt.; fine French has sold at 77s. per cwt. *Pearlashes* are slack at 32s. per cwt. *Potashes* are in short supply at 23s. 3d. per cwt. *Prussiate Yellow* is scarce at 8¼d. to 8½d. per lb.

Soda Salts.—*Bicarbonate*: £6 5s. to £6 15s. per ton. *Borax*: 15s. 10d. to 16s. per cwt. *Caustic*: 76 per cent. to 77 per cent., £7 15s. per ton. *Crystals* (soda): £3 per ton. *Nitrate* is in slow demand at 8s. to 8s. 3d. per cwt.

Newcastle Chemical Report.

June 7, 1899.

This market for heavy chemical goods continues very steady and with a fair demand, especially for home consumption. Bleaching powder for exportation is scarce. The present hot weather is already lessening the supply of Soda Crystals. Shipping orders for the Baltic are more numerous. Prices are:—Bleaching Powder, £5 7s. 6d. to £5 12s. 6d.; Caustic Soda, 70 per cent. basis, £7 5s.; Soda Crystals, 45s. to 47s. 6d.; Soda Ash, 52 per cent., £4 5s.; Alkali, 52 per cent., £5; Sulphur, £5 per ton.

Partnerships Dissolved.

(From the London Gazette.)

Geo. Wheeler and R. D. Wheeler (trading as Wheeler and Co.), Aërated Water Manufacturers, etc., High Wycombe.

James E. Mayes and W. F. Mayes (trading as Mayes and Son), Mineral Water Manufacturers, 71 and 73, Katherine Road, East Ham, Essex. Debts will be received and paid by W. F. Mayes.

H. F. Robinson and Frank Kay, Chemical Works, Failsworth, near Manchester. Debts will be received and paid by H. F. Robinson.

John Sherwood and John Morris, Mineral Water Manufacturers, Cartwright Strect, Wolverhampton. Debts will be received and paid by John Morris.

TERMS OF SUBSCRIPTION.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Superfine Oil Lemon, 10 lbs. Copper, 22s. 6d.; sample pound, 3s.—Moss, Chemist, Chorley.

5 doz. each 1s. 6d. and 2s. 9d. Holloway's wine, carboys, jars, shop-rounds, and small stock; state requirements; cash or exchange.—Floyd and Co., Bury St. Edmunds.

No. 2 Frena, R.R. lens, perfect, 4 magnifiers, bamboo stand, waterproof case; cost over £10, price £5 10s.—J. Brooks, Chemist, Broadway, East Ham, E.

Pot. Iodid., 9s. 6d. per lb.; 2 lbs., 18s. 6d.; 4 lbs., 36s. Iodoform Precip. or Crystal, 13s. per lb.; 2 lbs., 25s. 2 × 25 ozs. Quin. Sulph., B.P., 1s. 3d. per oz. Bismuth Subcarb., 5s. 3d. per lb.; 4 lbs, £1. Cocain. Hydroch., 10s 6d. per oz.; 4 ozs., £2. 36 Munyon's, 22s. 6d. Carriage paid.—Eastman, Forest Lane, Stratford, E.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Publications Received.

THE YEAR-BOOK OF PHOTOGRAPHY AND AMATEUR'S GUIDE, 1899. Pp. 660. Price 1s. net. London: *Photographic News*, 9, Cecil Court, Charing Cross Road, W.C. From the Publishers.

TABLES FOR QUANTITATIVE METALLURGICAL ANALYSIS FOR LABORATORY USE. By J. JAMES MORGAN, F.C.S. Price 4s. London: Charles Griffin and Company, Ltd., Exeter Street, Strand. 1899. From the Publishers.

THE NEWER REMEDIES: A REFERENCE MANUAL FOR PHYSICIANS, PHARMACISTS, AND STUDENTS. By VIRGIL COBLENTZ, A.M., Phar.M., Ph.D., F.C.S., etc. Third edition, revised and enlarged. Pp. vii +147. Price $1·00 net. Philadelphia: P. Blakiston's Son & Co., 1012, Walnut Street. 1899. From the Publishers.

THE COLD-BATH TREATMENT OF TYPHOID FEVER. By F. E. HARE, M.D. Pp. xii. +196. Price 6s. net. London: Macmillan & Co., Limited. 1898. From the Author.

Advertisement.

(Received too late for Classification).

WARNEFORD HOSPITAL, LEAMINGTON.—Wanted, a Resident Lady DISPENSER (qualified). Salary £40 a year, with board, lodging and washing. Applications (stating age and qualification) addressed to the Committee, and accompanied by not more than five testimonials, to be sent to the House Surgeon on or before 21st June.

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7th June, 1899.

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2 and 3, Stonecutter Street, LONDON. **Little Queen Street, EXETER.**

Calendar for the Week.

Sunday, June 11. 2nd after Trinity. Sun rises, 3.45; sets, 8.13.

Monday, June 12. Sun rises, 3.45; sets, 8.14.

Tuesday, June 13. Sun rises, 3 45; sets, 8.14.

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, at 8 p.m. —Lecture on "Acetylene" by Professor Vivian B. Lewes.

Wednesday, June 14. Sun rises, 3.45; sets, 8.15.

WESTERN CHEMISTS' ASSOCIATION (of London), Westbourne Restaurant, 1, Craven Road, Paddington, at 9 p.m.—Meeting to consider the Companies Bill in so far as it affects pharmacy.

Thursday, June 15. Sun rises, 3.44; sets, 8.15.

CHEMICAL SOCIETY, Burlington House, Piccadilly, W., at 8 p.m. —Ballot for the election of Fellows. A number of papers will also be read.

LINNEAN SOCIETY OF LONDON, Burlington House, Piccadilly, W., at 8 p.m.

Friday, June 16. Sun rises, 3.44; sets, 8.16.

Saturday, June 17. ☽ 9.47 M. Sun rises, 3.44; sets, 8.16.

WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP, at Wadham Lodge.—Burgoyne's *v.* Davy Hill's.

Marriages.

WITHINSHAW—MOSS.—At St. Peter's Church, Brockley, by the Rev. E. J. Kennedy, vicar of St. James's, Hatcham, on Saturday, June 3, Ethel, the younger daughter of Mr. John Moss, to Dr. Charles Wesley Withinshaw, of Clapham. The ceremony was followed by a reception in St. Peter's Hall, where the numerous friends of the bride's parents and of the bridegroom assembled to present their congratulations and good wishes to the happy pair.

MUTER—THYNNE.—On the 7th inst., at St. Albans, Teddington, by the Rev. J. C. Gray, B.A., assisted by the Rev. F. L. Boyd, M.A., vicar, Alexander Henry Mitchell Muter, A.I.C., elder son of Dr. John Muter, F.R.S.E., of Kennington Road and The Chatelet, Horley, Surrey, to Barbara (Cherry), youngest daughter of the late Frederick G. Thynne of Riverside, Lodge, Teddington.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Barker, Bartlett, Bennett, Bramwell, Cownley Cracknell, Dodd, Ellington, Glass, Hamnett, Harris, Hill, Hird, Hobbes, Holying, Jesper, Lorimer, Lucas, Reid, Reynolds, Righton, Shattock, Simmons Street, Wall, Wamsley, Ward, Watts, White.

POLITICAL GOSSIP.

Amateur Bill Drafting is apparently coming into high fashion in pharmaceutical circles, for the number of legislative proposals that have been ushered into type since the commencement of the present session is considerable. The latest attempt to put things right emanates from the Edinburgh District Chemists' Trade Association, and is printed on page 561. It may be open to remark that the Association has, by sending petitions to the Lord Chancellor, Lord Salisbury, and others, ignored the Pharmaceutical Council and has totally disregarded the expressed wishes of the Executive of the body corporate. It may also occur to some that the sixty-nine persons constituting the Association were under no special necessity to formulate legislative proposals for the chemists of Great Britain, but it is not our business to pursue such considerations. All that is necessary here is to point out that the proposals themselves are illogical and are diametrically opposed to the policy decided upon by the Council. Without undertaking to say that the suggestions are bad, it must be patent that they will not be converted into clauses of a draft Bill by the present Council.

Clause I. of the Edinburgh Programme is a superfluous recommendation, seeing that it has in principle been in several dratt Pharmacy Bills prepared by the Council. Clause II. is a weak-kneed suggestion to establish a third Schedule of articles which should be labelled "Caution" instead of "Poison" (a fine distinction), but the cream of the clause is the declaration in the concluding paragraph, in which the associated sixty-nine express the opinion that this measure of reform is not urgent. Clause III. is an admirable attempt to enhance the value of the principle of qualification in the proprietor, but the next clause is an altogether antagonistic proposal to allow the delegation of that qualification to any company or "business firm" capable of paying an attractive salary. The Association may be prepared to sacrifice the preamble of the 1868 Act and to depart from the principle of the "education of the vendor," but it is doubtful if the chemists of the adjacent countries of England and Wales will be equally indifferent to their privileges.

The Further Consideration of the Food and Drugs Bill has not yet taken place. It was last down on Thursday, but according to Mr. Balfour's reply to Mr. Channing (Northamptonshire) the progress of the measure depends upon the amount of Government business the House feels disposed to despatch during the present week. Meantime notices of amendment are accumulating. We have already referred to Mr. Strachey's expression of disgust at the ineffectiveness of the Bill as a means of stopping dishonest trading; and we have now to record a notice of motion by Sir John Leng (Dundee), who, somewhat verbosely, stigmatises the Bill as a violation of the principles of free trade, an unprecedented attempt to compel the production and sale of inferior instead of superior articles, and an unconstitutional proposal to abolish the right of trial by jury in cases where heavy fines and imprisonment are imposed for *merely statutory offences*. The italicised words will doubtless appeal to the sense of humour of the House, but it is questionable whether on that account the Ministerial members will accept the invitation of the honourable member for Dundee to proceed no further with the Bill.

On Friday the Seats for Shop Assistants Bill (England and Ireland) passed through its Committee stage without amendment, and was read a third time amid cheers. It has been transferred to the House of Lords and formally read primo, and now awaits second reading. Will their Lordships repent of their rejection of the Bill's Scotch predecessor?

The Annual Desertion of hopeless Parliamentary projects has commenced. Mr. Kearley has dropped his Food Products Bill, Sir Howard Vincent his proposal for amending the Merchandise Marks Act, and Major Rasch his Oysters Bill. It is to be regretted that Sir Stafford Northcote has again been compelled to abandon the Registration of Firms Bill—a measure which, if enacted, would go far towards minimising the evils arising from the practice of trading under false names, and might materially assist the Registrar under the Pharmacy Acts in administering those Acts. Amongst other departures from the Parliamentary arena are the Boilers' Inspection and Registration Bill and the Bills for providing Cheap Trains and for putting down Street Noises.

Sir John Gorst on Monday had to confess to Major Rasch that the persistent questions relating to unqualified dispensers in doctors' surgeries were too much for him. He did not attempt to get out of his tight corner, but admitted with refreshing candour that the Privy Council had no means of knowing the number of accidents arising from the mistakes made by the unqualified dispensers of medical practitioners. This is tantamount to saying that his previous replies on the subject were worthless. Sir John was, however, careful to inform his interrogator that the General Medical Council is reported to have appointed a Committee to consider the representations in reference to the matter forwarded by the Privy Council. What will come of it? The Pharmaceutical Council is, it will be remembered, also engaged in considering the question of unqualified dispensers.

An Irish Decoration.—A proper pride in one's own achievements cannot be ranked among the vulgar vanities, for it is entirely praiseworthy and to be encouraged. When, therefore, the President of the Irish Society considers his Council to have been the exciting cause of the Lord Chancellor's change of front in regard to the Companies Bill, he is to be congratulated on the sturdy confidence he reposes in the efficacy of his Parliamentary weapons. If our Irish brethren have plucked a concession from the Woolsack we certainly do not see why they should not call it a feather and exhibit it in their cap triumphantly. We have no reason to grudge them any success, as the principle for which they are fighting is identical with that for which British pharmacists have nailed their colours to the mast. But there is a suspicion that Mr. Downes may have been misled by coincidence to jump to a flattering conclusion. The condition of mind that led the man in traditional story to recognise the beneficence of Providence in the fact that rivers always flow through large cities is a happy one, but it may, all the same, bring in its train unexpected results.

One of the Results of Mr. Downes' logic seems to be a fixed idea that there is no sympathy with the Irish case on this side of the Channel, and no prospect of help from British pharmacists or from their Society. That is a regrettable error. The two Societies are working, as Mr. Downes shows in the latter portion of his speech to his Council, on absolutely identical lines. Both official bodies are pledged to oppose the pharmacy clause in the Companies Bill, and to seek for the inclusion of pharmacists in the clause relating to the medical profession. Our interests are similar, and it is in the highest degree unfortunate that there should be any room for a suspicion of mutual distrust or want of sympathy.

FOOD AND DRUGS ACT PROSECUTIONS.

Camphorated Oil.—A batch of summonses taken out by the Birmingham Health Committee came before the city magistrates on June 9.—Albert Tibbatts, described as a druggist, 165, Summer Lane [The name Albert Tibbatts does not appear on the Register of Chemists and Druggists for 1899.—Ed. *P.J.*], was charged with selling camphorated oil containing 78 per cent. of foreign oil, not olive oil as required by the British Pharmacopœia. On May 4 Mrs. Annie Bennett, acting under the instructions of an inspector of the Health Department, visited the defendant's shop and purchased a sample, which the City Analyst (Dr. Alfred Hill) certified to contain 78 per cent. of foreign oil.—Defendant urged in excuse that he was accustomed to make two sorts of oil, one with olive oil and camphor for medicinal purposes, and the other with colza and camphor for burning in bicycle lamps, and his boy, who was new to the business, had made a mistake in filling up the stock-bottle. He added that he was always most particular about his tinctures and drugs, getting them from respectable firms and paying good prices.—A fine of £3 and costs was imposed.——Joseph Davis, chemist and druggist, Summer Lane, admitted a charge of selling camphorated oil containing 80 per cent. of mineral oil. Defendant pleaded that he had only recently purchased a copy of the new B.P., and was not acquainted with all its requirements. If the inspector had asked for liniment of camphor, as he would have done under the old order of things, he would have found it made with olive oil.—Inspector Jones, having expressed surprise that a qualified chemist should not have made himself acquainted with the new B.P., although it had been in existence fifteen months, explained to the Bench that formerly they asked for camphor liniment and not camphorated oil, although both were made in the same way, and very

often the liniment was labelled "Camphorated Oil."—Defendant urged that his sample was up to full strength, and he had no intention to cheat.—The Magistrates' Clerk pointed out that mineral oil was so much cheaper than olive oil.—Defendant admitted that this was so. The Stores, he said, had been selling it at 4 ozs. for 3d., and tradesmen were obliged to do the same.—A magistrate remarked that the defendant had no right to protect himself by dishonesty.—Fined £3 and costs. ——William Thompson, chemist and druggist, Summer Lane, was summoned for selling camphorated oil containing 86 per cent. of mineral oil. He admitted the offence, and pleaded in excuse that he had sold the sample not out of the ordinary stock-bottle, but from a bottle that had been overlooked for some time, and discovered owing to the painters being in the shop about the time of the inspector's visit.—Fined £3 and costs.——Hubert Walker, drysalter, 88, Saltley Road, was charged with selling camphorated oil containing 99 per cent. of mineral oil.—The defendant entered into a long explanation as to how his boy, in making the oil, had poured mineral instead of olive oil into the saucepan, and was proceeding to refer to something his mother (who was 78 years of age) had done when Mr. Ryland (a magistrate) interposed with the remark that all he was saying went to show that he ought not to have sold anything for medicinal purposes.—The Magistrates' Clerk (to defendant): What with the boy and the mother you will poison the whole parish.—A fine of £3 and costs was imposed.

SCOTTISH NEWS.

Edinburgh Chemists', Assistants', and Apprentices' Association.—The first botanical excursion of the season took place to Colinton Dell, on Friday, June 2, leaving Caledonian Station at 8.30 p.m. The weather was fine and the ramble was much enjoyed. Owing to the long spell of cold weather it was found that flowering plants were at least a month later than usual, and many generally in full flower at this season were found to be only in bud. Among those in full flower were: *Ulmus campestris*, *Lychnis diurna*, *Stellaria holostea*, *Allium ursinum*, *Scilla nutans*, *Alchemilla vulgaris*, *Fragana vesca*, *Geum urbanum* and *G. nivale*, *Primus padus*, *Valeriana pyreniaca*, *Viola canina*, *Oxalis acetosella*, *Equisetum arvense*, *Mercurialis perennis*, *Petasites vulgaris*, *Tussilago farfara*, and *Arum maculatum*. Messrs. William Duncan and G. Simpson acted as demonstrators, and plant-hunting proceeded vigorously until stopped by darkness, when they walked back to town. The first summer meeting took place on Friday, June 9, when a large number of plants collected by the members were described by Mr. Rutherford Hill. Mr. David Harley, Vice-President, occupied the chair, in the absence of the President, and moved a vote of thanks to Mr. Hill.

IRISH NEWS.

The "Doctor Blaud" Co., Limited.—At the meeting of the General Medical Council, on May 31, when dealing with the Companies (Medical Profession) Bill, 1899, reference was made to "The 'Doctor Blaud' Company, Limited," the objects of which are to carry on or practise the profession or business of medical doctors, physicians, surgeons, apothecaries, pharmaceutical chemists, dentists, midwives, drygoods and patent medicine vendors. The seven signatories to the memorandum of association of the company included five pharmaceutical chemists (Ireland), one mercantile clerk, and one physician and surgeon. At a meeting of the Council last week a letter was read from Mr. Joseph F. Whelan, the physician and surgeon in question, stating that he had severed his connection with the "Dr. Blaud Company," and a similar letter was read from Mr. J. C. McWalter, one of the pharmaceutical chemists.

Pharmaceutical Society of Ireland.—Applications for the undernoted examinations in July next should be lodged with the Registrar not later than 11 o'clock a.m. on the following dates:—For the Preliminary examination, Tuesday, 20th inst.; Pharmaceutical Assistant examination, Monday, 26th inst.; Registered Druggist examination, Tuesday, 27th inst.; Pharmaceutical Licence examination, Wednesday, 28th inst.

The Local Government Board, it is reported, has cancelled the appointment as analyst to an Irish Union of a public analyst who has been a practical chemist for forty years. The Local Government Board has stated that applicants must be shown "to have considerable experience in the analysis of drugs and must have obtained (by examination) a diploma in pharmacy, materia medica, and volumetric examination of drugs from a recognised examining body."

The Various Boards of Guardians are troubled with much fear and trembling and uncertainty as to the requisite remuneration for an analyst. Belfast started off with £50, though a few gentlemen tried futilely to chip it down to £30. Lisburn, with a generosity born of plethoric industry, gave £20 without a twinge. Ballymena offered £10. Newtonards required tenders for "100 samples of medicine." If the object was economy it was defeated, for the various tenders extended from £15 to £45. Armagh advertises for bids "per sample"; the usual fee for an analysis is half-a-guinea. The Larne Guardians are not suspicious; they have absolute confidence in the contractor for drugs and desire the Local Government Board to overlook them.

SCHOOL OF PHARMACY NEWS.

Another Cricket Season is at an End, at least as far as concerns pharmaceutical students, and the record is still unbroken, to be handed down to a future generation. This record was established some years back—the date is not known for certain—and consists of the fact that the team passed through the season without winning a match. Of course there is every excuse for a pharmaceutical student team. In the first place, the cricket season commences just when the student begins to realise that there is such an examination as the Minor, which will require all his energy to pass, and in consequence he can find no superfluous energy to throw away in cricket practices; and whoever found a cricket team of any proficiency unless it did practise? Again, this part of the term is short and only a few matches can be arranged, so very little attraction exists for the student in the shape of special colours, dinners, etc. Yet it must not be said the "Square" is quite without talent, for there certainly has been seen some very good batting and bowling this season, though the cases have not been very numerous. Let us at least hope that those who have spent some of their valuable time at cricket will not feel the want of it in July.

The Fourth Match of the Season, and the last, was played on Saturday, on the old campaigning ground at Shepherd's Bush, against a team representing the Metropolitan School of Pharmacy. It was an ideal afternoon for cricket, our opponents opening their innings at about 3.30 p.m. to the bowling of Messrs. Chapman and Padwick, the latter of whom has shown himself to be a bowler of no mean order. The first two wickets quickly fell to Padwick, when only four runs had been scored, and the "Square" record looked in danger, but, on the appearance of a left-handed batsman, a stand was made, and the score raised to close on 50 runs, when the partnership was broken by an excellent catch by Wild in the long field; none of the remaining batsmen could make any stand, the whole innings closing for 74 runs. The last three wickets fell to Palmer, who had replaced Padwick towards the end, and whose analysis read: 3 overs, 3 wickets, 0 runs. The "Square" then took up the bat, and made a very good start with Garsed and Collinette, but no real stand was made until Stokoe arrived, who showed excellent form, and no doubt saved the "Square" from a crushing defeat, batting most of the time for 18 runs. The innings closed with a total of 66, the Metro.'s thus winning by the narrow margin of eight runs. "Square" team as follows: Messrs. Tibbitt (captain), Palmer, Padwick, Wild, Garsed, Chapman, Gray, Stokoe, Collinette, Carlton, and French. Mr. Greaves, with his usual geniality, acted as umpire.

Partnerships Dissolved.

(From the London Gazette.)

Herbert W. G. Macleod and Sydney E. Tench, Surgeons and General Medical Practitioners, The Turret, Streatham, and 341, Brixton Road, London, S.W.

James Burnett Smith, M.B., M.S., and Duncan Otto MacGregor, Physicians and Surgeons, 52, Camden Square, N.W. Debts will be received and paid by James Burnett Smith.

ENGLISH NEWS.

Midland Pharmaceutical Association.—The following is the text of a circular which the Council of this Association is sending to all registered chemists in the Midlands :—"Dear Sir,—As you are no doubt aware, changes have recently been made in the syllabus of the examinations of the Pharmaceutical Society. By these changes a more extended acquaintance with pure science is required, and there is no doubt but that although a curriculum training for the chemist is not at present enforced, it is now more or less necessary, if the student is to obtain the thorough knowledge of his subjects which is at the present time demanded. This being the case, it is of the greatest importance that first-class teaching suited to the requirements of the pharmacist should be available in the large centres. Birmingham, on account of its central position, and in virtue of its having a University College, should, it is thought, be able to offer exceptional facilities of this kind, and it having been recently ascertained that the authorities of Mason College would, under certain conditions, entertain a scheme for providing pharmacy teaching, a meeting of the Council was held on February 22, 1899, to consider the question. This meeting Professor Hillhouse, of Mason College, was good enough to attend, and those who were present learned from him what the Senate of the College was prepared to recommend the Governors to do, if certain conditions to which he alluded were fulfilled. Professor Hillhouse stated that a six to nine months' course of day teaching suited for pharmaceutical students might be arranged at a fee sufficiently low to place the classes within the reach of all such as were likely to attend, and he pointed out the advantages which the pharmaceutical students especially, and the trade in general, would gain if a first-class scientific training, all cramming being avoided, were made available. The scheme would, of course, be undertaken without any pretence to competition with existing schools, its aim being rather to make for Birmingham an institution similar to that existing in London at Bloomsbury Square. The professors whose lectures the students would attend would number, among others, Professor Percy Frankland, F.R.S., Examiner in Chemistry of the Pharmaceutical Society; Professor Hillhouse, M.A., F.L.S.; Professor Poynting, D.Sc., F.R.S. It is hinted, too, that the Senate of the new University of Birmingham would favourably entertain the suggestion of granting degrees in pharmacy, such degrees to follow examination in chemistry, botany, and materia medica, and to carry with them the title of Bachelor of Science. The Council appointed a Committee which was instructed to consider the scheme and to report to them the best method of getting to know the feeling of chemists with regard to it, with the result that it was decided to send a copy of this letter to each of the chemists in business in the Midlands. It is absolutely necessary, if this project is to be put through, that it should receive every possible support both from members of the Association, and from all chemists in the Midlands, and it is hoped that you will take into full consideration the great importance of this question, affecting as it does the present and future status of those engaged in the drug trade. There is no doubt but that every step taken in the direction of improving the attainments and raising the position of pharmacists cannot but be of service to the trade generally, and the present opportunity should be regarded as one not to be lost."

The Institute of Chemistry.—The annual dinner of the Fellows and Associates of this Institute was held on Thursday, June 8, at the Trocadero Restaurant. The President, Dr. Thomas Stevenson, occupied the chair.—Sir J. Crichton Browne (Treasurer of the Royal Society), responding to the toast of "The Learned Societies and Kindred Institutions," mentioned Professor Dewar's work, which had culminated in the liquefaction of hydrogen. He remarked that it was curious that all the discoveries of science were reflected in lunatic asylums. He had had to examine an inmate of an asylum who used to complain that his enemies persecuted him with electric shocks. On a recent visit he found that this patient had now a worse grievance; he said that his enemies had got liquid air, and that every night when he went to bed they "cold-pricked" him with it. He (Sir J. Crichton Browne), meeting his friend Professor Dewar after that, told him that his fame was established.—The Earl of Desart proposed "The Institute of Chemistry and Its President."—Lord Brampton (better known as Mr. Justice Hawkins) was next called upon, and he said he confessed himself bewildered, for with regard to the science of chemistry ho was as ignorant as a child unborn. He thought it would be a providential thing if all infants could be brought up from their earliest hours with a knowledge of chemistry, so as to know the component elements of condensed milk—what to drink (he supposed it was a liquid) and what to avoid. They would then know what a nurse was administering, and might say, "No Winslow's syrup for me, please." As they progressed in life they should keep up their chemical knowledge. In the evening there was sometimes a restlessness about the muscles of a man's legs which would not enable him to get to his own house. What on earth had happened to him? With a knowledge of chemistry he might put himself right in a moment. In the morning there was occasionally something the matter with the head. But a man with a knowledge of chemistry could put himself right in five minutes. As they got older they got more and more ignorant of what was good for them, and in old age what was to make them young again? Röntgen rays would not do it, and the most stringent interrogatories would be applied to them in vain. They knew there was something wrong; what were they to do? If he said to Dr. Stevenson, "You have done wonders, do something for me," he would reply, "I do not know your constitution," and he (Lord Brampton) would have to go back to the days of Winslow's syrup, and Dr. Stevenson would say, "Here is a drop which may or may not counteract the effect of what your nurse did for you." He should be surprised if that did not put new life into him—if that were possible. They were not done with when they left the scene of this earthly life; it was then said, "Cremate him, or he will be a danger to the survivors." They did not know where they were; they got bewildered, and the more they heard of scientific talk the more they got bewildered. Hearing his friend Sir James Crichton Browne speaking of lunatic asylums, he said to himself, "If I had bothered myself about chemical knowledge as much as I have interested myself in knowing the ways of the world, I should be in a lunatic asylum." This reminded him of what the late Samuel Warren once said to him of a man in an asylum who told him that he (the inmate) was St. Paul. The following year Mr. Warren saw the man again, and greeted him as St. Paul. "Sir," said the inmate, "I am the Shah of Persia." "But," said Mr. Warren, "last year you told me you were St. Paul." "So I did," replied the man, "so I was, so I am; but I am also the Shah of Persia." Here Lord Brampton remarked, "You see, chemistry had been working in his brain a whole twelvemonth." Continuing his narrative, he said: The lunatic explained the matter in the most satisfactory way. "Sir," he said, "you are a fool." "He used an adjective," Lord Brampton interpolated, "but I will not follow him in that." "The fact of it is," said the lunatic, "it is a case of the same father, but a different mother." In conclusion his Lordship paid a very high compliment to Dr. Stevenson, speaking of him as a man who, in giving evidence before him, had always convinced him that he (the doctor) was right, and that it was useless to oppose him; he had admired him for his intelligence and knowledge, and respected him for his courage and candour and truth. For sixty years he had seen the world in all its phases, and if he were asked to name a man who had never deceived him, or ever attempted to do so, he should turn to their President.—The President, in replying, gave a short history of the Society, tracing its advance from its inauguration in the year 1877. For fourteen years they had been an incorporated institution, and now, he said, they possessed a membership of 1000, with 180 registered students.—The concluding toast of "The Guests" was proposed by Dr. Frank Clowes, and responded to by Mr. Justice Cozens-Hardy and Professor Arrhenius.

Pharmaceutical Students Visit Dock Warehouses.—On Friday, June 8, the students of the Imperial College of Chemistry were conducted through the London and St. Katherine's Docks. The ivory warehouse was first visited, where tusks to the value of £80,000 were being sorted, the largest tusk being valued at £90 sterling. The spice floors then claimed attention, and the students had the opportunity of comparing Penang with Zanzibar cloves, whilst the sorting of nutmegs by the men proved of considerable interest. The curious weevil which ravages nutmegs and the methods of patching and sophistication were explained in detail; false mace was shown in contradistinction to true mace, some tons of which were at the time upon the floors; cinchona bark was oxplained and compared. The essential oils were of especial interest, some beautiful specimens of oils of winter-green, cloves, peppermint, cinnamon, and cassia being handed to the students. The iodine warehouses were visited,

and it is astonishing to know that so much iodine is practically lying idle in London. Each keg containing about one hundredweight is valued at £80 sterling, and there are four floors so packed with these kegs that it appears almost impossible to count them, yet each keg bears a distinctive mark and can be found at a moment's notice. The men working in the iodine are relayed so that whilst one gang retire to obtain fresh air the others re-enter and get on with the work. It was explained that the effect of breathing the vapours of iodine is to produce profound sleep. The mercury vaults were inspected; the students saw a seven-pound iron weight floating in a trough of mercury. Lastly, the making of perfumes from pomade was seen and explained *in extenso*, the object of making perfumes in bond being to obtain the drawback on the spirit employed.

Liverpool Chemists' Association.—At the invitation of the President, Mr. Edward Evans, J.P., the Council of this Association journeyed to his country residence, Bronwylfa, near Wrexham, on Saturday, the 3rd inst., and was there entertained to dinner in celebration of the Association's Jubilee. A saloon carriage having been provided at Birkenhead, the party, ably piloted by Messrs. J. J. Evans, W. P. Evans, and Herbert Evans, assisted by Mr. Theo. H. Wardleworth, the General Secretary, left by the 1.40 p.m. train for Wrexham. The weather was all that could be desired, and the beautiful country through which the route lay looked at its best. Arrived at Wrexham, the guests were driven out to Bronwylfa, situated some five miles from the town, and on reaching their destination were received by Mr. Evans, assisted by Miss Evans and Mr. J. J. Evans. Afternoon tea was partaken of on the lawn and a tour of the well-kept grounds and conservatories made by the party, after which games of bowls and croquet were indulged in until dinner, which was served about 7 p.m., at the conclusion of which several toasts were proposed. Mr. Edward Davies, as the *doyen* of the party, in proposing the health of the President paid a high tribute to the sterling qualities exhibited by Mr. Evans both in his connection with the Liverpool Chemists' Association and in his business life, saying that pharmacy in Liverpool in its progress during the last fifty years owed much to the energy and thoroughness of Mr. Evans. After replying to the toast, Mr. Evans gave that of the Liverpool Chemists' Association, of the early days of which he gave many interesting reminiscences. The other toasts were "The Firm of Messrs. Evans, Sons, and Co.," to which Messrs. J. J. Evans, W. P. Evans, and J. H. Evans replied, and "The Ladies," both of which were well received. The journey home was soon accomplished, Liverpool being reached about 12.5 a.m. The members present were Messrs. Bain and Wyatt, Vice-Presidents; W. Wellings, Treasurer; Theo. H. Wardleworth, Secretary; A. C. Abraham, T. F. Abraham, A. S. Buck, R. C. Cowley, E. Davies, J. Hocken, J. T. Hornblower, Prosper H. Marsden, J. Smith, J. J. Smith, J. Swinton, C. Symes, Ph.D, Councillors. The entire company was loud in its praises of the enjoyable outing, and of the manner in which the President and his family had striven to give pleasure to their guests.

Oxford University Junior Scientific Club.—The seventh Robert Boyle lecture in connection with the above Society was delivered on June 6 in the Physiological Lecture Theatre by Professor J. G. Kendrick, F.R.S., of Glasgow University, who took as his subject "The Physiological Perception of Musical Tone." The lecture, which was illustrated by a very fine series of lantern slides, was listened to by a large and appreciative audience. The lecturer began by giving a clear and succinct account of the structure of the ear, describing its various parts and its vascular and nervous systems. He then passed on to a description of the forms of waves, discussing also pitch, beats, the limits of sound, beat tones, and phase. During the lecture a number of striking experiments were made for purposes of illustration. At the conclusion a vote of thanks was proposed by Professor Sir J. S. Burdon-Sanderson, and on being put to the meeting was carried unanimously.

Droitwich as a Health Resort.—For many years the brine-baths at Droitwich have been noted for their efficacy in curing rheumatic troubles, and slowly but surely the town has developed as a health resort. Two fine new brine-bath establishments with swimming baths, three large, well-appointed hotels, and numerous boarding houses have sprung into being within recent years, and these, together with the St. John's Brine Baths Hospital for poor patients, a beautiful public park, new roads and tree-planted avenues, all testify to the growing importance of the quaint old borough, which bids fair to rival some of the foreign spas. On Saturday, June 3, a new railway station was formally opened at Droitwich, on the Great Western Railway, by Sir A. F. Godson, M.P., in the unavoidable absence of Mr. John Corbett, a local landowner, who has done much to further the development of the town. Nearly 200 medical men and representatives of the leading newspapers of the country were present, and it is hoped that the increased railway facilities will prove to be a further incentive for visitors to the baths.

Death of Mr. Lawson Tait.—We regret to announce the death of Mr. Lawson Tait, the eminent Birmingham specialist, which occurred on Tuesday afternoon last at his residence at Llandudno, where he has lived for the last two or three years, going to Birmingham about twice a week only. Mr. Lawson Tait was born in Edinburgh in 1845. While at Heriot's Hospital he gained a scholarship, which opened to him a University career, and he passed through the Arts curriculum at the University of Edinburgh with distinction, subsequently attending the medical school. In 1870 he commenced in private practice in Birmingham, and in the following year assisted in the establishment of the Hospital for Women. It was in connection with this hospital that he established his fame in abdominal surgery. He was an influential friend of the anti-vivisection movement, denouncing experimentation on living animals as "crude in conception, unscientific in its nature, and incapable of being sustained by any accurate or beneficial results applicable to man." Mr. Lawson Tait was a member of the Birmingham Town Council for some years, and in 1886 tried to win a seat in Parliament for Birmingham as a Home Ruler, but was defeated. Among offices held by him at various times was that of Biological Lecturer at the Midland Institute and Professor of Anatomy at the Royal Society of Artists and the School of Design. He was the founder of the Midland Union Natural History Society in 1886, in which year he was offered a knighthood, and again in 1892 a baronetcy was placed at his disposal, but he declined both honours.

Midland Pharmaceutical Association.—At a Council meeting held last week, Mr. Jeffrey Poole was re-elected President. The Vice-Presidents—Mr. John Barclay and Mr. F. H. Alcock—were also re-elected.

Trade Notes.

Messrs. J. F. Macfarlan and Co., Edinburgh, write objecting to the reference made, in the last issue of the *Pharmaceutical Journal*, to "dionin," which they say is not a "new substance" and not "recently introduced." Continuing, they express the opinion that it is quite possible ethylmorphine may occasionally be a more appropriate remedy than methylmorphine (codeine), but they think the fact can hardly yet be regarded as therapeutically established.

Messrs. L. Gaumont and Cie., 25, Cecil Court, Charing Cross Road, London, W.C., announce that they have accepted the important agency of Messrs. Lumière and Fils, of Lyons, for Great Britain, India, and the Colonies, and that they are now their sole representatives in those countries. The firm has a considerable stock of Messrs. Lumière's chief products and manufactures at the above address, including the well-known orthochromatic, panchromatic, and ordinary dry plates; the rigid vitrose films (orthochromatic, panchromatic, and ordinary); chemical products of importance to photographers; the famous Lumière cinematograph machine and collection of over a thousand films. A price-list and particulars of any of these goods will be sent upon receipt of a post-card, if reference be made to the *Pharmaceutical Journal*.

Tabloid Effervescent Medicinal Substances.—Messrs. Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C., send specimen tubes of tabloid caffeine citrate effervescent, B.P., 60 Grs., and tabloid effervescent sodium sulphate, 60 Grs. These preparations are typical of a new series of tabloid effervescent preparations which, in addition to those already mentioned, are made to contain:—Lithium bitartrate

(effervescent), 5 Grs.; lithium citrate (effervescent), B.P., 60 Grs.; lithium citrate (effervescent), 4 Grs.; magnesium citrate (true-effervescent), 60 Grs.; magnesium sulphate (effervescent), B.P., 60 Grs.; magnesium sulphate compound (effervescent); piperazine (effervescent), 5 Grs.; potassium citrate (effervescent), 15 Grs.; sodium phosphate (effervescent), B.P., 60 Grs.; sodium salicylate (effervescent), 5 Grs.

Messrs. James Townsend & Son, chemists' printers, etc., of Exeter and London, submit a set of newly-prepared specialties in chemists' printing for the summer season. These include "Economical" saline wrappers and saline bottle cartons printed to order, labels for syphons, chemical fly-papers, envelopes for lemonade or ginger-beer powder, shampoo powder, etc. A set of these specialties will be sent to any chemist on application to the firm.

Messrs. Burgoyne, Burbidges and Co., 12 and 16, Coleman Street, E.C., send a booklet dealing with xeroform, a non-poisonous, non-irritating, almost odourless and tasteless antiseptic for internal and external use, which is said to be more efficacious and much cheaper in use than iodoform. The booklet is well printed, and contains much useful information concerning xeroform.

Mr. J. E. Lockyer, 87, Evelyn Street, Deptford, London, S.E., submits a specimen packet of his concentrated fixer, a new fixing salt to supersede the bulky sodium hyposulphite. It dissolves very readily in water, the quantity required to make a fixing bath of one pint being four large teaspoonfuls (or a little less than 2 ozs.). It is slightly acid, an advantage for keeping the bath free from discoloration and assisting in hardening the gelatin. It is especially recommended to travellers owing to its concentrated form, and also owing to the fact that although it takes slightly longer to fix than hypo., only one-fourth of the amount of washing is required. This is a distinct advantage when there is a scarcity of fresh water. It is sold in boxes at 6d. and 1s. (containing 1 lb.). Mr. Lockyer also sonds a specimen show-card advertising his metol and hydroquinone developer. The card is extremely neat and attractive, showing a photograph developed by the hydroquinone developer.

Mr. Vincent Wood, "Victoria House," Albion Place, Blackfriars Bridge, in a circular letter to the trade, calls attention to the fact that raw materials for the manufacture of surgical appliances, stockings, etc., etc., have advanced of late to a very great extent, but having prepared against these increased prices, by placing contracts for a large stock of all goods, he has been enabled to keep his well-known high-class goods at the same prices as formerly listed by him. Customers may also be shown over the premises by appointment if it would interest them to see the various articles in course of manufacture. To assist them he is prepared to lend them, free of charge, statuettes under glass shades; plaster legs for exhibiting elastic hosiery; electros for illustrating price-lists; self-measurement forms for use in taking special orders: showcards, circulars, etc.

PERSONAL AND BUSINESS NOTES.

[Notices are inserted free in this column, if sent by persons directly interested or otherwise properly authenticated.]

Messrs. Finsler and Wheeler, late of 8, St. Mary-at-Hill, London, E.C., intimate that their address is now 9, Great Tower Street, London, E.C.

Messrs. Baiss Brothers and Co., of 4, Jewry Street, E.C., and Messrs. H. E. Stevenson and Co., of 130, Southwark Street, S.E., notify that they have amalgamated their respective businesses, which will henceforth be carried on under the style of Baiss Brothers and Stevenson. All communications should be addressed to 4, Jewry Street, London, E.C. The works in Southwark and at Blackhorse Yard, E., will continue to be employed as manufacturing laboratories, and, as hitherto, be under a staff of fully-qualified chemists.

Mr. Alfred Roe, Chemist, Goneva, gained a prize and a diploma in the Swiss Chess Tournament held at Lausanne on June 3 and 4 There were forty-two competitors.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

June 15, 1899.

Markets have been somewhat quiet during past week, while there have been few changes of any importance in values, with the exception that Ipecacuanha is decidedly dearor, while price of Citric Acid has also been advanced. Makers of Morphia, too, advanced their prices. Opium is steady. Quicksilver and Mercurials very firm. Bromides and Iodides, Bismuth and Salts unchanged. The following are particulars of prices actually ruling for some articles of chief interest:—

Acetanilide—Dull and weak at 10½d. to 11d. per lb. for quantity

Acid Carbolic—Quiet but steady at 6⅝d. to 6¼d. per lb. for 35 36° C. *ice crystal* in large drums and overcasks; 7d. to 7¼d., according to quantity and packing, for the 39-40° C. *ice crystal*; and 8d. to 8¼d. per lb. for 39-40° C. *detached crystals*, which is the quality now prescribed by the B.P. *Crude*: 60° F. 2s. 1½d. per gallon, 75° F. 2s. 9d. *Liquid*: 95 to 98 per cent. of pale straw colour 1s. 2d. to 1s. 3d. per gallon in 40-gallon casks.

Acid Citric.—Makers advanced price to 1s. 6½d. per lb. for *crystals* in 5 cwt. casks, and even at this price do not appear to be very free sellers, except in smaller quantity and for early delivery. From second hand, sales have been made in ton lots at 1s. 6d. per lb., there being still buyers at this price. It looks very much as if we shall see even higher prices for the article before the summer is over.

Acid Oxalic.—3d. to 3¼d. per lb. net, delivered free London.

Acid Tartaric—Quiet at 1s. 1d. per lb. for *English* on the spot, and 1s. per lb. *c.i.f.* for *foreign*.

Ammonia Compounds.—*Bromide*, 2s. 2d. per lb. *Carbonate*, 3d. to 4d. per lb., according to packing. *Muriate*: Commercial, free from metals, 25s. 6d. to 27s. 6d. per cwt., while the chemically pure article is quoted 30s. to 32s. 6d. per cwt. *Sal Ammoniac*: Sublimed firsts 35s. per cwt.; seconds 33s.; ditto, crushed for batteries 37s. and 35s. per cwt. respectively. *Sulphate* quiet but steady. Grey prompt, 24 per cent., London, £12 7s. 6d. per ton; Hull prompt, £12 6s. 3d. per ton; Leith prompt, £12 7s. 6d. per ton; Beckton prompt, £12 8s. 9d. to £12 10s. per ton.; July-December, £12 3s. 9d. to £12 5s. per ton; Beckton terms prompt, £12 5s. per ton.

Antimony.—*Regulus* is quoted £39 to £40 per ton, while the *Crude Japan* (*Black Sulphide*) appears to be scarce, especially for future delivery, quotations being nominally £24 10s. per ton landed, and £23 10s. per ton, *c.i.f.*, for arrival.

Ashes.—*Potashes*, 23s. 6d. *Pearlash*, 30s. 6d.

Atropine—Is very firm at 15s. 6d. per oz. for the *sulphate B.P.* and 17s. 10d. per oz. for the *pure alkaloid*.

Bismuth Salts—Unchanged at 5s. per lb. for commercial quality of the *metal*, 5s. 8d. per lb. for the *carbonate*, and 5s. 1d. per lb. for the *subnitrate*.

Borax—Quiet and unchanged at 16s. per cwt. for *crystals*, and 16s. 6d. for *powder*.

Boracic Acid—Steady at 25s. per cwt. for *crystals*, and 27s. for *powder*.

Bromides and Bromine—Are in good demand at unchanged prices.

Camphor—Quiet at unchanged prices, both for the crude and also for the refined article.

Castor Oil—Again easier. Belgian first pressing spot £24 10s. per ton, second pressing spot £22 10s. per ton ex-wharf London; Hull manufactured, £23 5s. to £24 15s. per ton, in barrels 2⅜d.; to 2⅛d. per lb. in cases, ex-wharf London, for prompt delivery,

London pressed, 24s. 6d. per cwt. in barrels; *French*, 23s. to 25s. per cwt.

CHLORIDE OF LIME (BLEACHING POWDER)—Is still quoted £6 per ton on the spot for *English* make.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*: Pure, 1s. to 1s. 3d. per lb.; commercial, 8½d. per gallon. *Benzole*: 50 per cent., 7½d. per gallon; 90 per cent., 7d. *Creosote*: 3½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 4d. per gallon; 90 por cent. at 160° C., 1s.; 90 per cent. at 190° C., 1s. 2d. *Anthracene*: A, 3½d. per unit; B, 2¾d. *Pitch*: 30s. per ton. *Tar*: Crude and refined, 12s. 6d. per barrel, 1⅞d. to 2d. per gallon.

CLOVES.—Privately *Zanzibar* very quiet but steady; small business done includes April-June delivery at 3⅛d.; October-December quoted at 3¼d. None offered in auction.

COCAINE—Remains quiet but very firm at nominally unchanged price. Makers continue to maintain that the scarcity and dearness of the *crude* must shortly lead to an advance in price for the refined product.

CODEIA—Is exceedingly firm at 12s. 6d. to 12s. 9d. per oz., while, in view of the fact that we are getting on so far in the year and gradually approaching time when the increased demand sets in, there is practically no prospect whatever of any reduction in price.

COD LIVER OIL.—The market remains very dull at nominally 58s. to 60s. per barrel, *f.o.b.*, for best new non-congealing *Norwegian* oil, in tin-lined barrels of 25 gallons.

ESSENTIAL OILS—Continue neglected. *Peppermint*: Dementholised *Japan* slightly dearer; business had been done at 3s. 2½d. per lb., *c.i.f.*, for June-August shipment, sellers now, however ask 3s. 4d. per lb. *Menthol* is quiet at 7s. per lb., *c.i.f.*, and 7s. 3d. to 7s. 4½d. per lb. landed for spot delivery.

FISH OILS.—The quantity offered at the auction to-day met with a good demand, and fair prices were obtained. *Newfoundland Whale*: About 33 tuns offered and sold, double compass and stroke, £15; single compass and stroke, £14 to £14 5s.; nick, £12 to £13 5s.; stroke, £10 to £12 10s. *St. Vincent*: About 45 tuns offered and sold, double compass and stroke, £15 10s.; single compass and stroke, £14 10s. to £15 5s.; stroke, £14 to £15; two strokes, £13 to £14 5s.; black, £10 per ton. *Dog Fish*: 1 barrel sold at £5, and 2 barrels *Cod Foots*, £7 5s.

GALLS.—Market for all descriptions remains very quiet. *China* on spot are quoted 59s. to 60s. per cwt.; *Persian* are in very moderate supply, and holders are firm. Quotations are: *Blue*, 62s. 6d. to 65s.; *Green*, 56s. to 57s. 6d.; *White*, 52s. to 53s. 6d. per cwt. For *Smyrna* there is at the moment little or no demand. *Cream of Tartar* quiet at 73s. for first white *crystals*, on the spot; *powder*, 75s. to 76s. 6d., according to percentage, etc.

GINGER.—Smaller supplies of *Cochin* were offered and with fair demand slightly higher rates were realised. Of 789 packages 343 sold, fair to good bold cut and scraped 70s. to 75s., medium some small rather roughly scraped at 42s., small and medium 26s. to 26s. 6d., cut tips 23s.; washed rough fair at 23s. to 24s. *Jamaica*, in fair supply, met a moderate demand at irregular rates; common kinds were difficult of sale at easier prices, middling about steady, whilst the better qualities showed an advance of 2s. to 3s.; of 817 barrels 232 sold, fair to good bright plump 70s. to 72s., medium to good medium 67s. to 69s. 6d., ordinary to good ordinary 57s. 6d. to 64s. 6d., common lean 51s. 6d. to 56s. 6d. 23 bags *St. Lucia* bought in at 57s., also 81 bags fair limed *Japan* at 21s.

GLYCERIN.—*Crude* is steady at about £30 per ton for good refining quality, while *refined* is very quiet at 49s. 6d. to 52s. 6d. for *English* and 52s. 6d. to 57s. 6d., according to brand, for *German* for the best white double-distilled chemically pure 1260° quality, in tins and cases.

IODIDES AND IODINE.—Firm and unchanged.

IPECACUANHA.—There has been a further rise in value of both *Rio* and of the *Carthagena* kinds of this article; last Thursday the price in auction was 14s. 6d. to 14s. 9d. per lb. for *Rio*. Since then 16s. per lb. has been paid, and holders now ask 17s. for this kind and 12s. 6d. to 13s. per lb. for the *Carthagena* variety.

MERCURIALS—Are firm at prices lately quoted, viz., 2s. 10d. per lb. for *Calomel*, and 2s. 6d. per lb. for *Corrosive sublimate*.

MORPHIA.—Somewhat contrary to expectations, makers advanced their price to 4s. 5d. per oz. for the *hydrochlorate powder* (*crystals* 2d. per oz. more), and even at this price it is not possible to buy for delivery before August, the makers being so extremely pressed with orders in execution of existing contracts. In view of the large crop of *Opium*, the price of *Morphia* should rather have receded. There does not, however, now appear much probability of any reduction in price in the immediate future.

OILS (FIXED) AND SPIRITS.—*Linseed* is decidedly firmer. London spot pipes are quoted £20 2s. 6d. to £20 5s. per ton; barrels, £20 10s.; July-August, £20 10s.; September-December, £18 12s. 6d. Hull spot naked, £20; July-August, £19; September-December, £17 7s. 6d. to £17 10s. *Rape* unchanged. Ordinary brown spot, July-August and September-December, £21 15s. Refined spot, £23 to £23 5s. per ton. Ravison naked spot, £17 5s.; July-August and September-December, £17 10s. *Cotton* steady. London crude spot, £15 to £15 2s. 6d. per ton; July-August, £15 5s. Refined, £16 10s. to £17 5s., according to make. Hull naked refined spot £15, July-Aug. £15 5s., Nov.-April £14, crude spot £14, July-Aug. £14 5s. *Olive*: Mogador £30 to £31, Spanish £30 to £32 per ton. *Coconut*: Ceylon spot £25 15s. per ton, landed; June-July £24 2s. 6d., *c.i.f.* Cochin spot £28 10s., landed; May £26 15s., Aug.-Oct. £25 15s., *c.i.f.* *Palm*: Lagos spot £24 10s. *Lubricating Oil*: Pale American spot 5s. 6d. to 7s. per gallon, black 5s. to 5s. 9d., Russian black 5s. to 5s. 6d., pale 5s. 9d. to 8s. *Turpentine* quiet on spot, but firm for forward delivery. American spot, 34s. 3d. per cwt.; June, 31s. 6d.; July, 29s. 9d. to 30s.; August, 28s. 9d.; Sept.-Dec., 28s. 6d.; Jan.-April, 1900, 29s. per cwt. *Petroleum* very firm, although somewhat quiet. Russian, on the spot, is quoted 5⅞d. to 5⅞d. per gallon; Sept.-Dec., 5¼d.; American spot, 5⅝d.; and Sept.-Dec., 5⅝d.; water white spot and Sept.-Dec., 6⅞d. per gallon. *Petroleum Spirit*: American, 9d.; deodorised, 9d. to 9¼d. per gallon.

OPIUM.—Market is quiet but steady, the late advance in makers' price of Morphia not having failed to have a certain impression on the position of the crude drug. Quotations are 10s. to 11s. per lb. for good to fine *druggists'* kinds, 8s. 6d. to 9s. 3d. for seconds and manufacturing, 11s. 3d. to 12s. 6d. for good to fine *soft shipping* qualities, 9s. 6d. to 10s. for seconds ditto. *Persian* is steady at 11s. 3d. to 11s. 6d. per lb. for good to fine, and 10s. 3d. to 10s. 6d. per lb. for lower quality.

PARAFFIN WAX.—*Crude*, 1⅞d. to 2d. per lb. *Refined*, 2¼d. to 3d. per lb.

PHENACETIN—Very quiet at 3s. 4½d. to 3s. 9d. per lb. according to quantity and brand for both *crystals* and *powder*.

PITCH—8s. to 8s. 6d. per cwt.

POTASH COMPOUNDS.—*Bicarbonate*: 32s. 6d. to 35s. per cwt. *Bichromate*: 3½d. per lb. *Chlorate*: *Powder*, 3⅞d. to 4d. per lb.; *crystals*, 3¾d. to 3⅞d. for spot, London delivery. *Permanganate*: One of the largest and best makers of the article, who lately advanced his price to 60s. and 65s. per cwt. for small and large *crystals* respectively in 1-cwt. kegs, insists that the advance will be maintained. There are, however, still sellers in the market at 5s. per cwt. below the above figures. *Prussiate*: Yellow, Beckton make, is quoted 7⅞d. per lb.; other English makes, 8d. to 8½d. per lb.; red, 1s. 1d. to 1s. 2d. per lb.

QUICKSILVER—Is firm at £8 15s. per bottle from the importer, and 1s. per bottle less money from second hand.

QUININE.—After being very quiet and flat, the market has brightened up a little, and sales amounting to about 30,000 ozs. have been made in the speculative market at 1s. 4d. per oz. for spot, 1s. 4¼d. per oz. for August delivery, and 1s. 4⅝d. per oz. for October delivery, for *B. and S.* or *Brunswick Sulphate of Quinine*, in 1000 oz. lots, packed in 100-oz. tins. The makers of these brands still quote 1s. 6d. per oz., in similar quantity and packing, but are, naturally, doing no business in the article. It looks much as if we were going to have another little spurt, but whether it will last, and what the ultimate course of the article will be, is difficult to foresee.

ROSIN.—Strained spot, 4s. 4½d. per cwt. ex wharf.

SHELLAC—Continues very quiet. 100 cases *TN Orange* have been sold at 63s. 6d. per cwt., *c.i.f.*, for Oct.-Dec. steamer shipment. The speculative market has also been dull, *TN* being quoted 68s. per cwt. buyers, and 69s. sellers for August delivery.

SODA COMPOUNDS.—*Crystals* unchanged at 52s. 6d. per ton in bags, and 55s. per ton in barrels, ex-ship London. *Ash*, £5 to £5 10s. per ton, according to percentage, etc. *Bicarbonate*: Commercial, £7 12s. 6d. to £8 per ton, the price of the fully bicarbonated being 19s. 6d. to 20s. 6d. per cwt. *Bichromate*, 2¾d. per lb. *Caustic*: White, 70 per cent., £7 10s. per ton, 60 per cent. costing £1 per ton less. *Hyposulphite* (*Antichlor.*), 6s. 6d. to 8s. 6d. per cwt., according to make, etc. *Iodide*, 11s. 10d. per lb. *Nitrate* is somewhat lower at £7 17s. 6d. per ton for the commercial quality, the refined being quoted at £8 5s. per ton.

Spices (various).—*Black Pepper*: Only small supplies offered, Singapore being bought in at 5½d. and Tellicherry at 5½d. *White Pepper*: Of 279 bags Singapore 86 bags sold, good fair at 8⅞d.; Siam bought in at 8⅝d., and Penang at 8¼d. *Chillies*: 59 bales Zanzibar sold, fair to good, rather stalky, at 32s. to 34s. *Cassia Vera*: 60 bales coarse Padang quill and quillings bought in at 32s. *Cinnamon Chips* quiet; of 28 bags Ceylon 21 sold, fair quillings at 7⅛d.; bark at 2½d. to 2⅞d. *Mace*: Of Penang 5 cases sold, fair pale, slightly broken, at 1s. 7d., broken, 1s. 5d.; 14 packages West Indian sold, fair to good bright, 1s. 6d. to 1s. 9d.; fair red, part broken, at 1s. 5d.; broken and pickings, 1s. 3d. *Pimento*: Slow of sale and lower; of 346 bags only 73 sold, fair at 3¼d.

Sulphate of Copper—Is quiet but firm at £25 to £27 per ton on the spot, according to quantity and make.

Sulphonal.—While the two makers maintain their price of 17s. per lb. for both *crystals* and *powder*, there are sellers from second hand at a tangibly lower price, and the question whether there is not a new maker of the article in the market threatens to become a burning one. Our friends who handle the article will do well to confine their purchase strictly to their immediate requirements.

Tar.—*Stockholm*, 26s. 6d. *Archangel*, 20s. per cwt.

Turmeric—Quiet at somewhat easier quotations. In auction, of 134 bags *Madras* which were offered only 33 bags sold, fiine bright whole bulbs at 17s., good bright finger bought in at 25s. to 28s. Of 354 bags and 378 packets *Cochin* only 132 bags sold, fair finger at 17s. 6d., ditto little mouldy at 17s. to 17s. 3d., bulby ditto at 14s. 6d. per cwt.

Newcastle Chemical Report.

June 14, 1899.

An improved all-round demand for heavy chemicals is experienced. Bleaching Powder is moving freely, with not too much to offer on the open market for forward business. Soda Crystals are a shorter output, owing to the warm weather. Sulphur keeps scarce. Quotations are: Bleaching Powder, £5 7s. 6d. to £5 12s. 6d., according to markets; Soda Crystals, 45s. to 47s. 6d.; Caustic Soda, 70 per cent., £7 to £7 5s.; Soda Ash, 52 per cent., £4 5s.; Alkali, 52 per cent., £5 5s.; Sulphur, £5 per ton.

Liverpool Market Report.

June 14, 1899.

The only alterations in prices from last week are slightly higher rates for Linseed, Linseed Oil, and Spirits of Turpentine, and a decline in Potashes and in Bichromates of Soda and Potash. The amount of business done has only been fair, but prices generally are well maintained.

Canaryseed.—The price for Turkish continues steady at 31s. to 32s. per 464 lbs., with a fair amount of inquiry; 150 tons sold at 30s. 6d. to 31s. per 464 lbs.

Ginger.—300 bags of fair Sierra Leone made 17s. 6d. per cwt., ex-quay.

Honey.—Sales of more Californian at 40s. per cwt. are reported.

Kola Nuts (dried)—Have been selling in small quantity at 1¼d. per lb.

Linseed—Is very firm in every position. Sales of River Plate on the spot have been made at 33s. 9d. per 416 lbs., and Calcutta at 35s. 9d. to 36s. To arrive, Calcutta May and June shipment has sold at 35s. 9d., and June-July at 37s. 6d. River Plate to arrive is 34s. to 34s. 3d. per 416 lbs.

Oils (Fixed) and Spirits.—*Castor* is firm, both spot and forward. Calcutta "good seconds" is offering at 2¾d. to 2⅞d. per lb., and French 1st pressure at 2⅞d. to 2¾d., 2nd pressure at 2⅝d. per lb., Madras 2¾d. *Olive* is very steady at an average rate of £31 to £32 per tun. *Linseed* has advanced to 21s. and 21s. 6d. per cwt. for Liverpool makes and closes firm. *Cottonseed*: Liverpool-pressed oil is quiet at 17s. to 17s. 6d. per cwt. *Spirits of Turpentine* have advanced to 35s. 3d. per cwt., sellers being very firm.

Potash Salts.—*Bichromate* lower; 3¼d. per lb. *Cream of Tartar* is neglected at 73s. to 77s. 6d. per cwt. *Potashes* have dropped to 23s. per cwt., and are very quiet. *Pearlashes* are nominal at 32s. per cwt. *Prussiate* is very firm at 8¼d. to 8½d. per lb.

Soda Salts.—*Bicarbonate*, £6 5s. to £6 15s. per ton. *Bichromate*, 2½d. per lb. *Caustic*, 76 to 77 per cent., £7 15s. per ton. *Crystals*, £3 per ton. *Nitrate*, 8s. to 8s. 3d. per cwt.

Manchester Chemical Report.

June 14, 1899.

The excellent feeling reported for some time past in heavy chemicals continues, and as the results of the trading have been fairly satisfactory, it is not too sanguine a prediction that prices have now touched bottom and that the poor ordinary shareholders in the great companies will have a share in the general prosperity. The appearance of things in the Transvaal has caused a lull in Yellow Prussiate of Potash especially, which is about a farthing a pound under last week. Sulphate of Copper is decidedly lower here, £26 5s. to £26 15s. best brands. Coal Tar products are dull, although Creosote and Pitch are well maintained. Solvent Naphtha easy, but the demand for miscible continues and prices are firm. Brown Acetate of Lime is steady, English being quoted £4 15s., and American about £5, *c.i.f.* Both Epsom and Glauber salts have an upward tendency, being scarce. Arsenic ranges from £18 5s. to £18 10s. per ton ex-ship, Garston. In other respects there is little change. The Board of Trade returns show that chemicals have participated in the general increase of our export trade. The imports of chemicals, etc., show a decrease of 4 per cent.; but, on the other hand, chemicals and chemical and medicinal preparations amount to £870,275, as against £667,962, an increase of no less than 30·3 per cent. In alkalies there is an increase of 12·1 per cent., and in bleaching materials of 19·5 per cent., and it is noteworthy that the discrepancy in values is not so great as last month. The black spot is still the exports to the United States of heavy chemicals, which are given as under:—Bleaching materials: 1899, 68,493 cwts.; 1898, 62,038 cwts. Alkali: 1899, 41,620 cwts.; 1898, 67,855, a very serious difference over 1897, which is returned as 230,597 cwts.

TERMS OF SUBSCRIPTION.

The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

The annual subscription, commencing at any time and including postage, to any address throughout the world is

£1. 0s. 0d.

For the convenience of subscribers the following table of amounts payable in foreign currencies for one year's subscription is given:—

United States	$4.90	Russia	Rbls. 6.20
Canada	$4.90	France	Fr. 25.25
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Netherlands	Fl. 12.10	Portugal	Reis. 6.50

Subscriptions, which are payable in advance, and Advertisements should be addressed to the Publishers, 5, Serle Street, Lincoln's Inn, London, W.C. Postal Orders should be made payable at Lincoln's Inn, W.C., to Street Brothers. Cheques should be crossed "London Joint Stock Bank."

Publications Received.

Catalogue of the Dental Manufacturing Co., Ltd. Pp. x. + 618. London: 6, 8, and 10, Lexington Street, W. 1899. From the Publishers.

A Manual of Organic Materia Medica. By John M. Maisch, Ph.M., Phar.D. Seventh edition. Revised by Henry C. C. Maisch, Ph.G., Ph.D. With 285 illustrations. Pp. 523. Price 10s. 6d. London: Henry Kimpton, 82, High Holborn, W.C. 1899. From the Publishers.

EXCHANGE.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Gas Fittings, Pendants, Brackets, etc.; almost new; Gas Meter (Wet), Cowan's make; 6 Welsbach Incandescent burners. Bargain to clear. J. Botham, Higher Broughton, Manchester.

Twenty-cell continuous-current Leclanché battery (Maw's) in good condition, only requires re-charging; procured for clerk with writer's cramp, not now required; cost 4 guineas; any reasonable offer.—Stephens, chemist, Stone.

5 doz. each 1s. 6d. and 2s. 9d. Holloway's wine; carboys, jars, shop-rounds, and small stock; state requirements; cash or exchange.—Floyd and Co., Bury St. Edmunds.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Calendar for the Week.

Sunday, June 18. 3rd after Trinity. Sun rises, 3.44; sets, 8.17.

Monday, June 19. Sun rises, 3.44; sets, 8.17.

ROYAL GEOGRAPHICAL SOCIETY, University of London, W., at 8.30 p.m.—Paper on "Exploration between Lake Rudolf and the Nile," by Colonel J. R. L. Macdonald.

Tuesday, June 20. Sun rises, 3.44; sets, 8.18.

PROPRIETARY ARTICLES TRADE ASSOCIATION, Agricultural Hall, Islington, N., at 3.30 p.m.—Meeting of Council.

ROYAL PHOTOGRAPHIC SOCIETY, 12, Hanover Square, W., at 8 p.m.—Paper on "Retouching," by Redmond Barrett.

Wednesday, June 21. Sun rises, 3.45; sets, 8.18.

PROPRIETARY ARTICLES TRADE ASSOCIATION, Agricultural Hall, Islington, N., at 3 p.m.—Annual meeting, followed at 6.45 by the Annual Dinner.

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover Square, W., at 7.30 p.m.—An exhibition of wild flowers with microscopes, by C. Beck, followed at 8 p.m. by a paper on "Notes on Some Sponges belonging to the Clionidæ, obtained at Madeira," by Jas. Yate Johnson.

Thursday, June 22. Sun rises, 3.45; sets, 8.18.

Friday, June 23. ○ 2.20 A. Sun rises, 3.45; sets, 8.18.

Saturday, June 24. Sun rises, 3.45; sets, 8.18.

WHOLESALE CHEMISTS' AND DRUGGISTS' CRICKET CHAMPIONSHIP at Brockley.—Stevenson and Howell's *v.* Kepler.

Obituary.

Lidwell.—On June 8, at 5, Cornwallis Terrace, Hastings, of acute pneumonia, Joshua Edward Lidwell, Pharmaceutical Chemist, London, S.W. Aged 75. Mr. Lidwell had been a member of the Pharmaceutical Society since 1853.

Holmes.—On June 10, Alfred John Holmes, Pharmaceutical Chemist, Upton Park, E. Aged 49.

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Receiving Order in Bankruptcy.

(From the London Gazette.)

C. E. Doring, G. E. Doring and Paul H. Doring (trading as the Continental Bottle Company), Merchants, Billiter Square Buildings, E.C.

Marriage.

Attfield—Herkomer.—On June 14, at the parish church, Bushey, Herts, by the Rev. G. Montague Hall, assisted by the Rev. James Herbert Harvey, M.A., cousin of the bridegroom, Donald Harvey Attfield, M.A., M.B., son of John Attfield, F.R.S., of Watford, Herts, to Elsa Anna Iola Herkomer, elder daughter of Hubert Herkomer, R.A., of Bushey, Herts.

Advertisements.

(Received too late for Classification).

ST. MARY'S HOSPITAL, PADDINGTON, W.

CONTRACTS FOR DRUGS, CHEMICALS, DRESSINGS, &c.

THE Board of Management invite Tenders for the supply of Drugs, Chemicals, Dressings, &c., for the three months commencing July 15, 1899. Forms of Tender may be obtained on application to the Secretary. Tenders must be delivered, in sealed envelopes, addressed to the undersigned, marked "Tender for Drugs," on or before Saturday, June 24, at noon. The Board does not bind itself to accept the lowest or any Tender, and reserves to itself the right of accepting the whole or any part of a Tender, or striking out any item.

By Order,
THOMAS RYAN, Secretary.

WHOLESALE.—Advertiser, 21, seeks post as Laboratory Assistant or otherwise. All-round scientific training. Good-class retail and some wholesale experience. FORMALIN, 34, Hill Rise, Richmond.

FOR a short time, as JUNIOR in City pharmacy. Good-class experience. Weekly engagement. Photography. CIMICIFUGA, 120, Mallinson Rd., S.W.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc., have been received from Messrs. Abram, Attfield, Baillière, Barge, Bartlett Beale, Bennett, Braneb, Bromhead, Brunt, Burroughs, Chase, Coles, Cox, Davis Durrant, Endle, Farr, Ferrall, Finsler, Gammie, Harris, Hebb, Herbert, Hill Kelf, Marsden, Mawson, Moaghan, Morris, Naylor, Newsome, Nops, O'Halloran Roe, Scott, Smith, Snell, Spenee, Street, Tindall, Turnbull, Wellcome, Wilkins Wood.

POLITICAL GOSSIP.

The Bye-Election in South Edinburgh, which has just resulted in the return of Mr. Arthur Dewar in the Liberal interest, has not furnished much in the way of public ventilation of pharmaceutical grievances, but it is satisfactory to know that the opportunity afforded of saying a word in due season on behalf of pharmacy has not been thrown away. The Southport methods of campaigning apparently do not commend themselves to the Edinburgh chemists, but they may be congratulated that the new member has already been interviewed by a prominent Scottish pharmacist, to whom he expressed his willingness to oppose the Lord Chancellor's Pharmacy Bill, or the pharmacy clause of the Companies Bill, should either of them reach the House of Commons. Mr. Dewar is a son of the well-known distiller of Perth, and was called to the Scottish Bar in 1885. He is a graduate of Edinburgh University.

More Vacancies.—The trouble in the Osgoldcross Division of Yorkshire, alluded to in this column on June 10 (*ante*, 532*a*), has resulted in the retirement of Sir John Austin (L.). The constituency, which is a wide and awkward one to organise, is quite unprepared for a contest. Sir John is said to contemplate offering himself for re-election, and the name of Sir Christopher Furness is also mentioned as a candidate. If, as is hinted, Sir Wilfrid Lawson sends down a temperance candidate, a very pretty three-cornered fight may be expected. Goole chemists should watch their opportunity. In Oldham a vacancy has arisen through the death of Mr. Ascroft (C.), who did most useful public work both in and out of Parliament. It is to be feared that his colleague, Mr. J. F. Oswald, Q.C., who has been in bad health for a lengthy period, will feel urged to retire and thus plunge the borough into the turmoil of a big contest. The probability of this eventuality should stimulate local registered persons to think of their interests.

Mr. Balfour's Statement on Monday respecting the probable course of business during the remainder of the Session seems to indicate that one need not fret and fume unduly concerning the further progress of the Companies Bill, which still lies inert in the shadow of the Woolsack. After expressing, in the approved tone of official optimism, the hope that a goodly number of Ministerial measures, including the Food and Drugs Bill, might be passed before the House rose in August, the First Lord moved the usual resolution appropriating the working hours of Parliament for Government business, and submitted to the customary heckling. Then arose Mr. Swift MacNeill (Donegal), with all the conscious rectitude befitting the author of "Titled Corruption," and solemnly denounced the Government for not introducing the Bill for regulating limited companies—a Bill which, as he justly observed, had been mentioned four times in as many Queen's Speeches and had not been introduced once. It was a scandal, continued Mr. MacNeill to shelve this matter in view of the gigantic system of fraud which had grown up under the present law, and he wanted to have an explanation and a definite statement of the intentions of the Goverment. Finally, the honourable gentleman, with a touch of that rich imagery and delightful fusion of metaphor ever associated with the land of his birth, asked whether the delay with the Bill was due to the House "being honeycombed and moth-eaten by company promoters." Mr. Balfour, however, gave neither explanation nor definite statement in reply, and contented himself with the absolutely safe observation that the Bill was not before the House, and that it was not etiquette to discuss the business of "another place." The clear deduction to be drawn from the episode is that Mr. Balfour foresees the prospect of having to abandon some of the items already on his programme, and is not prepared to encourage the Lords to send down so fruitful a source of controversy as the present Companies Bill. There is every reason to think that the Watch Committee of the Society's Law and Parliamentary Committee will not be under the necessity of formulating marching orders this year. Mr. Reckitt (Scarborough) inquired of the Leader of the House why the Government had failed to redeem its promise to introduce the official Petroleum Bill. Mr. Balfour seemed to have become unaware that any such promise had been made; but his interrogator pointed out that when the Petroleum Bill promoted by himself (Mr. Reckitt) was thrown out in March, the Under-Secretary for the Home Department promised a Government Bill for this Session, and he also recalled the fact that the promise has been renewed on more than one occasion subsequently in answer to questions in the House. Mr. Balfour, being unable to controvert these facts, said that if the promise had been made it would be carried out. Hence there is a prospect of a new Petroleum Bill being introduced at the eleventh hour to technically fulfil the terms of a virtually broken pledge.

The Midwives Bill, which has been remarkable on account of its having furnished the text for a series of claptrap advertisements in the public press, has been dropped. It entered its second stage early in the Session, but the debate was adjourned by the clock and was never resumed. Mr. Bousfield's Weights and Measures Bill, on which some comment has already been made, is also amongst the abandoned Bills this week.

Carbolic Acid.—In the House of Commons on Tuesday, Sir John Leng had on the paper notice of a question to the Home Secretary, asking whether his attention had been drawn to the large number of deaths by poisoning from carbolic acid, whether coroners had repeatedly urged that it should only be sold as a scheduled poison, as was the case in Ireland, whether the Pharmaceutical Society had without effect asked the Privy Council to add it to the list of poisons controlled by the Pharmacy Act, and whether it was proposed to deal with the subject in any other way. When the question was reached, however, Sir John Leng intimated that he wished to postpone it, and it consequently stands over for the present.

FOREIGN NEWS.

Pharmacie Swann.—In view of the somewhat different reports published regarding the sale of the Pharmacie Swann, at Paris, it may be mentioned that the facts contained in the Journal report were gleaned from the new proprietors As stated in that report, there was every necessity for haste in selling, for the School of Pharmacy had upon more than one occasion announced to the family that "no extension of time would be granted beyond the regulation twelve months"; therefore a hasty sale was imperative to avoid the only alternative, "closing up." Moreover, the family retain no interest in the "trade marks, etc.," which were fully bought up and secured by M. Borney in full conformity to the law relative to such matters. Neither is any regret whatever felt by the English chemists in Paris that the pharmacy has fallen into other than English hands; that fact was clearly recognised as inevitable, inasmuch as there is no Englishman, except those already in business in France, who has the necessary diploma for carrying on the business, and without that he cannot by law be the proprietor. On the contrary, M. Borney is well known and greatly respected by his English *confrères*, and pleasure rather than regret is felt that he intends to continue to play an active part in the affairs of the house with which he has for so many years been associated. M. Soudain, the proprietor of the retail department, is certainly less known, but is none the less welcome in the ranks of proprietors for that fact.

Production of Inflammable Gases by the Human Body.—Monsieur Jacowlef, in an article to the *Vratch*, cites two instances in his own practice of the production of inflammable gases by the human body. A peculiar phenomenon bearing upon this same fact was referred to in the pages of the *Pharmaceutical Journal* a few weeks ago. The first of these cases was a youth of twenty-five years, suffering from secondary syphilis, and having numerous sores in the region of the anus. It was whilst treating these plaques by the Paquelin apparatus that the author observed that the gases expelled by the anus are inflammable. The patient being placed in the gynecological position for treatment, the doctor approached the illuminated end of the apparatus towards the anus. Just then a loud detonation was heard and a flame shot out, burning the beard and moustaches of the operator. The patient experienced no other inconvenience beyond receiving a slight scorching in the perineal region. The second case was that of a man suffering from dilatation of the stomach, constipation, and colics. He had frequently fetid and sour eructations equally as disagreeable for those about him as for himself. In order to mask somewhat the odour of his breath, he became an inveterate smoker, and one day, whilst lighting a cigarette with a match, he dispersed wind by the nose, the gas immediately igniting and producing a large flame, which burned his moustache

and nose. The same mishap befell this unfortunate human gas-works more than once, says the learned doctor.

Dissolution of the Belgian Federation of Pharmaceutical Societies.—In consequence of a lack of harmony in affairs, the Liegois Society of Pharmacy has deemed it expedient to withdraw from the Federation, The Flanders Society of Pharmacy had previously done the same thing. Last May the Bureau of the Federation convoked a general assembly, the order of the day being "the election of members of the Bureau." At this reunion the Bureau declared that, in consequence of the retreat of the two principal societies, the Federation lacked the resources essential to its prosperity and therefore no longer justified its title, consequently dissolution of the Federation was proposed. But here a difficulty presented itself. The statutes exacted the unanimity of the delegates to propose dissolution, and that unanimity was apparently impossible to obtain. The Bureau therefore declined to accept the renewal of its mandate. Thus the Federation without a Bureau, being impracticable, was dissolved and liquidators were appointed. This mode of suicide certainly does not lack originality.

Murderous Assault upon a Chemist's Assistant.—Recently, Monsieur Viret, chemist's assistant, who was on night duty at the Pharmacie Houssaye, 54, Rue de la Bienfaisance, Paris, was rung up. He dressed and descended to admit an individual, who said that he was sent by Dr. X—— to request him to immediately prepare for him a potion. This the assistant proceeded to do, when suddenly the stranger dealt him a couple of heavy blows on the head with an instrument he must have had concealed up his sleeve. His cries for help were heard by M. Houssaye, who arrived in time to see the would-be assassin quit the pharmacy. Two constables, seeing him flee, ran after him, but failed to overtake him. The assistant, whose condition was considered very grave, was removed to the hospital.

Society of Pharmaciens of Passy-la-Muette.—Under the above title the pharmaciens of the Sixteenth Arrondissement of Paris have just founded a Friendly Society of Pharmaciens, having for its object the drawing together of its members in the bonds of brotherhood and the defence of their common interests. Monsieur Nedelec has been chosen as President and Monsieur Fraysse as Secretary. Desirous of demonstrating its vitality, this Society has decided that its members shall close their pharmacies on Sundays at noon, during the months of August and September, and thus sets an example which their *confrères* in other arrondissements would do well to follow. A similar arrangement exists at Rheims and at Bordeaux, with just this difference, that each pharmacist takes his turn at remaining open for urgent cases, whilst the others enjoy their seventh day. Nowhere else in France does this harmony seem to exist among pharmacists. At Nice, Pharmacie Nicholls is the only one which closes all day on Sundays. As for the pharmacists of the English quarter of Paris, they might with advantage come to some sort of arrangement whereby greater freedom might be given to their assistants on Sundays, for English and American visitors are the greatest sinners in Sunday buying, and tooth brushes, soap, perfumes, and cachous could just as well stand over till Monday or be thought of on Saturday night. Cases of urgency are indeed rare, hence some such scheme as that adopted at Rheims and Bordeaux would be very welcome.

Dr. Henri de Rothschild's Work.—Dr. Henri de Rothschild—whose good work in the Picpus quarter, where he has opened a model dispensary and supplies sterilised milk to the poor women who are nursing infants, is well known—has just published a little book which will be of the greatest service to his humble clients. It is brought out, says the *Figaro*, by Masson, at a price suited to the most modest purse, and gives in the simplest language the latest and most scientific directions for the feeding and weaning of young children.

Annual Banquet of the Faculty of Medicine and Pharmacy.—The professors and demonstrators of the Faculty of Medicine and Pharmacy of Bordeaux held their annual banquet last Thursday, June 15, at the Restaurant du Parc-Bordelais. M. le Dr. de Nabias proposed a toast to his colleagues, and heartily congratulated the professors who had won honorific distinctions; to M. le Professeur Jolyet, nominated Chevalier de la Legion d'Honneur; and to M. Coyne, nominated National Correspondent of the Academie de Medicine. M. le Professeur Picot, who so successfully organised this confraternal reunion, replied in suitable terms to the toast of the *doyen*.

IRISH NEWS.

A Coming Test Case.—One of the most important cases that have arisen of late years is about to be faced by the Pharmaceutical Society of Ireland. It is in the nature of a test as to whether an apothecary who does not come within the meaning of the old Apothecaries Act of 1791, and who has not served the statutory period of apprenticeship, can in turn train a youth to enter for the licence examination of the Pharmaceutical Society of Ireland. The Council of the Society contends that the latter-day apothecary, as matured in Mary Street, is outside the provisions of the Act of 1791, and that to admit such a contingency would be prejudicial to the public welfare. It is intended to leave no stone unturned to maintain the right to exclude from the examinations all candidates who have not legally served their apprenticeship to a properly qualified pharmaceutical chemist, and it is not improbable that, failing to convince a Dublin judge and jury of the *raison d'être* of their case, the Society will appeal, as far as the House of Lords if necessary.

The Vexed Question of whether the Irish are an ancient race or whether they are just a yestere'en offshoot from the British Celts has at length been satisfactorily settled in favour of their hoary genealogy. A relic—not a bundle of '98 pikes this time nor a "round tower of other days"—has been brought to light in a bog in Monaghan. It is a stone crucible, hard and gritty, and having a diameter of 2 inches. Antiquarians versed in the lore of strata calculate from the depth (15 feet) of the turf bed that as peat forms 6 feet in the 1000 years, therefore the crucible belonged to some ancient Irish alchemist who flourished 600 years before the Christian era, so that the sobriquet for Ireland will now be "Isle of Scientists." As John Dillon has announced his intention to thwart the scientific instruction of the Irish people this session, it is quite evident that this age-old crucible is a mute and minatory beckoning of his forefathers to "beware and do it not."

SCOTTISH NEWS.

Edinburgh and District Chemists' Trade Association.—The sixth annual excursion took place to classic Birnam, in Perthshire, on Wednesday, June 14, when a large company of members and friends left Waverley Station by special saloon train at 8.35 a.m. for Perth, where they were joined by contingents from the Glasgow and Dundee Associations. Carriages were in waiting and the weather perfect. The drive of fifteen miles was by way of Bankfoot to Birnam Hotel, the headquarters for the day. Among places of interest seen on the outward journey were, Scone Palace, the Castle of Ruthven, or Huntingtower, Luncarty House and Denmarkfield—where a great battle was fought between the Danes and the Scots in 999. Rohallim Lodge and lochs and Duncan's Hill, with the ruins of a royal stronghold on its summit, were passed on the left, while on the right were seen Birnam Hall and the well-wooded grounds of Murthly Castle. The road then skirted the base of the famous Birnam Hill—well-known to readers of "Macbeth"—which formed a prominent object on the left till Birnam was reached. Despite the dry and dusty roads the drive was greatly enjoyed and all were ready to do ample justice to the excellent dinner served in the magnificent Baronial Hall of the Birnam Hotel, which is one of the finest in Scotland. Mr. David McLaren, President of the Association, presided, and Mr. George Lunan, Vice Chairman, occupied the croupier's chair. After dinner, Mr. David Storrar proposed "Success to the Edinburgh Chemists' Annual Picnic," which was acknowledged by the Chairman and Mr. C. F. Henry, Hon. Secretary. The large company of about 170 then proceeded to enjoy in various ways the interval until teatime—at 4 o'clock. After tea the return journey to Perth was begun at 5.15 p.m., going by way of Dunkeld, Caputh Bridge, Murthly, and Stanley, and reaching Perth about 8 p.m. Here the special train was in waiting and Edinburgh was reached in safety about 9 45 p.m. By general consent the picnic was declared the most successful that has yet been held, and there were universal expressions of gratitude and thanks to Mr. Henry and his committee for the excellent arrangements made.

Pouring Nitric Acid Down a Man's Back.—George White, miner, Slamannan, was at Falkirk Sheriff Court on Monday last sent to prison for three months for pouring nitric acid down the backs of two men, causing them great pain. An agent for accused said it was a drunken frolic. Accused and some companions in a public-house had been jesting and pouring water down each other's backs, and the complainer, without thinking, used the contents of a small bottle of nitric acid.

Glasgow and West of Scotland School of Pharmacy.—Last Saturday the students of this School, with their Principal (Mr. Barrie), visited Dixon's Ironworks—"Dixon's Blazes"—where the various stages in the manufacture were pleasantly explained by one of the chemical staff. Many varieties of ore (Scottish, English, and Spanish) are used which do not bear the text-book names; limestone from Wales and coal from local pits. Attached to the furnaces are condensers and scrubbers, in which the gases evolved from the coal during the smelting, after heating the air-blast, are freed from tarry and ammoniacal compounds. Numerous specimens of ores, etc., were allowed the students for future reference.

Early Closing in Dundee.—The chemists whose shops are in the centre of Dundee have agreed to close at 8 o'clock prompt (Saturdays excepted) during June, July, and August, and in this connection a writer in one of the local papers remarks that "One would think that the chemists of Dundee would be the happiest, heartiest, and healthiest of men. They are monopolists, and are not as other men in that they do not require to advertise their wares or to indulge in great clearing sales. They have ready to their hand specifics warranted to cure all the ills that flesh is heir to, and yet they do not appear to be 'a happy band.'" The writer then states that he has discovered the secret of the chemists' sadness. "It is because they are cribbed, cabined, and confined in their shops" from Monday morning till late on Saturday night, and even, in some cases, on Sunday, and "apparently the chemists in the centre of the city have come to the conclusion that something must be done. It is to be hoped that the masters and assistants will discover the value of the small and short respite, and so set to work to maintain 8 o'clock closing all the year round, and to secure a weekly half-holiday. The theory that the public require the chemist to keep open until late hours is all humbug."

Aberdeen Pharmaceutical Association.—The annual outing of this Association is to take place on Tuesday, July 27. The route chosen is through the Glen of Drumtochty to Clatterin' Brigs, Fettercairn, and Laurencekirk. Any friends on holiday wishing to join can be supplied with tickets on application to the Hon. Sec., Mr. John Cruickshank, 42, George Street, Aberdeen.

PROPRIETARY ARTICLES TRADE ASSOCIATION.

The undermentioned have been elected to represent the manufacturing, wholesale and retail sections of the Association on the Council. No contest has taken place for seats on the wholesale and retail sections of the Council. The ten seats vacant in the manufacturers' section of the Council, however, were contested. Manufacturers' Section: Bovril, Ltd., 30, Farringdon Street, E.C.; Edgar's Croup Lotion, Ltd., Dartford; Garratt, J. E., 124, Southwark Street, S.E.; Gosnell, J., and Co., Ltd., 93, Upper Thames Street, E.C.; Keene and Ashwell, Ltd., 74, New Bond Street, W.; Lambert, W., and Co., 173, Seymour Place, W.; Möller, Peter, 18, High Holborn, W.C.; Newton, Chambers and Co., Ltd., Thorncliffe, Sheffield; Powell, Thomas, Ltd., Blackfriars, S.E.; Sanitas Co., Ltd., Bethnal Green, E. Wholesale Section: Barclay and Sons, Ltd., 95, Farringdon Street, E.C.; Burgoyne, Burbidges and Co., 16, Coleman Street, E.C.; Edwards, W., and Sons, 157, Queen Victoria Street, E.C.; Evans, Gadd and Co., Fore Street, Exeter; Hirst, Brooke and Hirst, Ltd., Leeds; Maw, Son and Thompson, 7, Aldersgate Street, E.C.; May, Roberts and Co., 9, Clerkenwell Road, E.C.; Newbery, F., and Sons, 1, King Edward Street, E.C.; Sanger, John, and Sons, 2, Winsley Street, W.; Sutton, W., and Co., 76, Chiswell Street, E.C. Retail Section: Barnes, W. R., Upton Manor, E.; Bunker, C. J. G., Great Dover Street, S.E.; Cooper, A., South Kensington, S.W.; Garrett, T. P., Newport; Hessell, James, Highgate Road, N.W.; Jones, W., Birmingham; Pickard, S. N., Bradford; Rowsell, F., Exeter; Nicholls, Theophilus, South Hackney, N.E.; Wokes, T. S., Liverpool.

The first meeting of the newly-elected Council was held at the Chemists' Exhibition, Agricultural Hall, on Tuesday, June 20. The meeting was well attended, and Mr. CHARLES SANGER occupied the chair. The minutes of the previous meeting having been read and confirmed, the CHAIRMAN said he was sorry to announce that owing to ill health the President, Mr. H. J. Hall, was unable to be present. The first business before the meeting was the appointment of officers for the ensuing year, and Presidents. He had much pleasure in moving that Mr. A. Tebbutt, of Messrs. W. Sutton and Co., be appointed. It was a rule of the Association that each section should have the honour of appointing a President each year in rotation, and it was now the turn of the Wholesale Section. He was quite sure that nobody could be found more suitable for the position than Mr. Tebbutt.—Mr. A. COOPER seconded, and the motion was carried amidst acclamation.—Mr. Sanger then quitted the chair in favour of the new President.—The PRESIDENT expressed his thanks for the honour conferred upon him, and assured those present that he was heart and soul in the P.A.T.A. movement and that he would do everything in his power to advance their interests.—The election of Vice-Presidents was next proceeded with, Mr F. W. Powell, of Messrs. Thomas Powell, Ltd., being appointed as the Manufacturers' Vice-President. Mr. E. P. Sanger as Vice-President of the Wholesale Section, and Mr. W. R. Barnes as Vice-President of the Retail Section.—On the motion of Mr. PICKARD, seconded by Mr. SANGER, Mr. Barclay was re-appointed Hon. Treasurer.—A long discussion then arose as to the procedure of business at the annual meeting, Mr. C. SANGER moving that the annual report be submitted to the annual meeting, and the PRESIDENT informed the meeting that any resolution on the Defence Scheme should be deferred until after the adoption of the annual report.—This was seconded by Mr. ROWSELL, and, after some further discussion, Mr. Sanger's resolution was unanimously adopted.—Mr. GLYN-JONES having explained the Defence Scheme drawn up by the Executive Committee at some length, the meeting concluded with a vote of thanks to the President.

ANNUAL MEETING.

The annual meeting of the Association was held in the Exhibition Buildings, Agricultural Hall, on Wednesday, June 21, the chair being taken by the new President, Mr. A. Tebbutt.

The adoption of the annual report was moved by the CHAIRMAN, seconded by Mr. A. COOPER, and carried unanimously.

The TREASURER'S statement showed an income of £1287 6s. 7d., with balance in hand of £21 1s. 11d.

TRADE DEFENCE SECTION.

Mr. SANGER moved the organisation of a Trade Defence Section, which Mr. ROWSELL forcibly seconded.

Mr. GLYN-JONES (Secretary) then explained the proposed scheme, which briefly is: In order that the fund should be successfully established it would be necessary that a reserve of at least £1000 should be raised. It is suggested that this be done by the formation of a company with £1 shares, payable 5s. on application, the remainder to be called up if occasion arises. Having secured a sufficient reserve, the Committee consider that an additional subscription of 10s. 6d. per shop be paid by members of the Association, if they desire to benefit by the Defence Fund, and that this should entitle them to legal defence to an amount not exceeding £10, when prosecuted under any of the following Trade Acts, and any others which may be added at the discretion of the governing body:—

Apothecaries Act (1815).
Dentists Act (1878).
Veterinary Surgeons Act (1881).
Sale of Food and Drugs Act (1875 and 1879).
Weights and Measures Act (1878 and 1889).
Petroleum Acts (1871 and 1879).
Explosive Acts.
Shop Hours Act (1892).
Excise laws affecting the trade.

Non-members of the Proprietary Articles Trade Association should be required to pay a subscription of £1 1s. per shop. That it be clearly understood that any subscriber to the fund be entitled to the costs of his defence up to the amount of £10, whether guilty or not, but that the Association, in the event of a conviction, would not pay any fine incurred, nor costs of prosecution, the Association simply guaranteeing the best possible defence. That members should be able to obtain legal advice on any trade matter from the Association's solicitor, through the Secretary. That members be indemnified to the amount of £500 against any mistake occurring in any shop for which a subscription has been paid,

in dispensing or retailing, by which a customer suffers damage. The speaker then went on to show that the membership of the P.A.T.A., now standing between 3000 and 4000, did not represent the entire good wishes of the trade; in fact, many who were not paying members were strong sympathisers of the movement. It was proposed that the Committee to work this section should consist of ten retail members and ten shareholder members. An active discussion ensued on the various points, there being no doubt the different speakers were enthusiastic in their support of the proposals as a whole.

Replying to questions, Mr. GLYN-JONES said the Fund would not be available for defending cases brought by the Pharmaceutical Society. The Committee could not be alternately prosecutors and defenders. It was proposed to appoint a legal adviser in London, to whom all cases would be referred, and in cases going into Court he (the solicitor) would, if desirable, instruct local solicitors to defend the case, or would, if thought still more desirable by the Executive, personally conduct the case. In such towns as Plymouth and Exeter, where the local associations had hon. solicitors already appointed, such solicitors would doubtless be selected to act under the proposed scheme. With regard to the suggestion as to the proposed fee (10s. 6d.) being too high, he could not at present offer any hope of it being worked for less, at least until it had been tried for two or three years, when the question could be reconsidered. Under this scheme a defendant would, if the Executive thought a wrongful conviction had been made, carry the case to the higher courts, costing the Fund probably £300 to £500.

Several speakers gave their personal experience as to the carrying out of the various Acts, and were of opinion that many local authorities appeared anxious to at all costs secure convictions.

On being put to the meeting the resolutions were carried unanimously.

STAMPED MEDICINE ACT.

Mr. WARD suggested that the Executive should approach the Inland Revenue authorities and induce them, if possible, to raise the medicine licence to 7s. 6d. or 10s., and confine it to chemists.

Mr. GLYN-JONES pointed out the hopelessness of the latter suggestion inasmuch as of 30,000 licences issued there were only about 8000 chemists in business. He regretted that severe cutting was not only done by the grocers, as some of the greatest sinners were in the drug trade.

Mr. STOOKE and others bitterly complained of certain manufacturers sending post paid, direct to consumers, patent medicines at less than the wholesale houses can supply.

The usual vote of thanks to the Chairman concluded the meeting.

ANNUAL DINNER.

The annual dinner of the Association was held in the Grand Saloon of the Royal Agricultural Hall on Wednesday evening, the chair being taken by Mr. A. TEBBUTT at 7 p.m., and supported by a party numbering between 90 and 100, including many ladies. A capital repast of six courses was served by the caterers, Messrs. Probyn & Co., and after the loyal toasts had been disposed of,

Mr. J. H. WILSON, J.P., proposed "The Proprietary Articles Trade Association," in submitting which he said it had entirely revolutionised the feelings between the manufacturers, wholesalers, and retailers, and he valued the indirect influence quite as much as the direct. He appreciated the acumen that brought so many manufacturers to their side, but he did not like those who hunted both with the hare and the hounds. An association that had gained a thousand a year new members could not be considered in a decaying condition. It was now proved to the world that the P.A.T.A. was a living force, and the position of their Secretary in the recent poll was conclusive evidence of their strength. In him they would find he was no round man in the square hole.

Mr. GLYN-JONES, replying, was proud at occupying a seat on the Council of the Pharmaceutical Society, and thought men who sat on public bodies should have views and stand by them. Whilst willing to hear all that may be brought forward, he should never agree to support measures without the fullest information be given thereon. Referring to the P.A.T.A., he said profits had been put into the retailers' pockets which he had no hesitation in saying would not have been obtained without the existence of their organisation. It was said the P.A.T.A. was dormant, but the policy of the Executive was not to cry their victories from the housetops.

"The Ladies" was submitted by Mr. P. C. EDGAR, and humorously responded to by Mr. C. J. G. BUNKER.

"The President and Officers" was submitted by Mr. S. N. PICKARD, who eulogised the various officers, laying stress upon the almost superhuman efforts of their Secretary.

The PRESIDENT responded and doubted if many present knew the amount of work involved in carrying on the business of the P.A.T.A. He doubted if it were possible to point to any trade organisation that had grown so rapidly as the P.A.T.A. The efforts of certain manufacturers to secure local arrangements as to a minimum selling price of certain articles was practically the effect of the P.A.T.A.

"The Trade Press" was submitted by Mr. A. COOPER, F.C.S., and responded to by Mr. A. C. WOOTTON.

"The Chemists' Exhibition" was given by Mr. G. R. BARCLAY, and responded to by Mr. HEAP, in the unavoidable absence of Mr. J. F. Cantwell.

Songs and music interspersed the programme, which brought a pleasant gathering to a close at 10 p.m.

ENGLISH NEWS.

The Spalding Poisoning Case.—Mr. A. H. Molson, the seller of the poison in this case, writes to say that the statement respecting himself at page 557 is wrong, and that he never made the acknowledgment there attributed to him. In reply, the following passage is quoted from a report of the adjourned inquest which appeared in the *Lincolnshire, Boston, and Spalding Free Press* of May 30 last:—"Algernon H. Molson, of Spalding, said he was a qualified druggist, and was manager for the Talbot Herbal Remedies Co., Ltd., at their Spalding Branch, on the New Road, Spalding. He detailed to the jury the circumstances of the sale of poisons to the prisoner, as already given in full before the magistrates. Questioned as to whether he personally knew the prisoner, Edward Bell, he replied that he did not know him as 'Edward Bell' until Saturday, April 22. On that day he sold him two ounces of laudanum and one ounce of white mercury, Bell stating that the laudanum was wanted for toothache and the mercury for rat poison. He showed witness that he thoroughly understood how to use the poison, and when asked whether there was anyone in the town who knew him, he said there was not that night, but his employer, Mr. T. Clayton, came to Spalding market every Thursday. . . . When he (Bell) came again on the following Monday and asked for more mercury, he did express surprise at him coming again so soon, and the man told him that he had used it all, and found eight rats dead from it. He sold him another ounce of mercury, and Bell then asked for something stronger, and mentioned arsenic. Witness told him he had no arsenic, but he had some strychnine, and he then asked for sixpennyworth, which was supplied him—one drachm."

The Royal Photographic Society's Exhibition.—It is announced that the forty-eighth annual exhibition of this Society will be held from September 25 to November 11, in the Gallery of the Royal Society of Painters in Water Colours, 5A, Pall Mall East, S.W. The exhibition will be inaugurated on Saturday, September 23, by a private view, followed in the evening by a conversazione.

Chemists' Assistants' Association.—The following is the list of officers of the above Association appointed for the ensuing Session: President, Mr. F. W. Gamble; Vice-Presidents, Mr. H. Hymans and Mr. C. Morley; Hon. Vice-President, Mr. T. Morley Taylor; Treasurer, Mr. C. J. Strother; Secretaries, Mr. J. Evans (literary) and Mr. A. C. Latreille (financial). The balance sheet of the Association for the Session 1898-99 shows a balance in hand of £117 14s., being an increase for the year of £9 6s.

Manchester College of Pharmacy.—On Saturday, the students of this college, accompanied by the Principal, Mr. Chas. Turner, F.C.S., spent a most enjoyable time exploring the beauties of the country about Buxton and Millers Dale. The party entrained at Manchester for Buxton, from whence they walked through Ashwood Dale to Millers Dale, the flora of the district being examined and collected as the party went along. Tea was obtained at Millers Dale, and the return journey to Buxton was made by waggonette and was thoroughly enjoyed.

The botanical specimens obtained were very numerous, and included the following :—*Draparanaldia plumosa*, *Ulothrix*, various *Conferoideæ*, *Listera ovata*, *Lemna minor*, *Ranunculus aquatilis*, *Helianthemum vulgare*, *Stellaria holostea*, *Geranium linidum*, *Alchemilla vulgaris*, *Poterium sanguisorba*, *Ceratophyllum demersum*, *Salix caprea*, *Heracleum sphondylium*, *Stachys sylvatica*, *Chenopodium bonus-henricus*, *Ajuga reptans*, *Saxifraga hypnoides*, *Schrophularia nodosa*, *Veronica chamœdrys*, *Asperula odorata*, *Galium cruciatum*, *Valeriana officinalis* and *doica*, *Lactuca muralis*, *Petasites vulgaris*, *Achillea millefolium*.

Cattle Poisoning Case.—At the Norfolk and Norwich Assizes last week, the case of Dring *v.* Duff came on for hearing before Mr. Justice Mathew and a common jury. This was a case in which a claim was made for damages suffered by plaintiff's cattle in consequence of the alleged neglect of the defendant's servant. Mr. Wild, in opening, said the plaintiff, John Dring, sued as executor of Edwin Peale, deceased, farmer, of Wymondham, whose farm business plaintiff was carrying on, in conjunction with deceased's sons, for the benefit of the estate. The defendant was Captain Duff, tenant of Stanfield Hall, Wymondham. Plaintiff for years had hired the right of pasturing his cattle on the hall park, and the claim now brought was for damages sustained on account of nine calves which had died, and four which had depreciated in value, owing to the fact that the defendant, by his gardener, placed in a pit which was situate upon the park where the plaintiff had the right of pasturing, certain poisonous plants which caused these effects. There could be no doubt that Captain Duff's gardener had taken a pile of refuse, of vegetable matter, dahlias, tobacco plants, and *Anemone japonica*, and thrown them into a pit on the estate at a spot to which the calves had access. As the result of a post mortem examination, Mr. Francis Sutton, County Analyst, found that the animals had been poisoned, and in the stomach were found traces of tobacco plant and anemone, both of which were poisonous and found in the pit.—Evidence was given by several veterinary surgeons and by Mr. Octavius Corder, a past examiner in botany to the Pharmaceutical Society, who said he had obtained from one plant of the anemone about half-a-teaspoonful of crude extract. He had no hesitation in saying that it would be fatal to anyone who was so unwise as to take it. He had taken one drop of it, and it had caused irritation to his throat for twenty-four hours.—Counsel having addressed the jury on both sides, the judge summed up, and the jury found for plaintiff with damages £78.

Valentine Meat Juice Co. v. Valentine Extract Co.' Ltd.—Mr. Justice Stirling, in the Chancery Division, on Tuesday and Wednesday resumed the hearing of the action of the Valentine Meat Juice Co. *v.* the Valentine Extract Co., Ltd., which was before his Lordship for several days in May.—The plaintiffs asked for an injunction to restrain the defendants and Mr. C. R. Valentine from carrying on business as manufacturers and vendors of any preparation of meat extract or meat juice under any name or title of which the name Valentine or Valentine's should form part, without clearly distinguishing such business from the business of the plaintiffs.—The defendants proceeded to call evidence in support of their contention that the substances prepared by the plaintiffs and defendants did not compete, as the plaintiffs' was a medicinal article and the defendants' a portable food. Most of the witnesses were wholesale grocers who had an interest in the defendant company as shareholders, and their view was that the meat juice of the plaintiffs was sold almost exclusively by chemists, and the globules of meat extract manufactured by the defendants was principally vended by grocers. The witnesses also stated it as their opinion that the get-up of the articles was so different that no confusion would arise.—Mr. Upjohn, Q.C., for the defendants, said the plaintiffs were trying to get an injunction to restrain the defendants from carrying on business under Mr. Valentine's own name, but in the absence of the proof of any fradulent intention, he submitted the plaintiffs had no cause of action. No evidence had been given of any scheme on the part of the defendants to get the plaintiffs' business, and he argued that it had been proved beyond question that the articles manufactured by the plaintiffs and defendants did not compete. In all the cases which had been before the Court where a person had been restrained from trading in his own name there had been proof of fraud and misrepresentation, but the learned counsel submitted that there was an absence of any such proof in this case.

The Fifth Chemists' Exhibition opened on Monday last, in the Agricultural Hall, Islington, London. The stands, numbering 144, were arranged in four avenues, running from front to back of the building. Considerable trouble had been taken by the exhibitors to display their goods to the best advantage, and the effect was at once pleasing and useful. Many former exhibitors appeared this year to be absent, but others had taken their places, amongst the most prominent exhibitors being Aërators, Ltd., Barclay and Sons, Ltd., Bovril Co., Ltd., Bristow and Co., British Machine Co., Ltd., Christy, T., and Co., F. S. Cleaver and Sons, E. Cook and Co., Ltd., Cork Co., Ltd., Cresswell Bros. and Schnitz, Ltd., Cussons, Sons and Co., Daisy, Ltd., Defries and Sons, Ltd., Edwards and Co., Harlene Co., Erasmic Co., Ltd., Milk Sterilising Co., Ltd., Farran and Jackson, Ltd., Fleming's Oil and Chemical Co., Ltd., Ford, Shapland and Co., Fromms' Ext. Co., Ltd., W. Gardner and Sons, J. Gosnell and Co., Ltd., Hearon, Squire and Francis, Howard Bros., Hockin Wilson and Co., Holloways Wine Co., Ltd., Houghton and Son, Howlett and Son, H. Hymans, Ingram and Royle, Ltd., Itsem Household Dyes, Ivory Soap Co., Joseph and Son, Kaputene Syndicate, Ltd., the Keene Co., Kemp and Son, Kutnow and Co., Ltd., H. Marks and Son, Ltd., Maypole Co., Ltd., Mellin's Food, Ltd., Myer and Co., Henri Nestlé, Newball and Mason, F. Newbery and Son, Parke, Davis and Co., A. Peroni, P.A.T.A., Sanger and Sons, Sanitas Co., Ltd., Andreas Saxlehner, Shirley Bros., H. Silverlock, H. Slingsby, Southall Bros. and Barclay, Ltd., Smith, Stephens and Co., Ltd., St. Dalmas and Co., Tidman and Son, Ltd., Timpson and Co., Ltd., Townson and Mercer, W. Toogood, J. Townsend and Son, Vinolia Co., Ltd., W. R. Warner and Co., Wright, Layman and Umney, Wyley's, Ltd., etc. A survey of the stands impressed one with the absence of anything like novelties. Here and there might be seen lines a little out of the usual run, but that was the exception and not the rule ; on the other hand, a feature of this year's exhibition was the development of "packed goods." Several houses are making quite a feature of this department, apparently with considerable mutual advantage. A handsomely-equipped reception pavilion was at the Liverpool Road end of the Hall, where the directors and staff received their friends, and music was provided twice daily by the Ladies' Pompadour Band. Moving pictures were on show, and there were demonstrations (afternoons and evenings) on "Liquid Air," with experiments, "Photography," and "Telephotography," these being conducted by Mr. T. C. Hepworth.

Royal Society's Conversazione.—The second of the receptions held by the Royal Society took place on Wednesday evening last at the Society's rooms in Burlington House. The hall and staircases were richly adorned with plants, and for some time the rooms were very crowded. The guests were received by Lord and Lady Kelvin. The exhibits were, to a large extent, the same as those which were shown at the May *soirée*. The series of Japanese paintings exhibited by Mr. W. Gowland showed the different modes of depicting animal and plant life practised by some of the great masters of the art of painting in Japan. Sir Martin Conway exhibited views in the Bolivian Andes on the screen by means of the lantern. Dr. Francisco Moreno showed a superb series of photographs and photographic panoramas illustrative of scenery in Patagonia. The models of the Turbinia, of a torpedo-boat destroyer, and an Atlantic liner of 38,000 i.h.p. were of special interest. For more reasons than one Mrs. Ayrton's experiments on the hissing of the electric arc attracted considerable attention. Quite a novelty was Professor Haddon's collection of polished stone implements from the Baram district, Sarawak, Borneo. This was the first public exhibition of the results of the important expedition to Torres Straits and Borneo, from which Professor Haddon has just returned. The Milne horizontal-pendulum seismograph, with specimen of the seismograms yielded by it, exhibited by the Seismological Committee of the British Association, was also new. It is a specimen of the earthquake records which are now being kept at a considerable number of stations established at widely separated localities. In addition to the Andean views of Sir Martin Conway, Dr. Tempest Anderson exhibited in the lecture-room, by means of the lantern, some very striking views of Vesuvius in eruption, and Mr. Herbert Jackson showed experiments displaying some new phenomena of phosphorescence.

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ISSUE OF 25,000 CUMULATIVE £5 PER CEN

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25,000 FIVE PER CENT. CUMULATIVE PREFERE

25,000 ORDINARY SHARES of £5 each - - -

The Preference Shares will be entitled to a fixed cumulative preferential dividend at the rate will al·o be entitled to rank in respect of capital in priority to the Ordinary Shares. The payment Preference Shares. The whole of the Ordinary Shares will be taken by the Vendors, credited as fu Shares of £5 each are offered for Subscription at par, payable as follows: On Application, 10s. per

DIRECTORS.

EGGLESTON BURROWS. | HENRY GARNETT.
JAMES HILLS HARTRIDGE. | WILLIAM PINNEY.
FLETCHER J. E. WELCH.

Bankers.—PARR'S BANK, Lim., 4, Bartholomew Lane, E.C., High St. Camden Town, N.W., and Branches.

Auditors.—PRICE, WATERHOUSE & CO., 3, Fredericks Pl., Old Jewry, E.C.; PRIDEAUX, BOOKER, FRERE & CO., 48, Lincoln's Inn Fields, W.C.

Solicitors for the Company.—HOLLAMS, SONS, COWARD & HAWKSLEY, Mincing Lane, E.C.

Solicitors for the Vendors.—RADFORD & FRANKLAND, 40, Chancery Lane, W.C.

Brokers.—R. NIVISON & CO., 8, Finch Lane, E.C.

Secretary.—A. J. C. MACPHERSON.

Registered Offices.—MALDEN CRESCENT. LONDON. N.W.

"VINOLIA" COMPANY, LIM.

PROSPECTUS.

This Company has been formed to acquire as a going concern, and to carry on and further develop the business of Vinolia Company (Limited), manufacturers of the well-known "Vinolia" Soap.

The business includes other well-known preparations, and also the old-established business which in 1898 was acquired of John Wilton & Sons, Soap and Candle Manufacturers and Tallow Refiners, Carpenter's Road, Stratford, E., with their premises and plant. Since such acquisition extensive alterations and improvements have been made in the buildings and premises, and an entirely new modern soap plant has been laid down, which is now in full working order. A modern glycerine distillery has also lately been erected, and is in operation. The foregoing premises have been extended by the acquirement of a lease of large adjoining buildings and grounds.

The "Vinolia" business was founded in the beginning of the year 1888, and carried on under the trade name of Blondeau et Cie. until April, 1898, when for family reasons it was converted into a private company with a nominal capital of £100,000, under the name of "Vinolia Company, Limited."

Hitherto the business has been, among other things, that of soap-refining, but the company is now in a position to manufacture its "Vinolia" Soaps from crude materials, and avail itself of all the profits directly and indirectly incidental thereto. This will add materially to the profits in the future.

The progress of the business has been steady and continuous, and the valuable connexion extends throughout the United Kingdom and to the Colonies, Africa, India, China, North and South America, and the Continent of Europe. In short, the traveller can easily obtain "Vinolia" Soap in most cities of the world.

The business of the company is protected by various trade marks, registered in countries to which the business extends.

Experience has shown that there is a wide field for the expansion of a well-established business in an article so favourably known as "Vinolia" Soap.

The business will be taken over by the company as a going concern. As from the 31st of August, 1898, the date of the last stocktaking, up to the registration of the company, the profits will be apportioned between the vendors and this company.

The assets to be acquired by the company consist of—

(a) The goodwill and trade marks, patents registered designs, together with the entire stock-in-trade at home and abroad, cash, book debts, and bills receivable.

(b) The leasehold premises, "Vinolia" Works, Malden Crescent, London; the ground lease of the premises, Carpenter's Road, Stratford; the whole comprising factories, warehouses, offices, managers' dwelling houses, stabling, with the plant, machinery, and effects thereon, blocks, dies, &c.

(c) All other property of every kind or description connected with the business.

Since the commencement of the business, the books and accounts have been regularly audited by Prideaux, Booker, Frere & Co., and for the last three years the books have been examined by Price, Waterhouse & Co. The conjoint certificate of these firms is as under:

London, 15th June, 1899.

To the DIRECTORS of the "VINOLIA" COMPANY (Limited).

Gentlemen,—We have examined the books of the "Vinolia" Company (Limited) and of Blondeau et Cie, from whom the business was acquired in August, 1897, for the three years ending 31st August, 1898, and certify that, after charging the whole cost of advertising and all other expenses of the business, with the exception of interest and directors' remuneration, the average annual net profits amounted to £16,665 1s. 0d., the sales and profits of each year being in excess of the year preceding.

r before **MONDAY, the 26th day of JUNE, 1899.**

PREFERENCE SHARES OF £5 EACH.

MPANY, LIM.

PANIES ACTS, 1862 TO 1898).

- £250,000

OLLOWS:

CE SHARES of £5 each - - - - - - £125,000

- - - - - - - - - - - - - - £125,000

5 per cent. per annum, payable half-yearly on 1st April and 1st October in each year, and he 1st October, 1899, will be calculated from the due dates of the respective payments on the pa. up, in part payment of the purchase money 25,000 Five per cent. Cumulative Preference e; on Allotment, £1 10s. per share; on the 31st July, 1899, £3 per share.

The sales from the 1st September, 1898, up to the 31st May, 1899, show an increase over those of the correspond-g period of the preceding financial year.

We are, Gentlemen, yours faithfully,
(Signed) PRICE, WATERHOUSE & CO.
,, PRIDEAUX, BOOKER, FRERE & CO.

The amount required to pay the dividend on the Preference shares is only £6250 per annum.

The price to be paid by the company for the before-mentioned assets and the business as a going concern has en fixed by the vendors at £175,000, payable as follows: As to £50,000 in cash, and as to £125,000 by the allotment the whole of the Ordinary shares of the company as fully paid up. The foregoing issue of Preference shares, with e available assets to be transferred to the company, will, after providing for all the trade liabilities taken over, ave an ample amount for working capital and for development of the business.

The Board of Directors is composed of the directors of the vendor company and heads of important departments, ho have been associated with the business for a long time and are conversant with the commercial and scientific tails of it.

The contract between the vendors and William Pinney, the liquidator of the vendor company of the one part id the company of the other part, for the acquisition by the company of the business and properties before entioned, is dated the 20th day of June, 1899.

The vendors have also made contracts with reference to the promotion of the company and the subscription of rt of its capital, and there are various trading contracts and arrangements in connection with the business, some which may be contracts within the meaning of the 38th section of the Companies Act, 1867. Applicants for shares ill be deemed to have had notice of such contracts and to have agreed with the company, as trustee for the irectors and other persons liable, to waive any claim they may have against them for not more fully complying ith the requirements of the said section, or on the ground that the vendor company stands in a fiduciary position wards this company, or that in the circumstances the directors do not constitute an independent board, and ubscriptions will only be received and allotments made on that condition.

Application will be made in due course for a settlement and official quotation of the Preference shares on the ondon Stock Exchange.

Applications for Preference shares must be made on the accompanying form and forwarded to the bankers of the mpany with the amount of the deposit. If no allotment be made, the deposit will be returned in full, and if the umber of shares allotted be less than the number applied for, the balance will be applied towards the payment due allotment and any excess returned to the applicant.

Failure to pay an instalment on the due date will render all previous payments liable to forfeiture.

Copies of the memorandum and articles of association and of the above-named contract for acquisition of the siness may be inspected at the offices of the solicitors of the company.

Prospectuses and forms of application can be obtained at the company's offices, and of the bankers and brokers.

Malden Crescent, N.W., 20th June, 1899.

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his Form to be filled up and forwarded entire, with cheque or cash, to Parr's Bank, Limited, Bartholomew Lane, London, E.C., or any of their branches.

"VINOLIA" COMPANY, LIMITED.

Application Form for Five per cent. Preference Shares.

Preferential both as to Capital and Dividend.

To the DIRECTORS of "VINOLIA" COMPANY, Limited

GENTLEMEN,—Having paid to the Company's Bankers, Parr's Bank, Limited, the sum of £..... being a deposit of ten shillings per share on application for ..... Five per Cent. Cumulative reference Shares of five pounds each in the above-named company, I request you to allot me that number of shares, and I agree to accept the same or any smaller number that may be allotted to me subject to the memorandum and rticles of association, and upon the terms of the company's prospectus dated the 20th day of June, 1899, and I uthorise you to place my name on the register of members in respect of the shares so allotted to me, and I agree to ay the further instalments upon such allotted shares as the same shall become due as required by the said rospectus. In the event of my not receiving an allotment, the amount to be returned in full. And I agree with he company as trustee for the directors and other persons liable to waive any claim I may have against them for not ore fully complying in the said prospectus with Section 38 of the Companies Act, 1867.

Name (in full) .....

Address .....

.....

Description .....

Date.....June, 1899.

Signature: .....

All cheques to be made payable to bearer, and crossed Parr's Bank (Ltd.), London.

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FOOD AND DRUGS ACT PROSECUTIONS.

Spirit of Nitre.—Lewis Buttle Ross, pharmaceutical chemist, of Great Driffield, was summoned at Driffield County Police Court for having sold 6 ozs. of spirit of nitre to Superintendent Clarkson, which was not of the proper strength. The latter sent a sample for analysis, and the certificate from Mr. Baynes was to the effect that the sample contained only 0·914 per cent. of nitrous ether instead of 1·75 per cent., as required by the B.P.—Mr. Ross sent a letter to the Bench, explaining that the spirit was a volatile preparation, and the hot weather and frequent opening of the bottle would account for the loss in strength.—The case was dismissed with a caution, defendant to pay the costs, 3s.

Milk of Sulphur.—On June 10, at Shipston-on-Stour, Messrs. T. W. Coleman, Ltd., grocers, of Banbury, were charged with selling milk of sulphur adulterated with 44·5 per cent. of calcium sulphate. Defendants pleaded guilty, but stated that the article was sold in the same condition as received from the wholesale house. Fined 10s., and 13s. costs.——Thomas Loten, chemist and druggist, of Hornsea, was fined £1 and costs at Leven Petty Sessions, on June 14, for selling milk of sulphur certified to contain 49·35 per cent. of calcium sulphate. The defence was that the sample had been in stock for several years, and defendant was not aware that milk of sulphur is now an official article.——At Hull, on Wednesday, June 14, Geo. Kirk, chemist and druggist, Hallgate, Cottingham, was summoned for selling milk of sulphur adulterated with 19 per cent. of calcium sulphate.—Superintendent Weal gave evidence with reference to taking a sample of milk of sulphur from the defendant's shop.—Mr. Jas. Baynes, county analyst, said the drug must either have been carelessly manufactured or wilfully adulterated.—The magistrates decided to send the remaining sample to Somerset House for analysis.

Trade Notes.

Aërators Limited send a copy of the 'Handbook of Sparklets and Their Uses,' written by A. Johnstone Campbell, with the object of making it clear to the general public how the "sparkle" in aërated drinks originates. As the author remarks, drinkers of aërated beverages imbibe those liquids as a matter of course, without giving much thought to the cause of the "sparkle"; still less does it occur to them that it might not be difficult to prepare their own sparkling drinks. But that can now readily be done by resorting to the use of liquid carbon dioxide as contained in the small pear-shaped drops called "Sparklets." These are made of mild steel plates, contain 2 or 5 grammes of liquefied carbon dioxide (according to size), and are securely closed with caps of tempered steel. In use, the cap is pierced by a fixed pin in the stopper of the special bottle supplied for the purpose and the carbon dioxide, reassuming its gaseous form, escapes into the bottle and thoroughly aërates any liquid contained therein. The whole operation is as simple as A B C, and there does not appear to be the least risk of accident in carrying it out. Rain water thus aërated becomes equal to the best simple aërated water on the market, and, by the use of specially made tablets, excellent soda, potash, seltzer, or other mineral water can readily be produced. Again, fruit powders, etc., are supplied by the makers of the "Sparklets," so that lemonade, ginger ale, and other pleasantly flavoured aërated drinks can be made fresh at will. Claret, burgundy, or any other still wine becomes doubly attractive and agreeable after being "sparkletted," whilst sparkling wines which have gone flat can be freshened up in a marvellous manner. The results of a series of experiments with "Sparklets" prove that the claims of the makers are thoroughly well founded, and anyone who procures and peruses a copy of Mr. Campbell's 'Handbook' need not hesitate for a moment to satisfy the desire to test the apparatus which is sure to be aroused.

Messrs. Wright, Layman, and Umney, of 48 and 50, Southwark Street, 66 and 68, Park Street, and Union Hall, London, S.E., have converted their business into a limited liability company, but the whole of the issue of ordinary and preference shares is taken by the present partners and no alteration whatever is made in the conduct of the business, the conversion being simply and solely for family reasons. The capital is £100,000, divided nto 50,000 ordinary shares of £1 each and 50,000 preference shares of £1 each. The company takes over as and from January 1, 1899, the late firm's business of wholesale and export druggists and manufacturing chemists, drug millers, distillers, soap manufacturers, &c., and all rights in connection with Wright's coal tar specialties. The first subscribers are the present partners—Charles Umney, Charles Noel Layman, Herbert Cassin Wright, Ernest Blakesley Layman, John Charles Umney, Frederick Noel Layman. Ernest Albert Umney, who are the first directors, with Charles Umney as managing director.

Vinolia Company, Limited.—This company has been formed to acquire as a going concern the business of Vinolia Company, Limited, manufacturers of "Vinolia" soap. The capital is fixed at £250,000, half in 5 per cent. cumulative preference shares and half in ordinary shares of £5 each, of which the vendors take all the ordinary shares, together with £50,000 in cash as the purchase money. Only average net profits for the past three years are given in the auditors' certificates, but they state that the sales and profits of each year were in excess of the year preceding. The board of the new company is composed of the directors of the vendor company and heads of important departments. The objectionable waiver clause is inserted not only with regard to contracts, but also because the directors do not constitute an independent board. As the amount required to meet the preference dividend is only £6250, and the average profits are certified at £16,665, the preference shares seem a fair speculative investment. Brands of soap, it must not be forgotten, have only a fleeting popularity unless kept constantly before the public by extensive advertising. Just now "Vinolia" is very popular.—A. J. W., in the *Daily Chronicle.*

PERSONAL AND BUSINESS NOTES.

[Notices are inserted free in this column, if sent by persons directly interested or otherwise properly authenticated.]

Mr. W. H. Hills (Pembroke College, Cambridge), son of Mr. Walter Hills, past President of the Pharmaceutical Society, was successful in passing the recent Natural Sciences Tripos Examination.

Mr. R. Payne (Caius College, Cambridge), pharmaceutical chemist, was one of the successful candidates at the recent Natural Sciences Tripos Examination.

Mr. T. Jones (from Messrs. Bain and Co., Lime Street, Liverpool) has purchased the business recently carried on by Mr. A. Begg, at 47, Hall Lane, Liverpool.

Messrs. Long and Strickland, The Bognor Pharmacy, Bognor-on-Sea, intimate that they have a well-appointed dark-room, for the use of amateur photographers and tourists, and are dealers in photographic materials.

Mr. T. H. Hustwick, of Wellington, New Zealand, pharmaceutical chemist, has been appointed Analyst and Expert to the Customs department, and Inspector of Explosives for the Colony of New Zealand. Mr. Hustwick is an old "Square" man.

Mr. Alfred Russell Fox, chemist and druggist, Sheffield, has been elected a Fellow of the Linnean Society.

Mr. Standen, Government Quinologist, Madras, has been deputed to visit Java to study the system of planting cinchona and manufacturing quinine there.

Mr. J. Armstedt Ray, L.P.S.I., Dublin, has been appointed analyst to the Limavady Board of Guardians. There were four applicants for the post.

Sir Charles Cameron, public chemist, Dublin, has been invited to surrender his position as analyst to the County Limerick Council on the ground that by the appointment of a local chemist the analyses of drugs and medicines will be made more expeditiously. Sir Charles has held the office for over twenty-five years.

MARKET REPORT.

The quotations here given are in all cases the lowest cash prices for bulk quantities, and often the articles quoted have to be sorted in order to suit the requirements of the retail pharmacist. The cost of freightage from the chemical and drug works to the various distributing centres must also be considered. It is important that these conditions should be borne in mind in making any comparison between the prices quoted and those of the wholesale drug trade.

London Report.

JUNE 22, 1899.

Business in drugs and chemicals has been somewhat quiet during past week, partly owing to the season of the year and partly, no doubt, in consequence of the near approach of the time when most houses in the trade take stock. Quinine continues a puzzle even to the best-informed, while Sulphonal has also now become a mystery. Ipecacuanha maintained its high value up to after to-day's auctions. It now remains to be seen whether the report of fresh supplies to the extent of nearly 80 bales will not have a weakening effect. Opium is rather firmer, especially for Persian. Morphia very scarce for early delivery. Codeia firm. So far the expected advance in Cocaine has not come off; it is, however, still confidently predicted. Quicksilver and Mercurials are firm. Acid Citric also very firm. Bromides and Iodides in good demand at unchanged prices. Cod-liver Oil and Glycerine very quiet. Linseed Oil dearer. Rape Oil very firm. Sulphate of Ammonia is also rather dearer again. Permanganate of Potash has at last taken a turn for the better. Acid Carbolic is steady and in good demand. The following are prices actually ruling for some articles of chief interest :—

ACETANILIDE—Weak at 10½d. to 1s. per lb., according to quantity.

ACID CARBOLIC—Continues in fair demand at steady prices, viz., 6⅝d. to 6¾d. per lb. for the 35-36° C. *Ice Crystal*, according to quantity and make, packed in large drums and overcasks. 7d. to 7¼d. per lb. for the 39-40° C. *Ice Crystal*, anp 8d. to 8¼d. for the 39-40° C. *B.P.* quality, in *detached crystals*. *Crude*, 60° F., 2s. 1½d. per gallon; 75° F., 2s. 9d. per gallon; *Liquid*, 95-98 per cent. of pale straw colour, 1s. 2d. to 1s. 3d. per gallon, in 40-gallon casks.

ACID CITRIC.—Price is very firm at 1s. 7d. per lb. for *crystals* in 5-cwt. casks from the makers, and perhaps ½d. per lb. less from second hand.

ACID TARTARIC.—*English* 1s. 1d. per lb. on the spot, *foreign* 1s., *c.i.f.*

AMMONIA COMPOUNDS—Are practically unchanged from last week, with the exception that *Sulphate* is rather firmer.

ANTIMONY.—*Regulus* is quoted at £39 to £40 per ton and *crude Japan* (*Black Sulphide*) 24s. per cwt. landed terms.

ASHES.—*Pot*, 24s.; *Pearl*, 31s.

BLEACHING POWDER—*English* is still quoted £6 per ton.

BORAX AND BORACIC ACID—Are quiet and unchanged.

CASTOR OIL.—Market is the turn harder, both for *East Indian* and *Belgian*, without, however, any appreciable change in price.

BISMUTH AND SALTS—Are without change.

BROMIDES AND BROMINE.—The demand continues good, while makers' prices remain unaltered.

CAMPHOR.—Market for *crude* is quiet. Importers, however, are somewhat firmer in their ideas, quoting *Japan* 132s. 6d. per cwt., *c.i.f.*, and *China* 124s.; from second hand nothing is offered. Market for *refined* remains steady at unchanged prices.

CINCHONA BARK.—At Tuesday's auctions only quite limited supplies were brought forward, amounting to 717 packages of all descriptions, against 4628 packages at the preceding sales. There was a good demand, and about two-thirds found buyers at fully last Dutch sales' rates to rather dearer, the average unit being 1½d. to 1⅝d. *Ceylon*: 244 bales offered and 154 bales sold, according to analysis: Succirubra stem chips and shavings, fair to good at 3⅜d. to 4d.; Hybrid natural stem chips 3¼d., Hybrid root 3¾d. *East Indian*: Of 323 bales offered 241 bales sold, Red, fair stem chips at 4½d.; Officinalis stem chips and shavings, ordinary to fair 2⅜d. to 4½d., good 5¾d; renewed ditto, common to good rich at 3½d. to 6¾d. *Java*: 38 cases and 84 bags offered and 89 packages sold, Ledger stem chips, fair to good at 5¾d. to 8¾d., ditto branch at 6d. to 6⅝d., ditto root at 4¾d. to 7⅝d., good silvery quill at 6d. *South American*: 28 cases Bolivian cultivated Calisaya quills offered and bought in at 10½d.

CLOVES.—Privately, practically no speculative business doing, quoted prices being—June-August, 3 3/32d., and October-December, 3 5/32d. Small supplies of *Zanzibar* at auction sold at firm rates; fair to good at 3⅛d. to 3¼d., dull and stalky at 3d.

COAL TAR DISTILLATION PRODUCTS.—*Toluol*: Commercial, 8½d. per gallon; pure, 1s. 2d. to 1s. 3d. per lb. *Benzole* steady at 7¼d. per gallon for the 50 per cent. on spot (20,000 gallons July-December sold at 8d.), and 6½d. per gallon for the 90 per cent., for prompt delivery. *Creosote*: 3½d. per gallon. *Crude Naphtha*: 30 per cent. at 120° C., 3d. per gallon. *Solvent Naphtha*: 95 per cent. at 160° C., 1s. 4d. per gallon; 90 per cent. at 160° C., 1s. 1d. per gallon; 90 per cent. at 190° C., 1s. 2d. per gallon. *Anthracene*: A, 3½d. per unit; B, 2½d. *Pitch*: 30s. per ton, *f.o.b.* *Tar*: Crude and refined, 12s. 6d. per barrel, 2d. per gallon.

COCAINE.—Makers still quote 11s. 3d. to 11s. 9d. per oz., according to brand, for the *Hydrochlorate* in 25-oz. tins, and for 100 oz. lots, but are not free sellers thereat. Everything appears to point to the probability of decidedly higher prices in the not too remote future.

CODEIA—Is very firm at 12s. 6d. to 12s. 9d. per oz. for the pure, and 1s. per oz. less for the salts.

COD-LIVER OIL.—Market remains quiet at nominally unchanged prices.

CREAM OF TARTAR—Firm at about previous rates.

ESSENTIAL OILS—Continue very dull. H.G.H. *Oil of Peppermint* is quoted 5s. down to 4s. 11d. per 5-case lots.

GALLS—Remain very quiet, business in same being quite restricted. *China*, usual shape, are quoted 60s. per cwt. *Persian* have been in slight demand, but firmness of holders checks business. For arrival small sales of *blues* have been made at about late rates, while *greens* and *whites* are not offering. *Smyrna* are in moderate supply, but meet with very little inquiry.

GINGER.—*Cochin* went off slowly, holders being firm; of about 800 packages 209 sold, cut kinds fetching rather better prices, native cut medium and small 40s. to 41s., small some medium 29s. to 30s., fair bright washed rough bought in at 24s. to 25s. *Jamaica*, in good supply, met less demand; of 919 packages 125 sold, good bright plump at 75s. to 78s., fair bright ditto at 70s., good medium 67s. to 68s., ordinary to good ordinary 54s. to 63s., common dark Rhatoon 46s. 6d. to 51s. 6d. Four barrels *Barbadoes* sold at 57s. 6d.

GLYCERIN.—There is no change to report in the position of this article, either as regards *crude* or *refined*.

IODIDES AND IODINE—Are unchanged in price and in good steady demand.

MERCURIALS—Are firm at unchanged prices.

MORPHIA.—Price remains nominally 4s. 6d. per oz. for the *Hydrochlorate Salt* in *powder* and 2d. per oz. more for *crystals*. It is, however, impossible to buy quantity for early delivery at these prices, or, in fact, practically at any price, so busy are the makers in executing orders against existing contracts.

OILS (FIXED) AND SPIRITS.—*Linseed*: Values have still further improved, quotations now being: Spot pipes £20 15s. to £21 per ton, barrels £21 5s.; while July-August is quoted £20 15s., Sept.-Dec. £19 15s., Hull spot naked £20 2s. 6d., July-August £19 12s. 6d., Sept.-Dec. £18 7s. 6d. *Rape* is very firmly held at £21 15s. for ordinary brown on the spot, and for July-August and Sept.-Dec. delivery. Refined spot £23 5s. to £23 10s. Ravison naked, spot and July-August, £17 15s., Sept.-Dec. £18. *Cotton* quiet: London crude spot £15, July-August £15 5s. Refined spot £16 5s. to £17 5s., according to make. Hull naked refined spot £15 2s. 6d., July-August £15 7s. 6d., Nov.-April £14 2s. 6d., crude spot £14 2s. 6d., July-August £14 7s. 6d. *Olive*: Mogador £30 to £31, Spanish £30 to £32 per ton. *Coconut*: Ceylon spot £25 10s. to £25 15s., landed terms; June-July, July-August, and August-September shipment £23 15s. to £24, *c.i.f.*; Cochin spot £28 10s. landed; August-October £25 15s., *c.i.f.* *Palm*: Lagos is quoted £24 10s. per ton on the spot. *Lubricating*

Oil: Pale American spot 5s. 6d. to 7s. per gallon; black 5s. to 5s. 9d.; Russian black 5s. to 5s. 6d.; pale 5s. 9d. to 8s *Turpentine* is quiet on the spot, but dearer for forward delivery. Quotations are: American spot 34s. 6d. per cwt., June 31s. 9d., July 29s. 6d., Aug. 28s. 6d., Sep.-Dec. 28s. 7d., Jan.-Apr. 29s. 1½d. per cwt. *Petroleum* quiet and without change, there being practically no business doing in the article. Prices are nominally: Russian, spot, 5⅝d. to 5⅞d. per gallon; September-December, 5¼d. American spot and September-December, 5⅜d.. Water-white spot and September-December, 6⅞d. *Petroleum Spirit*: American, 9d. per gallon; deodorised, 9d. to 9¼d.

OPIUM.—A somewhat improved demand has set in for manufacturing kinds, and sales have been made at firmer rates. For *soft shipping* the demand is very slow. *Persian* has been in active request at firmer rates, good to fine being now held for 11s. 6d. to 11s. 9d., and medium for 11s. to 11s. 3d. per lb.

PARAFFIN WAX.—Present quotations are: *crude* 1⅞d. to 2d. per lb., *refined* 2¼d. to 3d. per lb.

PERMANGANATE OF POTASH.—There is a decidedly better feeling in this article, there being no longer free sellers at the late low prices. One of the best makers now quotes 57s. 6d. per cwt. for *small crystals* and 62s. 6d. for *large crystals*, in 1-cwt. kegs for 10-cwt. lots, ex-wharf, London. It is, however, still possible to buy good makes at 2s. 6d. to 5s. per cwt. below these figures.

PHENACETIN—Weak, the pressure to sell on part of makers continuing. A good quality of either *crystals* or *powder* can be bought at 3s. 4½d. to 3s. 7½d. per lb., according to quantity.

PITCH—8s. to 8s. 6d.

POTASH COMPOUNDS.—There are no changes of importance to record.

QUICKSILVER.—Importers' price remains £8 5s. per bottle, while the second hand quotes 6d. per bottle less money.

QUININE.—The market remains a puzzle. Makers maintain their price of 1s. 6d. per oz. for the best brands of *German Sulphate*, while in the speculative market there are sellers at 1s. 4d. per oz. for spot, and 1s. 4¾d. per oz. for August delivery. The makers assert that at the prices obtained for bark at Tuesday's London sales they could not sell *Quinine* with a profit at less than their present quotations, but who knows? As far as one can judge, buyers would not be far wrong in covering their requirements to a moderate extent at 1s 4d. to 1s. 4½d. per oz. for *Sulphate*.

ROSIN.—Strained spot, 4s. 3d. to 4s. 4½d. per cwt., ex-wharf, for arrival; 4s. to 4s. 1½d., *c.i.f.*, for July-September shipment per sailing vessel.

SHELLAC.—Demand on the spot continues very slow, and only retail sales have been effected at about previous rates. For arrival, TN *orange*, for Oct.-Dec. steamer shipment, is quoted 64s. 6d. per cwt., *c.i.f.* In the speculative market dulness also prevails, there being sellers of TN for August delivery at 68s. 6d. per cwt.

SODA COMPOUNDS—Are practically without change from last week.

SPICES (VARIOUS).—*Black Pepper*: No Singapore offered; Penang bought in at 5⅜d.; 54 bags Ceylon sold, good to fine heavy shot, at 5¼d. to 5½d. *White Pepper*: 247 bags Singapore bought in, good at 9⅛d.; of 105 bags Penang 10 bags sold, fair white limed at 8d. *Cassia Lignea*: 256 cases new import bought in, new selected at 43s., and fine old false packed at 45s. *Mace*: Of 47 cases Penang 7 cases sold, fair pale red mouldy and wormy at 1s. 6d.; 19 cases West India sold, fair to good pale 1s. 5d. to 1s. 8d., fair red 1s 3d. to 1s. 4d. *Pimento* again lower; of 288 bags, 98 sold, fair at 3½d. to 3⅝d.

SULPHATE OF COPPER—Quiet at £25 to £27 per ton, according to quantity and brand.

SULPHONAL.—The two chief makers maintain their price of 17s. per lb. for both *crystals* and *powder*; second-hand appears to be sold out and yet there are cheap offers in the market, the puzzle being whence it comes.

TURMERIC.—Business passing small, present quotations being: *Bengal*, 18s. 6d. per cwt.; *Madras*, fair to fine bright finger, 25s. to 27s. 6d.; *Cochin* finger, 17s. 6d.; split bulbs, 9s. to 9s. 6d. per cwt.

TALLOW.—*Australian Mutton*, good to fine, is quoted 26s. 9d. to 27s. 3d. per cwt. *Beef*, good to fine, 25s. to 26s.

TAR.—*Stockholm*, 26s. 6d.; *Archangel*, 20s.

To-day's drug auctions passed off extremely quietly, a large number of the lots being bought in. The advice to hand this afternoon of a shipment of 78 bales Ipecacuanha comes as a rather unpleasant surprise to the buyers at fancy prices of the few bales which were catalogued. The following are particulars as far as it has been possible to give same up to time of going to press:—

ACONITE ROOT.—10 bags *Japan* were bought in at 28s. per cwt.

ALOES.—Fair *Socotrine* in kegs were bought in at 77s. 6d. per cwt., low black inferior quality at 15s.; 280 boxes *Capey Curaçoa* sold at 15s. to 18s. per cwt.; 53 cases *Cape*, part sold at 22s. 6d. to 23s. for drossy, good hard bright being held for 26s. 6d. per cwt; 8 cases *Zanzibar* in monkey skins fetched 50s. per cwt.

ANTIMONY.—30 cases crude Japan (*Black sulphide*) were taken out at £24 5s. per ton.

ANATTO SEED.—15 packages of low quality sold at 1d. per lb., while for fair quality 3d. per lb. was the price required.

ARECA NUTS.—25 bags good were bought in at 30s. per cwt.

ARGOL.—30 bags *Cape* sold at 45s. to 46s. per cwt. for pale down to 36s. to 37s. 6d. for rosy.

BALSAM COPAIBA.—3 cases very thick and cloudy sold at 1s. 3d. per lb., 2 cases of fair quality being bought in at 1s. 7½d.

BUCHU LEAVES.—Fair to good green sold at 5¼d. per lb., yellowish at 4d. to 4¼d.

CALUMBA ROOT.—32 bags, very stemmy, were held for 13s. per cwt.

CAMPHOR.—14 cases *Japan refined*, in 1 oz. tablets, sold cheaply at 1s. 7d. per lb.

CANELLA ALBA.—10 bales bought in at 35s. per cwt.

CARDAMOMS.—14 cases *Ceylon Malabar* were bought in at 2s. 1d. to 2s. 8d. per lb.; another lot sold at 1s. 7d. up to 2s. 8d. per lb., while for 1 case really fine bold 3s. 5d. per lb. was bid and declined. Good *Mangalore* realised 3s. 1d. to 3s. 2d. per lb.; 1 case good *Seeds* sold at 2s. 7d. per lb.

CASCARILLA BARK.—21 packages part sold at 50s. per cwt. for fair quality.

CHIRETTA.—12 bales were bought in at 3½d. per lb.

CINCHONA BARK.—34 bales yellow part sold at 10d. to 11d. lb.

CIVET.—3 horns of only medium quality were bought in at 10s. 6d. per oz.

COD-LIVER OIL.—24 barrels new *Norwegian* bought in at 65s. per barrel.

CUBEBS.—9 bags fair bold taken out at 25s. per cwt. 40 bags stalky sold at 19s. 6d. per cwt.

DILL SEED.—60 bags of fair quality sold at 12s. per cwt.

DRAGON'S BLOOD.—5 cases were bought in at £10 to £12 10s. per cwt.

DRIED TURTLE.—4 cases were bought in at 4s. 9d. per lb.

ERGOT OF RYE.—10 cases good sound *Spanish* bought in at 1s. 6d. per lb.

ESSENTIAL OILS.—3 cases *Star Aniseed* bought in at 6s. 2d. per lb. 40 cases fair to good commercial *Eucalyptus* at 11d. to 1s. 1d. per lb. 46 cases *Lemongrass* at 2⅞d. per oz. 1 case West Indian *Lime Oil* fetched 3s. 3d. per lb. *Ylang Ylang*: 3 cases bought in at 3s. 6d. per oz.

GAMBOGE.—24 cases bought in at £9 5s. for good, only 2 cases of very medium quality selling at £6 15s.

GENTIAN ROOT.—15 bales good dry root were bought in at 16s. per cwt.

GUAZA.—117 Robbins bought in at 3½d. to 4½d. per lb.

GUM AMMONIACUM.—9 cases were bought in at 20s. per cwt.

GUM BENJAMIN—Fair to good *Sumatra* was bought in £7 10s. to £11 per cwt. Common *Palembang* part sold at 55s. to 56s. per cwt.

GUM KINO.—2 cases genuine *Cochin* bought in at 4s. per lb., doubtful quality being bought in at 3s.

GUM MYRRH.—2 cases of very inferior quality sold at 11s. and

GUM SANDRAC.—12 casks were taken out at 56s. per cwt.

GUM THUS.—5 casks of fair quality were bought in at 12s. 6d. per cwt.

HONEY.—54 packages *Jamaica* sold at 19s. to 27s. per cwt.; 3 casks *West Indian* realised 20s.; 28 cases white catalogued as *Rosemary Honey*, apparently from Japan, were bought in at 42s. 6d per cwt.; 5 crates, each 6 × 14 lb. tins, good white set *Canadian* at 40s.; good *Californian* was bought in at 35s.

IPECACUANHA.—5 bales *Rio* realised the high figure of 17s. 6d. per lb. Since the sale it transpires that 78 bales just unexpectedly arrived, which may tend to weaken the market.

Jalap.—16 bales fair quality taken out at 6d. per lb.

Kola Nuts.—1 bag of very medium quality sold at 2½d. per lb. 16s. per cwt. respectively, fair to good sorts realising 40s.

Menthol.—3 cases *Kobayashi* bought in at 7s. per lb.

Nux Vomica.—57 bags fair *Madras* were held for 8s. per cwt., 42 bags medium ditto for 7s.

Orange Peel.—3 packages taken out at 6d. per lb.

Orris Root.—6 bags inferior *Verona* sold without reserve at 14s. per cwt.

Quince Seed.—4 bags *Cape* taken out at 1s. 6d. per lb.

Quinine.—4 cases *Pelletier's Sulphate*, in 100 oz. tins, held for 1s. 3½d. per oz.

Rhubarb.—Medium flat *Shensi* was taken out at 1s. 4d. per lb.; fair flat high dried at 11d.

Saffron.—Fair *Valentia* was bought in at 35s. per lb. *Alicante* at 25s.

Sandalwood Chips.—180 bags were held for £22 per ton.

Sarsaparilla.—25 bales good *Jamaica* sold readily at 1s. 6d. per lb. for the sound down to 1s. 1d. per lb. for 3CSD. 16 bales *Lima* were held for 1s. 3d. per lb. 8 bales *Guayaquil* for 1s. 4d.

Senna.—4 bales fine bold *Tinnivelly* were taken out at 6d. to 7d. per lb., only 4¾d. per lb. being bid. 10 packages *Alexandria* held for 4d. to 6d. per lb.

Soy.—18 dozen flagons *Japan* sold at 5s. per dozen.

Star Aniseed.—11 cases were bought in at 90s. per cwt.

Tamarinds.—Good *Antigua* were taken out at 13s. 6d. per cwt., medium ditto at 10s. 32 casks *East Indian* at 15s. per cwt., 137 barrels of fair *West Indian* selling at 10s. 6d.

Turmeric.—81 bags *Madras* were taken out at 27s. per cwt.

Wax.—Fair *Madagascar* was taken out at £6 5s. to £6 10s. per cwt.; fair *West Indian* at £7 10s.; fair North American sold at £7 2s. 6d., good *Calcutta* being held for same price; 3 casks *Mazagan* at 90s. per cwt.; 35 bales *Zanzibar*, all more or less badly damaged with coconut oil, sold without reserve at £5 15s. to £6 per cwt. Fair *Jamaica* was held for £7 5s. to £7 7s. 6d. Good *Mogador* sold at £6 7s. 6d. to £6 10s.

Newcastle Chemical Report.

June 21, 1899.

The chemical business in heavy goods continues fairly good. Bleaching Powder against shipping orders keeps on the scarce side, and although prices are not altered, late figures are firmly quoted. Soda Crystals are in more demand, principally for home orders. Sulphur is still scarce. Quotations are: Bleaching Powder, according to markets, £5 7s. 6d. to £5 12s. 6d. Soda Crystals, 45s. to 47s. 6d. Caustic Soda, 70 per cent., £7 to £7 5s. Soda Ash, 52 per cent., £4 5s. Alkali 52 per cent., £5 5s. to £5 7s. 6d. Sulphur, £5 per ton.

Liverpool Market Report.

June 21, 1899.

Although there is a good amount of inquiry, the business doing may be styled quiet. Prices are higher for Spirits of Turpentine, Linseed Oil, and Linseed; other quotations are practically those of last week. Good sales of African Ginger at full rates have taken place and small amounts of Kola Nuts, Carnauba Wax and Canaryseed have changed hands at good prices. In chemicals a good inquiry is also noted, with advances in Borax and Citric Acid.

Acid Citric—1s. 6½d. per lb.

Ammonia Salts.—*Carbonate*: 3¼d. to 3½d. per lb. *Salammoniac*: 33s. to 35s. per cwt. *Sulphate*: £12 7s. 6d. to £12 10s. per ton.

Beeswax.—13 packages of Conakry sold at £6 per cwt.

Canaryseed.—More demand is experienced, and 100 bags of Turkish sold at 32s. per cwt.

Carnauba Wax.—38 bags of grey found buyers at 42s. to 57s. 6d. per cwt.

Copperas—Is in good demand; 37s. to 40s. per ton.

Copper Sulphate.—Stocks are low and inquiry is improving; price £25 2s. 6d. to £25 7s. 6d. per ton.

Ginger.—150 bags of *Sierra Leone* sold, ex-quay, on private terms. 36 bags of *Cochin*, ex-store, made 26s. per cwt.

Kola Nuts.—56 packages of dried found buyers at 1¼d. per lb.

Linseed—Is higher than last week, and sellers are scarce. Prices asked at present are 36s. per 416 lbs. for *River Plate* seed, and 38s. for *Calcutta*.

Oils (Fixed) and Spirits.—*Castor* has been selling fairly well, and inquiry for spot and forward parcels is well maintained. Calcutta good seconds is 2¾d. to 2⅞d. per lb. French 1st pressure, 2¾d.; 2nd pressure, 2⅞d. Madras, 2¾d. 100 cases of Calcutta sold privately, ex-quay. *Olive* is selling quietly at £31 to £31 10s. for Candia, and £31 10s. to £32 per ton for Spanish. *Linseed* has advanced to 22s. and 22s. 6d. per cwt. for Liverpool makes, and is firm, with moderate business doing. *Cottonseed* remains at 17s. and 17s. 6d. per cwt. for Liverpool refined oil in export barrels. *Spirits of Turpentine* are steady at 35s. 9d. per cwt.

Potash Salts.—*Bichromate*: 3¼d. per lb. *Chlorate*: 3½d. to 3¾d. per lb. *Cream of Tartar* quiet at 73s. to 77s. 6d. per cwt. *Pearlashes*: 32s. per cwt. *Potashes*: 23s. *Prussiate*: 8¼d. to 8½d. per lb. *Saltpetre*: 90 bags of Karachi sold at 17s. 9d. per cwt., ex-store.

Soda Salts.—*Bicarbonate*: £6 5s. to £6 15s. per ton. *Borax*: £16 to £16 10s., is scarcer. *Caustic*: 76 to 77 per cent., £7 15s. per ton. *Crystals*: £3 per ton. *Nitrate*: 8s. to 8s. 3d. per cwt.

Manchester Chemical Report.

June 21, 1899.

There is a good inquiry for Alkalies, and Soda Crystals, owing to the hot weather, are scarce. There is no change in values. In miscellaneous chemicals trade continues fairly good. Bichromate of Potash is about a farthing lower, and it is stated that English makers are beginning to feel the effects of Continental competition. Sulphate of Copper continues to decline, and it is apparent now that a greater quantity is in second hands than was thought. Prices here range from £25 10s. to £26. In Glycerin there is a better feeling, but locally there is no change in price. The export of Pitch from the port of Manchester continues good, and this article is now quoted 26s. per ton, *f.a.s.* There has also been more inquiry for Lancashire Green Copperas for export during the past week, and makers are firm. Foreign White Sugar of Lead is lower, and ranges from £22 10s. to £23 per ton, *c.i.f.* There is a good demand for White Powdered Arsenic, which is quoted £19 to £19 5s. per ton, ex ship, Garston. Yellow Prussiate quiet and unchanged. The direct oil trade continues to increase, and the largest oil tank in the world has been erected at Eccles, capable of holding any single cargo at present brought to the port.

TERMS OF SUBSCRIPTIONS.

The Pharmaceutical Journal circulates amongst Pharmacists in Great Britain and Ireland, France, Germany, Austria, Italy, Russia, Canada, the United States, South America, India, Australasia, South Africa, etc., etc., and the average number of copies circulated weekly exceeds seven thousand.

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EXCHANGE.

PREPAID NOTICES not exceeding TWELVE WORDS are inserted in this column at a fee of Sixpence each, if they do not partake of the nature of ordinary advertisements. For every twelve words (or less) extra, the charge is Sixpence. A price, or two initials, will count as one word. Notices for the "Exchange" should reach the Pharmaceutical Journal Office, 5, Serle Street, Lincoln's Inn, W.C., not later than 5 p.m. on Thursdays.

OFFERED.

Magic Lanterns (second-hand) and effects; bargains. Marvellous pamphengos oil lantern pictures, like limelight; £4 4s., reduced to £3 10s. Illustrated lists, 3d. The Universal Lantern, 4-in. 4-wick, 18s. 6d. Cinematographs, Hughes' Patent Photo Rotoscope Peep Show or Outdoor Theatre; 20 can see at once; £21 10s. Greatest money-taker of the 19th century; pays for itself in a week. Animated pictures, like limelight. Illustrated particulars, 2d.—Hughes, specialist, Brewster House, 82, Mortimer Road, Kingsland, London, N.

Six New Half-Guinea Cameras for 28s.—Cameras, West Ryton-on-Tyne.

No. 2 Frena, perfect, with 8 magnifiers and case; cost £10; cash offers.—Dalgleish, Chemist, Huntingdon.

36 Daisies, 24s.; 72, 46s. 6d.; 36 Munyon's, 22s. 6d.; 12 Williams' Pink Pills, 23s. 9d.; 24, 47s. 4d.; 36, £3 10s. 9d.; 1 lb. Iodoform Precip., 13s., free for cash. 36 Tetlow's Pink and Flesh Swandown, 9s., free London. — Eastman, Forest Lane, Stratford.

WANTED.

Old Electric Lamps and Scrap Platinum for prompt cash.—P. Rowsell, 9, Derwent Grove, East Dulwich, London, S.E.

Formula suiting production of good-class toilet or other speciality purchased; liberal price given.—Particulars privately to W. Lewis, 15, Shelden Street, Bishop's Road, London, W.

COMMUNICATIONS, LETTERS, NEWSPAPERS, etc, have been received from Messrs. Abram, Alder, Barrie, Boiron, Burroughs, Clarke, Corder, Cruickshank, Cummings, Donaldson, Elborne, Evans, Fothergill, Glyn-Jones, Hall, Hayward, Henry, Hill, Howard, Hustwick, Lake, Lloyd, Long, Metcalfe, Ransom, Reid, Roadknight, Shattock, Shorrock Tomlinson, Turner, Wellcome.

Births, Marriages, and Deaths.

BIRTH.

James.—On June 20, at Nortonbury House, 190, High Street, Cheltenham, the wife of Clarence H. James, chemist and druggist, of a son.

MARRIAGES.

Lake—White.—On the 14th inst., at St. Peter's Parish Church, Bournemouth, by the Rev. R. Pattison, John William, elder son of J. Hinton Lake, of Exeter, to Annie, eldest daughter of Henry White, Sunnylands, Bournemouth.

Evans—Sullivan.—On June 21 at St. Barnabas, Pendleton, Manchester, by the Rev. G. Morgan, B.A., brother-in-law of the bride, Fred. J. Evans to Emily, second daughter of J. Sullivan, Pendleton.

DEATHS.

Miller.—On June 8, Thomas Miller, Chemist and Druggist, Ipswich. Aged 80.

Sheel.—On June 10, Robert Sheel, Chemist and Druggist, Gateshead. Aged 57.

Lugar.—On June 14, Henry Lugar, Chemist and Druggist, Haverstock Hill, N.W. Aged 54.

Andrews.—On June 20, George Bruford Andrews, Chemist and Druggist, Norwich, the sad event taking place six days after the decease of his wife. Mr. Andrews, who was widely known and esteemed, was one of the oldest tradesmen in the city, having been in business as a chemist for a great many years.

Partnerships Dissolved.

(From the London Gazette.)

Henry Hodge and C. H. Dibb, Oil Refiners, etc., 1, High Street, Hull, and Bankside Oil Mill, Stoneferry. Debts will be received and paid by Henry Hodge.

C. F. Fison, W. C. Fison, W. Pechey, and John Fison (trading as James Fison and Sons), Manufacturers of Chemical Manures, etc., so far as regards W. Pechey.

Publications Received.

UEBER ASPIRIN (ACETYLSALICYLSÄURE). By Dr. JULIUS WOHLGEMUTH. Reprint from "Therapeutische Monatshefte." No. 5, 1899. Elberfeld: Friedr. Bayer and Co. From the Publishers.

HYDROPHOBIA AND SEROTHERAPY. By Dr. A. LUTAUD. Pp. 24. Price 6d. London: Anti-Vivisection Society, 32, Sackville Street, Piccadilly, W. 1899. From the Publishers.

LIVING PICTURES: THEIR HISTORY, PHOTO-PRODUCTION, AND PRACTICAL WORKING. By HENRY V. HOPWOOD. Pp. xii. +275. Price 2s. 6d. net. London: The 'Optician and Photographic Trades Review,' 123-5, Fleet Street, E.C. 1899. From the Publishers.

A SHORT HISTORY OF THE PROGRESS OF SCIENTIFIC CHEMISTRY IN OUR OWN TIMES. By WM. A. TILDEN, D.Sc. Lond., D.Sc. Dub., F.R.S. Pp. x. +276. Price 5s. net. London: Longmans, Green and Co., 39, Paternoster Row. 1899. From the Publishers.

MEDICINAL PLANT NAMES: THEIR ORIGIN AND MEANING. By F. RANSOM. Reprinted from the *Pharmaceutical Journal*. Pp. 40. Price 6d., post free. Hitchin: F. Ransom, 12, Bancroft. 1899. From the Author.

Advertisements.

(Received too late for Classification).

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Photographic Supplement

TO THE

PHARMACEUTICAL JOURNAL

LONDON, SATURDAY, APRIL 15, 1899.

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Trade Catalogues.—All the firms whose goods are referred to in this Photographic Supplement will be pleased to send copies of their priced catalogues post free on application by anyone mentioning the *Pharmaceutical Journal*.

Special Notice.—The Editor has the advice and aid of leading experts in all matters connected with photography, and will always be glad to afford assistance to readers who submit wants or difficulties experienced by themselves or their customers.

THE EYE AND THE CAMERA.

BY R. E. CHESTERMAN.

THE human eye is often compared, as regards its optical properties, to the photographic camera, or rather the lens which forms the image on the ground-glass screen; but the resemblance which is supposed to exist between both optical systems is not so close as the comparison might lead the unthinking to imagine. Neither the eye nor the lens can be considered optically perfect; but their respective imperfections do not parallelise, a fact which vitiates the comparison that is made between them. Nevertheless, the very imperfections of both systems have a most important bearing on photography, and if we briefly consider what the nature of those imperfections is we shall perceive that though the points of resemblance between the eye and the lens are few, the analogy that may be made between them is of considerable practical value.

Opticians are agreed that curvature of field in a photographic lens is a serious defect, and in recent years their efforts have been directed towards its destruction or elimination. But in practice this very defect, which for a long time interposed an obstacle to the perfection of the photographic lens as an instrument of precision, is found to have advantages which outweigh its drawbacks. A subject which is concave to the camera is rendered on the plate sharply in every plane by a curved field lens; whereas an absolutely flat field lens gives excellence of definition only over one plane. The centre of the view is well defined, but the sides are "out" or *vice versâ*.

There are times, too, when the biting razor-edge sharpness of line, which is the characteristic quality of the image given by some modern lenses, is not always desirable, and in such cases a little outstanding spherical aberration is of service in softening down excessive harshness of outline. Picture copiers have been known to declare that the penetrative powers of lenses in revealing the very structure of the canvas upon which the picture is painted are in excess of the requirements of the case, and thus another important optical quality is found at times to be a disadvantage instead of a gain.

Much the same thing applies to the great covering powers—or width of included angle—which many modern lenses possess. The temptation to use a 5 or 5½-inch objective on a diagonal of 8 or 9 inches, in other words, upon a half-plate instead of a quarter-plate, is very great amongst many amateurs; but the trained eye is offended by the violence of the perspective which is thus given, and so still another great optical achievement brings with it a ready opportunity of using it disadvantageously.

The theoretically perfect photographic lens does not yet exist. One may go further and say that it is an impossibility. No lens can be constructed which will answer all the requirements of the photographer. Roughly speaking, he must use a separate lens for each special purpose, and if we examine the properties of the series we shall find that each particular lens is in the nature of an optical or practical compromise. The portrait lens lacks depth of definition, but gives a brilliant central image; the single

landscape lens distorts at the margins; the wide angle lens gives violent perspective, and so on through the list.

It will be seen, therefore, that the comparison of the photographic lens with the human eye rests on a very slender foundation indeed, if each is to be considered as an optical instrument pure and simple. Nor is very much to be gained in support of the comparison if we carry it to the extent of inquiring into the behaviour of the eye and the lens as instruments for the formation of images. When the photographer desires to direct the image of an object on to the screen of his camera, the lens has to be racked in towards or away from the focal plane. In all cases, a mechanical movement of the objective on the screen is necessitated when an adjustment of the focus is made.

But in focussing on near or distant objects with the human eye a vastly more beautiful principle comes into force. It is not a matter of mere mechanical movement, if one may so employ the phrase, that gives the eye this wonderful power, but an optical property which baffles the world's science to apply to lens construction. The crystalline lens of the human eye it is well known is a "crossed" or double convex lens, the radii of curvature of which are unequal. The power of accommodation which the eye possesses of instantly adjusting itself for either near or distant objects is exercised in a manner that can only be described as the acme of optical excellence. When one looks at a distant object the image is produced on the retina by a lengthening of the radii of curvature of the crystalline lens; on the other hand, if the eye be turned to a nearer object, then are those radii instantly shortened, the crystalline lens, in fact, assumes a greater degree of convexity.

The reader will consequently see that the comparison that is made between the eye and the camera in respect of the movements that are necessary for the adjustment of foci does not hold good. We are assuming that in the case of the lens the focal plane is a fixture, as, of course, it is in the eye. Again, with the latter the size of the retinal image is invariable; the photographic image relies for its size upon the focal length of the lens. The action of the iris or diaphragm is precisely the same in both the eye and the lens, and this perhaps is the only point of resemblance between them that is absolute.

The optical defects of the human eye are such as are frequently met with in photographic lenses, but they differ from the latter in that they are more easily curable. If we lengthen or shorten the focus of a lens, we introduce, particularly in the latter case, distortion; if the lens has spherical aberration or astigmatism, or both, it may for all practical purposes be regarded as incurable, although the instrument is not quite useless for certain purposes. But all these defects may exist simultaneously in the human eye and be curable, or at any rate remediable.

Helmholtz and others have pointed out that the human eye, even at its best, falls very far short of optical perfection. The eyes of those who are blessed with what it is the custom to term good normal sight or vision would not stand rigidly testing for astigmatism and spherical aberration, both of which defects in all probability exist in a greater or less degree in every human eye. If to these two aberrations we join a third, or what practically amounts to an aberration, namely, the comparatively low order of definition which the eye is generally said to yield, and into the causes of which it would take too long now to inquire, we shall begin to appreciate the force of the reasoning that while the eye—unlike the photographic lens—is an optical instrument possessing a multiplicity of uses, yet, critically considered, it is deficient in some of the highest optical attributes.

This fact finds expression in the teaching now generally held and respected amongst thoughtful photographers, that while the eye possesses what may be called instantaneous adjustment of focus its field of definition is not only small, but qualitatively inferior. It has comparatively little depth of definition, and all else but the principal object in the field of view before it is unsharp and deficient in crispness of outline. The eye, in fact, does not see in the same manner as does the other instrument with which it is supposed to be in such close comparison, namely the lens. Let the latter be directed towards a group, a view or an interior, and all objects situated in a given plane are represented as equally sharp and in such a manner that the eye does not see them. Nothing more strongly marks the difference between the eye and the photographic lens than this elementary fact.

Ten years or more ago Dr. Emerson—perhaps as great a thinker as photography has yet produced—taught the doctrine that artistic photographs should be taken as the eye sees nature, namely with the focal interest centred on the principal object, which should be photographed not quite sharp, the rest of the picture being also held back, so to say, as far as definition is concerned. In other words, the photographic lens was to be used as the eye is employed at looking at things. From those conservative photographers who had been accustomed to look upon a lens as an instrument for producing the highest attainable fineness of definition over the whole field of the picture, the new doctrine was regarded as heresy, and it met with a storm of stupid opposition. Nowadays, however, for pictorial work the heresy has become a recognised canon, and the non-photographic reader by studying the differences that characterise the lens and the eye will not find it hard to admit that Dr. Emerson took solid scientific ground upon which to base his invaluable photographic teachings.

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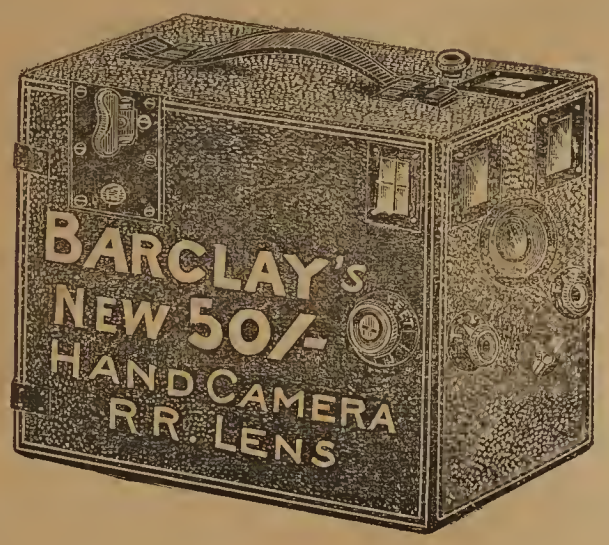

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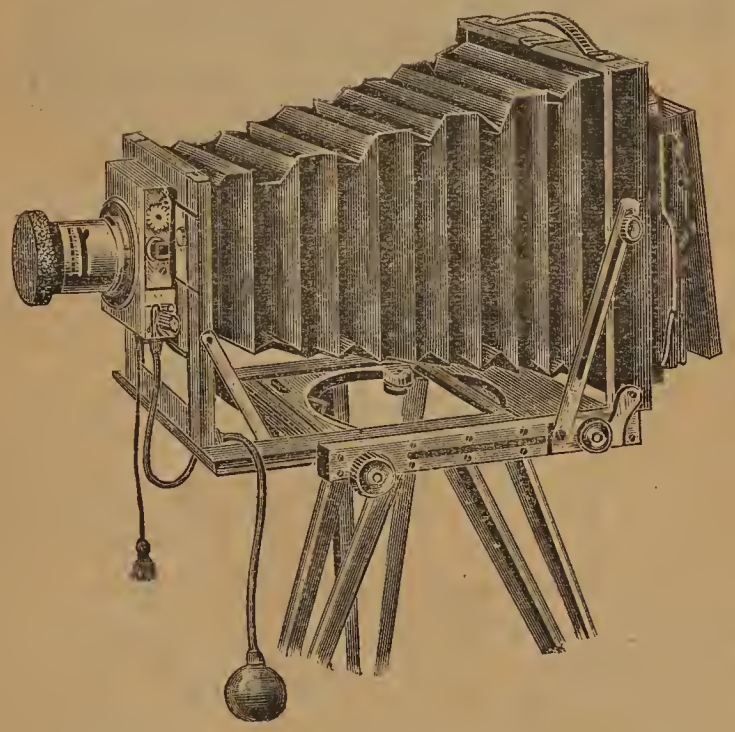

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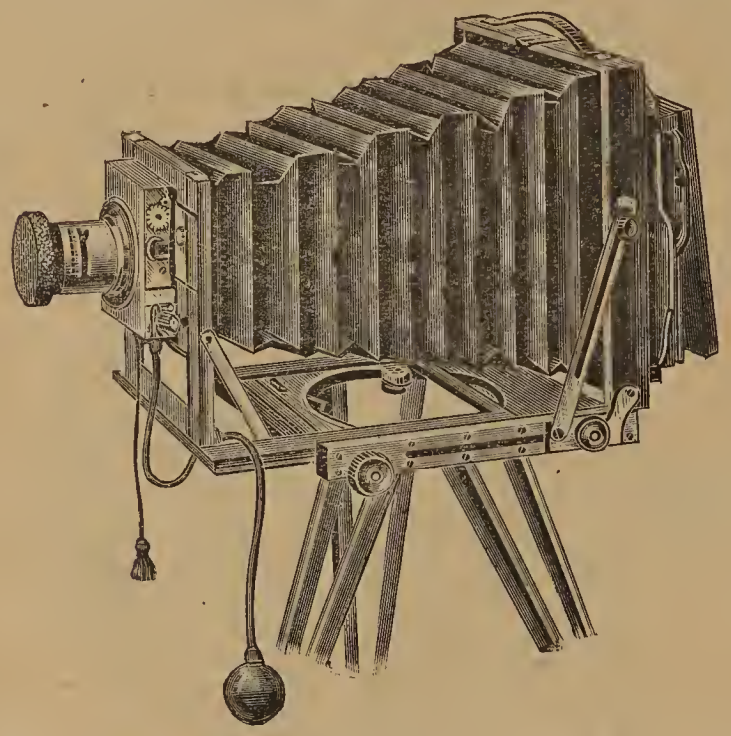
NOTES ON NOVELTIES.

THE DIAMOND AND FARRINGDON IMPROVED CAMERA SETS.

Barclay and Sons, Ltd., 95, Farringdon Street, E.C.

To meet the general demand for a half-plate camera set of good quality, to sell at the popular price of 70s., Messrs. Barclay have introduced the Diamond Favourite set. The camera is of the taper-bellows pattern, fitted with rising front, swing back, and reversing frame. The longest extension is 15 inches, and the back may be brought forward for use with a short focus lens. The lens is a rapid rectilinear with iris diaphragm, and the shutter of the roller-blind type for time and instantaneous exposures with speed indicator and pneumatic release. One double book-form slide is included, fitted with spring catches and hinged metal



partition. The stand is of ash, is three-fold, and fits a turntable in the base of the camera. The whole is wonderfully well finished.

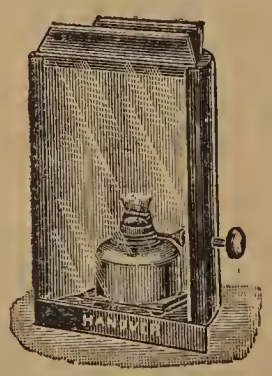
The Farringdon improved quarter-plate set, includes a polished mahogany camera with swing back and reversing frame, one double book-form dark slide with double-hinged shutter, a good achromatic single lens with instantaneous shutter adjustable for three speeds, and a two-fold stand with brass head. This set sells at 21s., and ought to be a very saleable line.

We may mention that Messrs. Barclay have now in the press a new photographic price list, in which retail prices only are quoted. They are prepared to supply their customers with copies, with the customer's own name and address, at quite a nominal price.

THE HANOVER CHEAP DARK ROOM LAMP.

Evans, Sons & Co., Hanover Street, Liverpool.

This lamp seems to be particularly good value. It is made to burn colza oil, and has outside wick adjustment. The window is of ruby glass. We found it to give a very good light, and

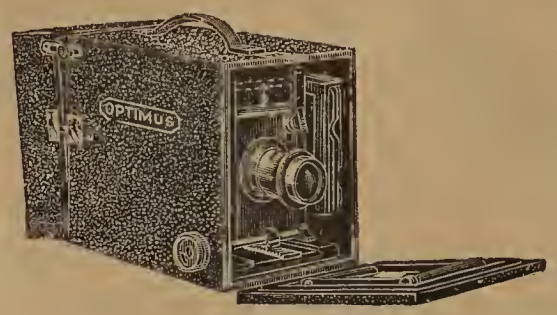


after burning some time it did not become unduly heated. Price 1s. Extra glasses 6d.

THE OPTIMUS IMPROVED "UBIQUE" HAND CAMERA.

Perken, Son and Rayment, 99, Hatton Garden, E.C.

This camera is already favourably known to the trade, but it has now had several improvements made which materially add to its efficiency. In its simplest form the camera has a rack and pinion focussing adjustment actuated by a milled head outside. The plates are carried in double dark slides, three of which, together with a focussing screen, are carried within the camera. The lens is a rapid landscape, a rapid rectilinear, or extra rapid Euryscope, as required, and the shutter, a roller blind, with time and instantaneous adjustments, etc. At a small extra cost of 15s. the camera is fitted with a rising front, and also with horizontal and vertical swing back. Screw bushes are provided so that the camera may be attached to a tripod for either vertical or horizontal pictures. The whole is self-contained, and from its small dimensions is very handy and portable. We need hardly say that the workmanship and finish are of the best. This is hardly a "cheap" line, but as it will do everything that an ordinary stand camera will do, and this without in the slightest degree detracting from its efficiency or portability as a hand camera it will appeal to many amateurs who want a quarter-plate camera for all-round work. Prices: Landscape lens, 55s.; R R lens, 80s.; Euryscope, 100s.



PERSULPHATE OF AMMONIA TABLOIDS.

Burroughs, Wellcome and Co., Snow Hill Buildings, E.C.

The value, we might almost say the indispensability, of ammonia persulphate as a reducer of density in negatives has now become so fully recognised amongst photographers that its inclusion among the "tabloid" preparations for photographic use by Messrs. Burroughs and Wellcome comes as a matter of course. We note, too, that the formate of soda toning bath for gelatino-chloride prints is now to be had in the same convenient form. Accompanying these preparations we have received a pamphlet entitled "Practical notes concerning tabloid photographic chemicals," appealing, in the first place, to the users of tabloids, but, nevertheless containing useful information to photographers generally, and containing also a list of the tabloid photographic preparations. The list includes all, or nearly all, the chemicals likely to be required in ordinary photographic work, and certainly all likely to be required while on tour. Of the convenience of this compact method of keeping one's chemicals, especially when travelling, it is unnecessary to say anything, and the advantage of being able to make accurate solutions without the use of scales and weights seems to us only to need pointing out to secure adherents to the system.

PLEASE READ THIS.

JOHN DONE & CO.

Photographic Works—NEW BARNET,

The well-known old-established house for printing, developing, retouching, enlarging, mounting, making lantern slides, copying, intensifying, turn out only the highest class work, and allow liberal discount to photographic chemists and dealers. Prompt and careful execution.

PRICE LISTS, IN BLANK COVERS, FREE.

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FLAT FILMS

Largest Sale in the World.

ABSOLUTELY RELIABLE.

1888 ELEVEN YEARS' REPUTATION for EXCELLENCE **1899**

CELLULOID

Of every description kept in stock,
Suitable for all purposes.

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Sent Post Free.

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SELDON HOUSE,
FULWOOD'S RENTS, HOLBORN, LONDON, W.C.

Photographic Chemicals

BOTTLED READY FOR SALE IN ALL SIZES.

ADVANTAGES.

No loss from Deteriorated or Dirty Stock.
No loss of time to yourself or customer.
They are always ready to hand out.

A SMALL ASSORTMENT of ABOUT £5 or £6 WILL ENABLE A CHEMIST TO START THE TRADE.

HYPOSULPHITE SODA, ALUM, BORAX, &c., IN 1-lb. PATENT BOXES AT SPECIAL PRICES.

Price Lists on application with Trade Card.

Chemicals in Bulk for Photographic, Scientific, and Technical purposes.

HARRINGTON BROTHERS,

Wholesale Manufacturing Chemists,
4, Oliver's Yard, City Road, LONDON, E.C.
Factory, CORK, IRELAND.
Telegrams: "Siccative, London."

EDWARDS' Lantern Camera

10/6

SIX SLIDES.
33⅓% off ½-dozen lots.
50% „ 1 „ „

SAMPLES SENT ON RECEIPT OF ORDER
Carriage Paid 25%.

T. EDWARDS & Co.

Wholesale Opticians,
DYOTT STREET, NEW OXFORD STREET,
LONDON, W.C.

SHEW'S HAND OR STAND CAMERAS

NEW SERIES.

THE XIT

The only quarter-plate Hand or Stand Camera easily carried in a breast pocket.

With Shew, Goerz, Zeiss, Dallmeyer, and Cooke Lenses.

From - - £8 8s.

The XIT.—No. 2A. Rapid Rectilinear Lens, **Bausch & Lomb** Time and Instantaneous Shutter, 3 Double Backs, Clear Finder, and Case .. **£4 17 6**

The XIT.—No. 3A. Rapid Rectilinear Lens, **Thornton Pickard** Time and Instantaneous Shutter, 3 Backs, Finder, and Case .. **£3 3 0**

The GUINEA XIT Camera. 5½-in. Achromatic Lens, Shew Shutter, Focussing Ring, 3 Double Backs, Screen, and Clear Finder .. **£1 1 0**

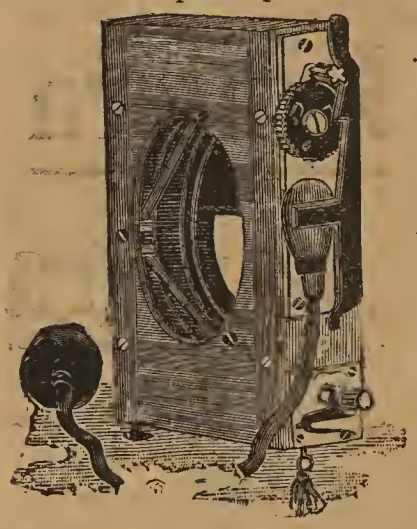
Lists and Show Cards free of

SHEW & CO. Newman Street, LONDON, W.

HANOVER ROLLER-BLIND SHUTTER.

Evans, Sons and Co., Hanover Street, Liverpool.

This is a capital specimen of this popular type of shutter. It is arranged for time and instantaneous exposures, the speed varying from 1/15th to 1/90th of a second, and it has a speed indicator and a ball and tube pneumatic release. The mechanism is made as simple as is possible in this form of shutter, so that it is not likely to get out of order. Price for ¼-plate lenses, 16s.; for ½-plate lenses, 17s. A special pattern is made for fitting on the camera front behind the lens. It has all the good features of that described above. Price for ¼ to ½-plate cameras, 15s.; for ½ to 1/1-plate cameras, 16s.



BRIN'S OXYGEN.

Brin's Oxygen Company, Limited, 34, Victoria Street, Westminster, S.W.

Oxygen of guaranteed purity for limelight, medical, metallurgical, and other purposes, is supplied by this company, in conjunction with the Manchester Oxygen Company, Limited, Great Marlborough Street, Manchester, and the Birmingham Oxygen Company, Limited, Saltley Works, Birmingham, in cylinders of the best British manufacture, and complying with all the established trade and railway regulations. All cylinders filled by these companies (whether their own or their customers') are labelled with their trade mark. This label guarantees the purity of the gas, and is a further guarantee that the cylinder has been tested and proved sound in every respect by the company which has filled it, the label being also stamped with the date on which the cylinder was filled. The works of the companies are open during business hours to customers, who are at liberty to inspect the process of manufacturing oxygen, and to witness their own cylinders being tested and filled.

BARCLAY'S NEW HAND CAMERA.

Barclay and Sons, Ltd., 95, Farringdon Street, E.C.

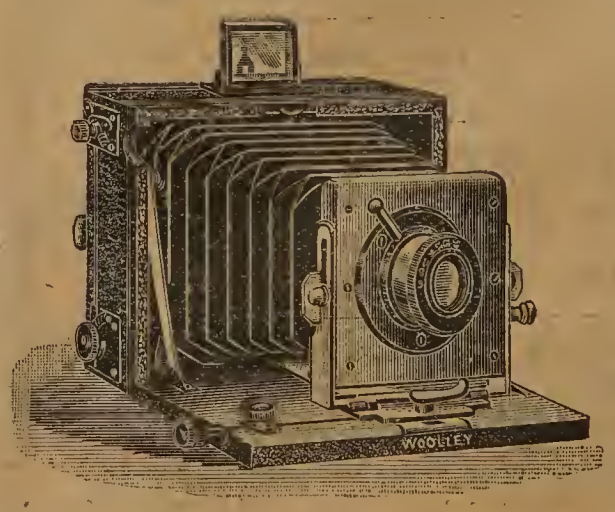
The new hand camera which this firm is now introducing to sell at 50s. strikes us as being a distinctly good line. The camera takes twelve quarter-plates, which are contained in sheaths, and the changing arrangement is simple and efficient. The method of inserting the sheaths containing the plates is by an ingenious arrangement made so easy and certain that there is no danger of any of them getting misplaced and causing a jamb in use. The lens is a rapid rectilinear, and the shutter seems particularly good. It can be used for time and instantaneous exposures, and there is a speed regulator. The camera is not a fixed focus one, but can be racked by means of a focus adjuster, which has a scale marked for objects at varying distances. Two "brilliant" view-finders are fitted, and screw bushes are provided at the side and bottom of the camera, so that it may be placed on a stand to take pictures either way. The whole is well finished, and presents a very attractive appearance.

THE "VICTORIA" PHOTOGRAPHIC CAMERAS.

James Woolley, Sons and Co., Ltd., Victoria Bridge, Manchester.

This firm runs a special series of cameras under the name of "Victoria," the No. 0 "Victoria" Hand Camera, a new camera this season, is an exceptionally cheap line and is a thoroughly reliable article, made of mahogany and covered with real leather. It carries twelve quarter-plates in ordinary sheaths, and is provided with an automatic plate register. The lens is a rapid achromatic working at F/11, is fitted with rotating diaphragms, and time and instantaneous shutter with varying speed indicator. It is also fitted with two brilliant finders, leather handle, etc., the price being £1 2s. 6d

The No. 1 "Victoria" Hand Camera is well known. It is well covered in best quality morocco, and is provided with a very superior handle. It carries twelve quarter-plates in sheaths, which are changed accurately by a simple lever movement, which also automatically registers the exposures made. The lens is an achromatic of best quality with iris diaphragm, suitable both for instantaneous work and for groups. The shutter is arranged for time and instantaneous exposures, and can be regulated at varying speeds. The two finders are of the usual brilliant form. Price, £1 15s. The other cameras in this series all possess special features, they are thoroughly well made and finished and the prices are reasonable. — Messrs. Woolley also have another line, a new quarter-plate folding hand camera as here illustrated, which is quite unique at the price. It is made in mahogany polished inside, and is covered with best morocco. The camera is provided with long extension, consequently it is applicable both for short and long focus, in addition to ordinary hand camera purposes. It is fitted with a Bush's hand camera lens with focussing jacket, improved direct vision view finder, focussing screen, also focal plain shutter, thus making it one of the most practical cameras at present on the market. The price of the camera complete with three double dark slides is six guineas retail price, or it is proposed to supply it with a plate changing arrangement for twelve plates instead of the dark slides, at a slight extra cost.



NEW PHOTOGRAPHIC APPARATUS
for 1899.

The "EXPRESS."
MARVELLOUS VALUE.
16/-
Takes Twelve ¼-plates. Achromatic View Lens. Covered in neat black cloth.

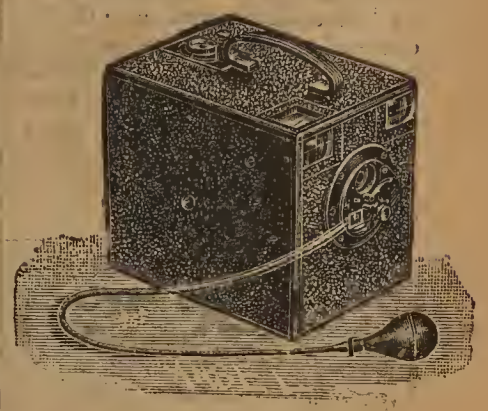
No. 2 "MIDG." 50/-

Marvellous value for money. 1899 Pattern. Greatly improved. Covered in real Morocco.

1899 SPECIAL.
No 3 "MIDG."

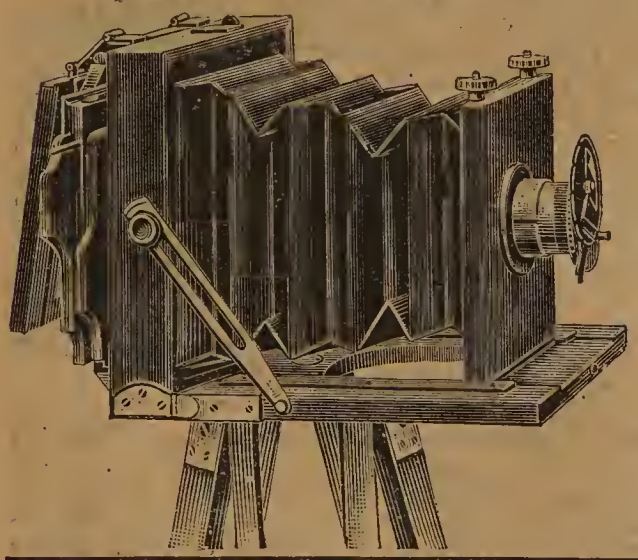
R.R. Lens, Iris, Focussing, Reversed Finders, Indicator. Simplest Changing. **£3 3s.**

SUNBEAM. 55/-



Rectilinear Lens, Focussing, T. and I. Shutter, very small. Hold 12 plates. Perfect changing system.

No. 2 OUTFIT:



SPECIFICATION.

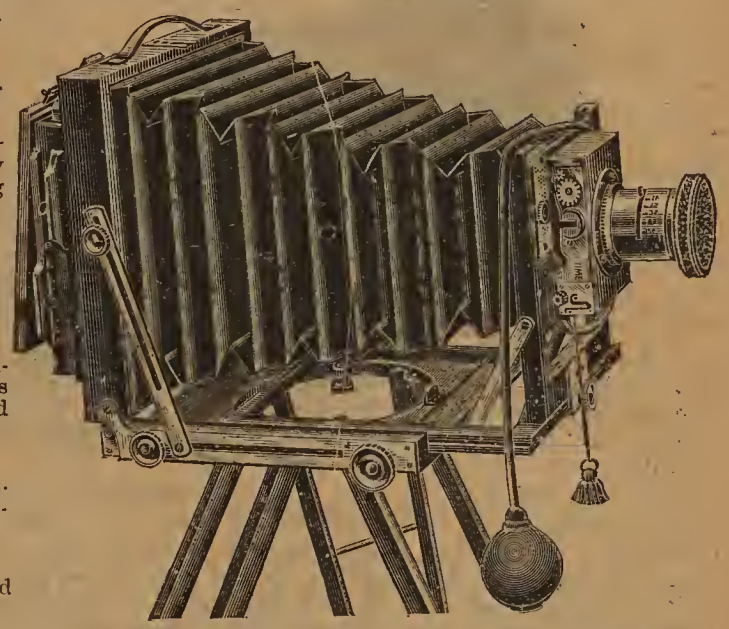
Camera— Polished mahogany.
Dark Slide— Double with hinged shutters.
Lens— Single achromatic.
Shutter— Three speed revolving metal.
Stand— 2-fold pine, with straps.

¼-plate - £1 1s.
½-plate - £1 10s.

STAND CAMERA OUTFITS of every description kept in stock, from **15s.** to **20 guineas.**

No. 4 OUTFIT:

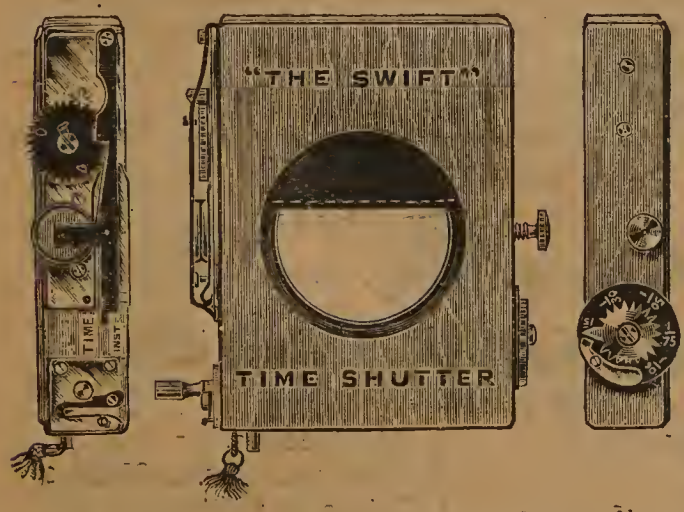
Specification



Camera— Mahogany polished.
Dark Slide— Mahogany with spring catches.
Lens— Double achromatic rectilinear, iris.
Shutter— Time and Instantaneous with speed indicator.
Stand— 3-fold, ash, fitted to turntable.
Turntable is not supplied in ¼-plate.

¼-plate, **£3.** ½-plate, **£3 10s.** 1/1-plate, **£5 10s.**

"SWIFT" ROLLER BLIND SHUTTERS.



Time and Instantaneous.

SNAP-SHOT.

Behind or before Lens the same price.

All fitted with Speed Indicators.

Tube and Ball to each Shutter

Price:—	1½	1⅝	2	2½	3	3½-in.
T. & I. pattern—	15/-	15/-	16/6	18/-	21/-	24/-
S.S. do.		1½ 9/-	1⅝ 9/-	2-in. 11/-		

"Primus" Patent Printing Frames.

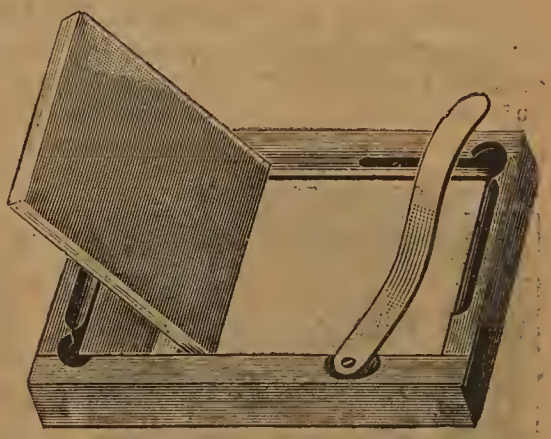
THE NEW PRINTING FRAME

Absolutely no projections when closed.

NOTE THE PRICES.

Entirely machine made, perfectly smooth white wood.

EVERY CHEMIST SHOULD ORDER A **SAMPLE DOZEN.**



EVERY FRAME IS SENT OUT IN NEAT CARDBOARD ENVELOPE.

SUPERIOR TO ANY FRAME AT THE PRICE.

Prices:—	¼-plate	5×4	½-plate	1-plate	10×8	12×10	15×12
	5d.	8d.	9d.	1/6	3/-	4/-	6/-

W. BUTCHER & SON, Blackheath, LONDON, S.E.

MANUFACTURERS OF EVERY DESCRIPTION OF PHOTOGRAPHIC APPARATUS AND SUNDRIES.
LIBERAL DISCOUNTS TO CHEMISTS AND DEALERS.

THE "DIAMOND" CAMERA AND DEVELOPERS.

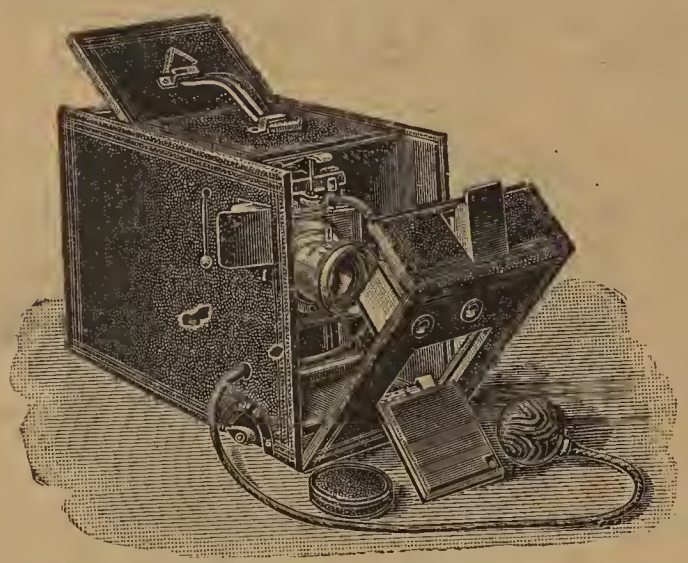
J. E. Lockyer, 87, Evelyn Street, Deptford, S.E.

This camera is extremely neat, is suitable for the pocket, and retails at a guinea. It takes six plates, $2\frac{1}{8}$ by $1\frac{5}{8}$ (a quarter of a quarter-plate), which are stored in sheaths at the back of the camera, and are released in turn by pressing a small knob on top. It has a landscape lens of fixed focus, two view-finders, and an ever-set time and instantaneous shutter. Lockyer's developers, toning and fixing, intensifying, and other solutions are so well known as scarcely to need mentioning, except to say that these are Mr. Lockyer's specialties, on which a liberal discount is allowed. e also has a special brand of plates, the "Diamond," and is a dealer in all photographic sundries—cameras, lenses, fine chemicals, etc.

THE HANOVER HAND OR STAND CAMERA.

Evans, Sons and Co., Hanover Street, Liverpool.

This is a very useful form of camera for all-round work, as it answers every purpose of a stand camera, and when in use as a hand camera the mechanism is enclosed. The camera is fitted with a rapid rectilinear lens with iris diaphragm and a roller-blind shutter working behind the lens, for time or instantaneous exposures. Both a pneumatic and a cord release are provided, and the lens

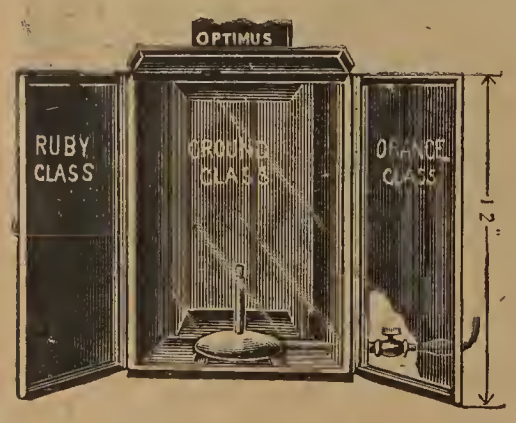


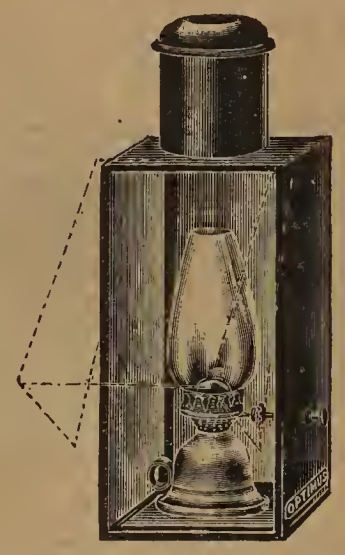
panel is removable. The focussing is performed by turning the thumb nut at the side, and a focussing scale for various distances is attached. There are two finders with sunshades. The plates are contained in double backs of special form, three of these being carried in the camera. All the woodwork is of mahogany, and the covering is of best morocco leather. Price £4 4s., extra dark slides 4s. 6d. each.

OPTIMUS DARK ROOM LAMPS.

Perken, Son and Rayment, 99, Hatton Garden, E.C.

The ordinary amateur is rather apt to underrate the importance of having a good dark room lamp until it is pointed out to him or he finds it out for himself that the quality of his work is very largely dependent upon whether his dark room operations can be conducted in comfort or otherwise. It always pays in the long run to have a good dark room lamp. The Optimus universal lamp is especially designed for professional photographers. It is made to burn gas, and has the regulating tap on the outside. Ventilation is fully provided for by a shaft (which does not appear in the illustration), and the body of the lantern is kept cool by an induced current of air. There is no leakage of light through air-holes or otherwise. Hinged windows are provided into which any light filtering media that may be preferred are fitted, and by this arrangement the amount and quality of the light may be varied at will, thus allowing all descriptions of sensitive materials to be manipulated under the





best and most comfortable conditions as regards light. Price 15s. —A less elaborate but still a very sensible and efficient form of lamp is here shown. It is large enough to allow of a window giving ample light for all purposes, and the window pane is removable, so that any desired medium may be used. The lamp burns paraffin, and as the wick adjustment is from the outside, the light may be turned up or down without exposing the sensitive material under treatment to the naked light. A good feature of this lamp is the eye-shade, indicated in the illustration by dotted lines. The lamp sells at about 5s — A similar but smaller form is fitted with a patent night-light lamp, which, while giving a fair amount of light, consumes paraffin at the rate of about onepennyworth for 240 hours' burning. The lamp seems to answer admirably, and is entirely free from smoke or smell. In this case, too, the window is removable, and may be fitted with any desired medium. This sells at about 2s. 9d. The little night-light lamp is fitted to a variety of developing lanterns at various prices, among them well-known square folding lamps. As this packs into a very small compass and it is unbreakable, the sides being of ruby fabric—it has always been a favourite one for tourists and travellers.

PHOTOGRAPHIC BOOKS AND PERIODICALS.

Dawbarn and Ward, Ltd., 6, Farringdon Avenue, E C.

This firm makes a specialty of photographic literature, and is open to supply dealers with any book or periodical bearing upon the subject of photography. Chemists who wish to cater for the amateur photographer in the matter of reading, as well as in photographic sundries, cannot do better than enter into communication with Messrs. Dawbarn and Ward.

TO THE ROYAL FAMILY,

To the Principal Courts and Governments, Universities and Hospitals.

Medals and Highest Awards at all Great International Exhibitions.

ROSS, Ltd.

MANUFACTURERS OF CELEBRATED

Photographic Lenses, Cameras, Optical Lanterns,

Microscopes, Field and Opera Glasses, Telescopes, &c.

LIBERAL TERMS TO CHEMISTS.

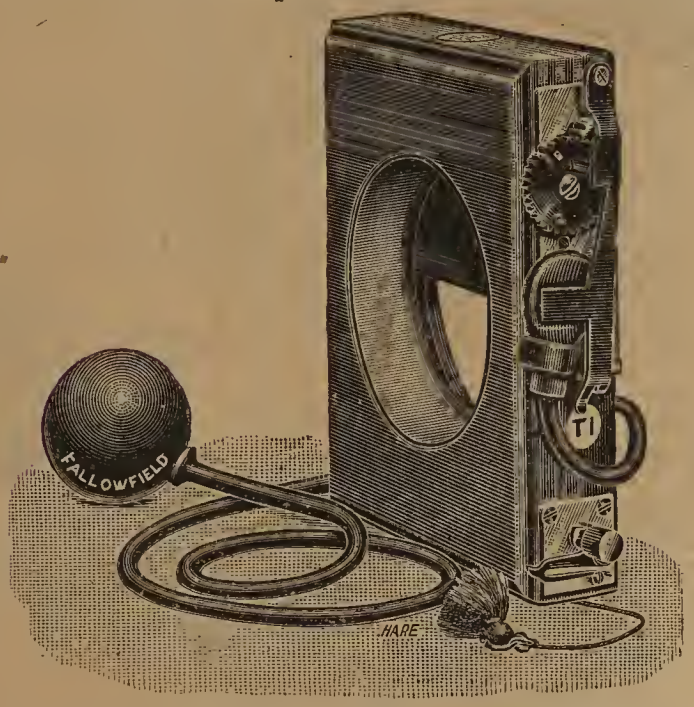
111, New Bond Street, London, W.

Estab. 1830. Works, CLAPHAM COMMON. Lists Free.

FALLOWFIELD'S NEW ROLLER BLIND SHUTTER.

Jonathan Fallowfield, 146, Charing Cross Road, W.C.

Except where the highest possible speed is required, the roller blind shutter has established itself as the most reliable kind for general use. It can never be an extremely cheap shutter, the amount of skilled labour entailed in its production precludes that, but Messrs. Fallowfield have succeeded in producing a shutter which has every good point of its predecessors at a considerable reduction



in price. From the specimen submitted to us we find the shutter can be adjusted for time as well as instantaneous exposures, and there is a speed regulator which allows the shutter to be set to work between approximately $\frac{1}{10}$ to $\frac{1}{100}$ of a second. The release is of the usual kind, with tube and indiarubber ball. Selling price for ½-plate, 15s.

A HALF-GUINEA HAND CAMERA.

T. Edwards and Co., Dyott Street., Oxford Street, W.C.

A hand camera to sell at half-a-guinea is useful stock to most dealers. This camera takes six $3\frac{1}{4} \times 3\frac{1}{4}$ inch plates and has automatic changing arrangement. It has time and instantaneous

shutter and view finder. The camera is neatly covered with cloth and is small in bulk. Messrs. Edwards and Co. are also showing a general assortment of optical goods and offer good terms to chemists stocking their goods.

THE "PHŒNIX" DARK ROOM LAMP.

Reynolds and Branson, 14, Commercial Street, Leeds.

This lamp is intended for use with gas, and is made in two sizes, the smaller size being $11\frac{1}{2}$ ins. high and $7\frac{3}{4}$ ins. wide; it has double casing, thus securing a cool exterior, good ventilation, and absence from smell. It has also a special tap which enables the operator to obtain instantly either an actinic or non-actinic light. A similar lamp with an inch burner is also sold by the firm for use with petroleum.

FALLOWFIELD'S PHOTOGRAPHIC ANNUAL

Now Ready. **1899.** Now Ready.

The Reference Book and Text-Book of the Photographic Trade.

"FACILE"

Hand Cameras.

The Largest and Best Stock of

PHOTOGRAPHIC APPARATUS and MATERIALS

in the World.

Special Terms to Chemists and Photographs for Window Display,
and Sample Tins of P.O.P. Mountant for Free Distribution.

JONATHAN FALLOWFIELD, Central Photographic Stores

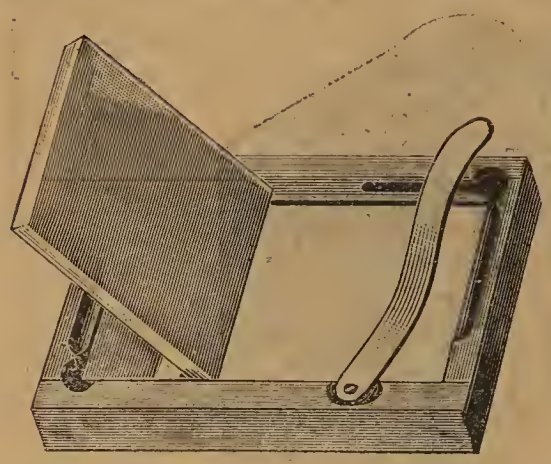
146, CHARING CROSS ROAD, LONDON.

NEW PRICE LISTS CONSTANTLY ISSUED, AND POST FREE ON APPLICATION.

NEW "PRIMUS" PRINTING FRAME.

W. Butcher and Son, Blackheath, S.E.

The specimen new patent "Primus" printing frame submitted for examination is a printing frame of quite a new pattern. The springs are sunk and instead of slipping under the ordinary projecting metal catch they are passed into a groove in the frame. They are entirely machine-made and consequently perfectly true everywhere, reducing the risk of broken negatives to a minimum. They are nicely finished, and the general appearance at once commends them in preference to the old teak frames. The primary object of the makers has been to produce a high-class printing frame at the low price of the ordinary teak, which have been a source of much trouble to amateurs specially; it is made in maple-wood, is exceedingly strong and not liable to warp. There are no projections whatever and each frame is sent out in a neat cardboard case.



XIT CAMERAS.

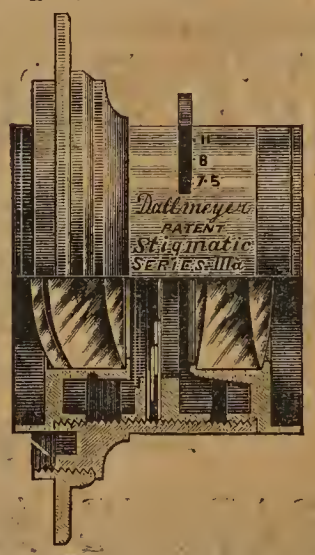
J. F. Shew and Co., 87 and 88, Newman Street, W.

The Xit cameras are now so well known that no description of their general features is necessary. To meet the demands of the coming season Messrs. Shew and Co. have introduced several new patterns to suit the pockets or the desires of all classes of hand camera workers.—The "Convertible" Xit is designed for use with the Zeiss convertible or the Dallmeyer stigmatic lens, and is arranged to take the lens in its entirety, and also to extend so that one of the combinations can be used by itself. The extension ranges between 5 and 9 inches, and is obtained partly by the provision of a second forward pair of grooves to take the front, and partly by reaching out the back, the rack being of course available for focussing under any circumstances. A swing back and rising front are provided. The body is made sufficiently deep to enclose the lens and shutter when the camera is folded up. It is a beautifully made instrument, mounted and fitted with aluminium. The double backs are aluminium bound, with perfect light trap and new method of filling in at the end, whereby leakage of light is rendered impossible; springs automatically close the shutters, which are each printed with notes for exposure, stop, etc. They fit immediately into the camera, without sliding in. The price, including three double backs, leather case, and Zeiss convertible lens, is £15 15s., or with Dallmeyer's stigmatic lens, £12 12s.—It is rather a jump to come from this high-priced instrument to the Popular Guinea Xit, and this naturally appeals to a different class of customer, but, notwithstanding the low price, it is a capital little camera. It is in polished mahogany, with a single lens and a shutter similar in design to that of the original Xit. There are three double backs of entirely novel construction. They are thoroughly well made and quite efficient. The method by which they are fitted to the camera so as to exclude light is very ingenious, and at the same time simple. A focussing screen and finder are provided. It is a capital guinea's worth.—Those who prefer a shutter on the roller-blind principle can be suited in the 3A Xit. This is fitted with a Thornton-Pickard aluminium shutter, with pneumatic and trigger release for time and various speeds, and a rapid rectilinear lens, with iris diaphragm. A slight modification of the form of the "leaves" permits them to be folded over the shutter. There is a focussing arrangement, rising front, focussing screen, three double backs, and the usual fittings. A neat canvas case is provided. Price £3 3s.—The 2A Xit is similar in every respect, except that a Bausch and Lomb shutter is fitted.

THE STIGMATIC LENS, SERIES III.A.

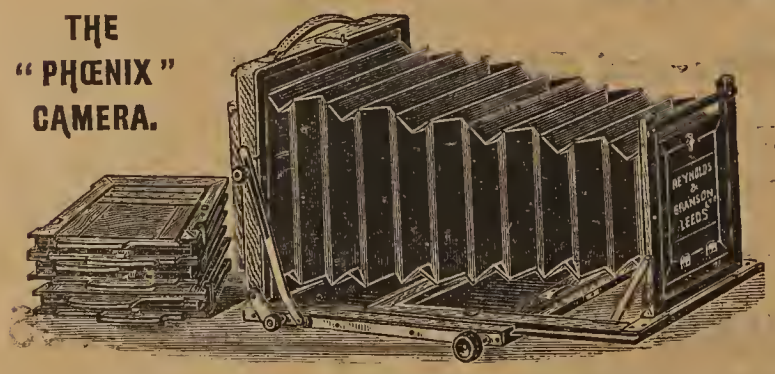
J. H. Dallmeyer, Ltd., 25, Newman Street, W.

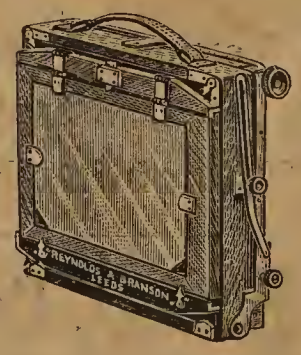
This new series of the Stigmatic lens is intended for the same class of work as the Rapid Rectilinear, and will be issued at approximately the same prices. This series will cover the plates for which they are scheduled at full aperture of F/7·5, without astigmatism or curvature of field, while with an aperture of F/16 an angle of about 75° is embraced. Unlike the Series II. Stigmatics, these lenses are not convertible, but are intended to be used intact. The smallest size, No. 1, 5 in. eq. focus, is now ready for delivery, and forms an admirable hand camera lens. Price, with iris, £3 17s. 6d. It should be noted that the combinations of this series are more widely separated than is usual with anastigmats, and that they are consequently very suitable for fitting to diaphragmatic shutters.



REYNOLDS & BRANSON, LTD.

THE "PHŒNIX" CAMERA.





The "Phœnix" Camera is very simple in construction, and when folded up occupies very little space. It is also a very light model; the half-plate size only weighs 2¼ lbs. The back has reversing frame, and slides forward to allow of the use of short focus lenses. The double dark slides with improved spring catches are of the best construction and finish. **Price**, with three double dark slides, half-plate size, **£4 17s. 6d.**

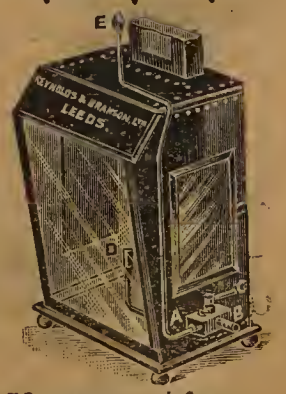
THE "PHŒNIX" DARK-ROOM LAMP.

The "Phœnix" Lamp is a boon to all photographers who have gas at their disposal. The lamp is 11½ inches high and 7¾ inches wide, has double casing, which secures a cool exterior, good ventilation, and absence of smell. By turning the tap to A, white light is obtained; at C, non-actinic light; while at B, both jets are turned down to non-luminous light.

Price 15s.; postage, **1s.**

Ditto, larger size, 12½ inches high and 8½ inches wide,

Price 20s.



Illustrated Catalogue, 72 pages, post free.

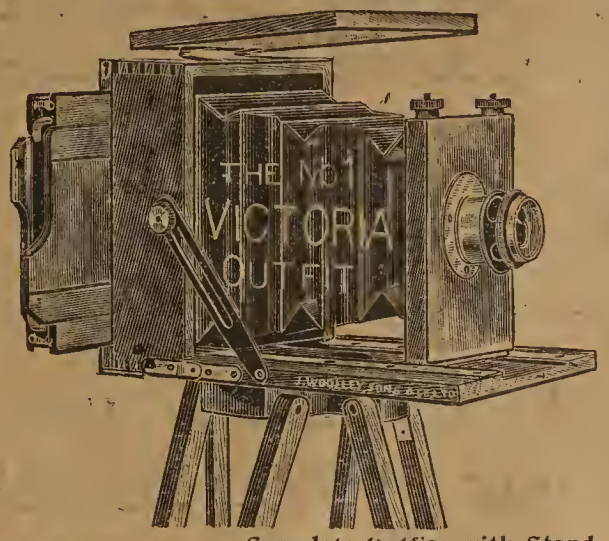
14, COMMERCIAL STREET, LEEDS.

VICTORIA CAMERAS

COMPLETE OUTFITS FROM £1 1s.

¼ plate,
£1 1 0

½ plate,
£2 2 0



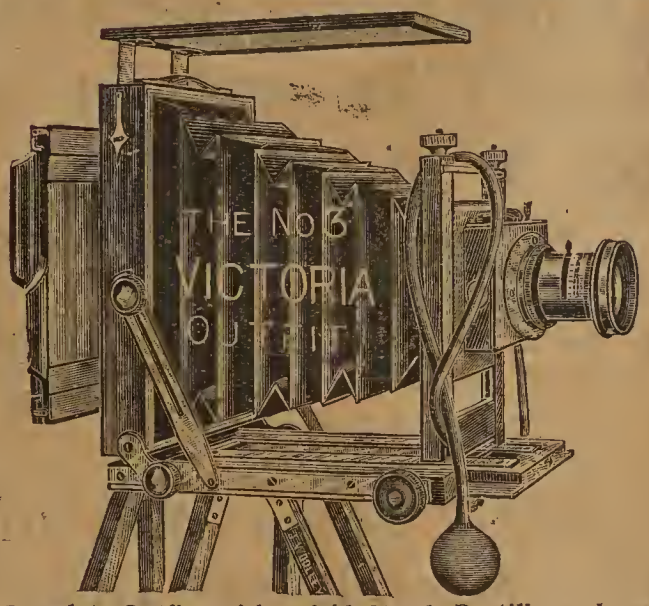
¼ plate,
£1 11 6

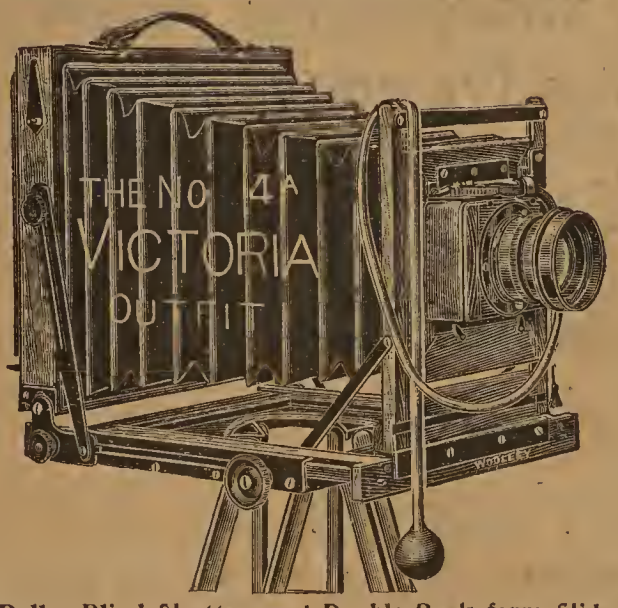
½ plate,
£2 7 6

Complete Outfits with Stand, Lens, and Double Book-form Slide.

¼ plate,
£2 10 0

½ plate,
£3 10 0





½ plate,
£4 4 0

1/1 plate,
£7 7 0

Complete Outfits with 3-fold Stand, Rectilinear Lens, Roller Blind Shutter, and Double Book-form Slide.

Carries
12
¼ plates,
£1 2 6

Carries
12
¼ plates,
£1 15 0

Manufacturers of Washable Backgrounds. Price List on Application.

JAMES WOOLLEY, SONS & CO. LTD.

Photographic Catalogue Free on application.

Victoria Bridge, **MANCHESTER.**

Liberal terms to the Trade.

PHOTOGRAPHIC REQUISITES

SEASON 1899.

We have pleasure in informing you that the NEW EDITION of our PHOTOGRAPHIC LIST, thoroughly revised, with many additions, is now ready, copy of which will be sent on application. We are prepared to supply these with Chemist's own name and address as usual. Early application is solicited as we expect being out of print shortly.

You cannot do better than stock one of our "HANOVER" CAMERAS, especially the new Hand or Stand (Quarter Plate) as described on opposite page.

N.B.—BEST DISCOUNT GIVEN TO BUYERS FOR EXPORT.

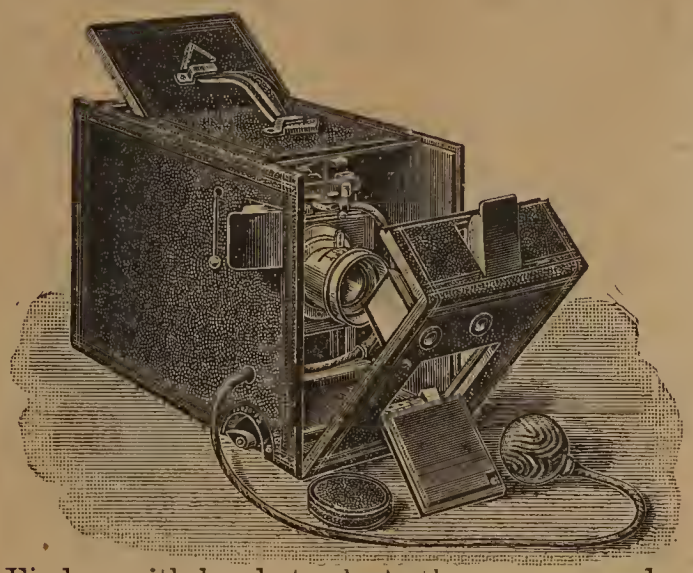
EVANS, SONS & CO.

LIVERPOOL.

LONDON—
EVANS, LESCHER & WEBB.

CANADA AND UNITED STATES—
EVANS AND SONS, LIMITED.

"Hanover" ¼-Plate Hand or Stand Camera



The body, though covered with the best Morocco Leather, is made throughout of mahogany, and will stand harder wear than those made of stained soft wood.

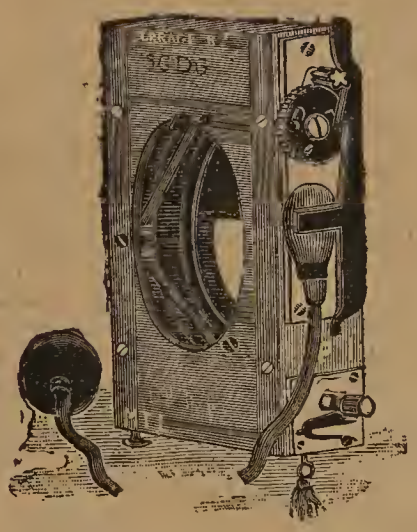
A focussing scale, which is marked accurately for each Lens supplied with the Camera, is at the right hand side; this will be found useful for so-called Snap-shot photography, or the Camera may be fixed upon a Tripod and the picture composed on the focussing screen; with this object in view a rising front with a clamp is fitted.

Dark slides are acknowledged by many to be the most reliable form for carrying plates; the Camera carries three double slides which are of special form, making it most compact. The Lens is the best quality Iris Rapid Rectilinear working at F8. The Shutter is a behind Lens roller blind pattern with pneumatic and cord release, also a loose panel for Lens. Exposures from 1/15th to 1/90th part of a second, or time exposures may be given. Two Finders with hoods to shade the sun rays and protect the Camera from dust when closed are supplied.

Less usual trade discount. } **¼-Plate Camera with three Dark Slides, Iris R. R. Lens, Time and Instantaneous Shutter. Two view finders.** } **£4 4s. 0d. each.**

Extra Dark Slides... ... ... 4s. 6d. ,,

Usual Trade Discount.



"Hanover" Roller Blind Shutter

"Hanover" Roller Blind Shutters, Standard Pattern, Time and Instantaneous with Speed Indicator. Range of speed from 1/15th to 1/90th part of a second. Ball and tube pneumatic release. The mechanism is simplicity itself and not liable to get out of order.

Suitable for ¼-plate Lens with Speed Indicator ... 16s. each.

,, ½ ,, ,, ,, ... 17s. ,,

Usual Trade Discount.

"Hanover" Behind Lens Roller Blind Shutters

TIME & INSTANTANEOUS WITH SPEED INDICATOR

This is the best form for Cameras with square bellows, or with cut-out baseboards. They are of first class workmanship, and we have every confidence in recommending.

Suitable for ¼ and ½-plate Cameras with Speed Indicator ... 15s. each.

,, ½ and 1/1 ,, ,, ,, ... 16s. ,,

Usual Trade Discount.

EVANS, SONS & CO.

LIVERPOOL.

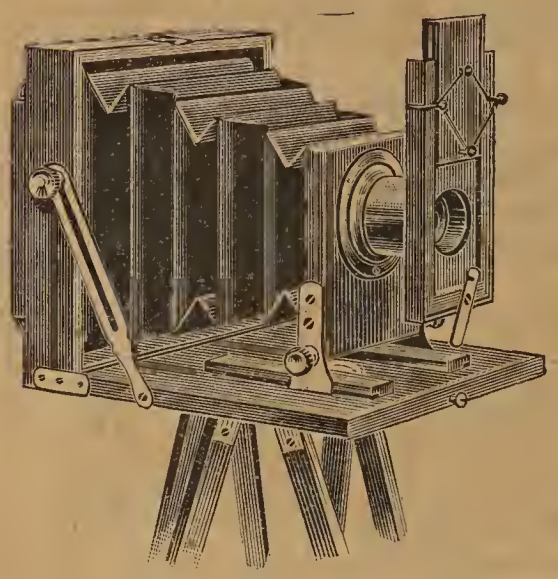
LONDON:
EVANS, LESCHER & WEBB.

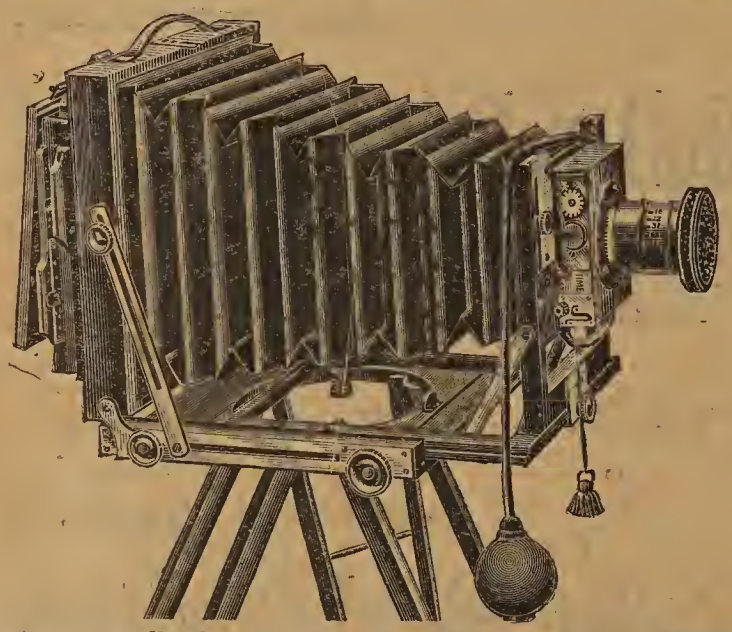
CANADA & UNITED STATES:
EVANS & SONS (LIMITED).

BUTCHER'S PHOTOGRAPHIC OUTFITS.

W. Butcher and Son, Blackheath, S.E.

A good series of photographic outfits at prices from 15s. upwards is offered by this firm. The No. 1 Outfit has a camera of polished mahogany, with taper bellows and folding baseboard, mahogany dark slide for two plates, with vulcanite shutters, single view lens, with fixed stops and cap, mahogany rebound shutter, giving instantaneous exposures, and two-fold pine stand, with straps. Price complete (quarter-plate), 15s. The No. 4 Outfit consists of a polished mahogany camera, very compact, with leather bellows, reversing and swing back, double extension, back slides to the front for wide-angle lenses, rising front and handle for carrying, and turn-table fitted in baseboard, mahogany polished book-form dark slide, with spring catches to the shutters, rapid rectilinear double achromatic lens, with iris diaphragms, "The Swift" time and





instantaneous roller-blind shutter fitted behind the lens, with speed indicator and pneumatic release, and a three-fold, ash, rule joint stand, fitted to turntable in the baseboard. The turntable is not supplied in quarter-plate but the camera is made very compact, the shutter forming front of the camera, and a four-fold stand is supplied in place of three-fold. Prices complete: Quarter-plate, £3; half-plate, £3 10s.; ½-plate, £5 10s. The other cameras of this series all have special features, and are capital value for the prices charged.

VIEW FINDER.

W. Butcher and Son, Blackheath, S.E.

The "Primus" view finder covers as near as possible the same field as an ordinary R.R. lens in any size. It shows the picture in the correct position, not inverted as in the ordinary inexpensive brilliant finders, while each finder is provided with two fittings for the camera, and can be used either on the side or top of camera. It also shows the picture either for horizontal or vertical positions. Price 3s. 6d. each.

"TABLOID" PHOTOGRAPHIC CHEMICALS.

Burroughs, Wellcome and Co., Snow Hill Buildings, London, E.C.

These chemicals are of the finest quality compressed into accurate quantities. Solutions for use can be immediately prepared by dissolving them in water. There are no complicated formulæ to worry about: no weighing or measuring is necessary, and fresh, active solutions are always instantly available. "Tabloid" chemicals are simpler to use than stock solutions, take up less room, and are more reliable. They keep perfectly, and for touring or for travelling are particularly well adapted, because of their extreme compactness, portability and convenience. Their daintiness, cleanliness and easy manipulation must appeal strongly to lady amateurs. The high technical and artistic excellence of the results obtained by the use of 'Tabloid' photographic chemicals has been recognised by the selection committees of the leading London and Continental Photographic Exhibitions, and by awards in open competitions. Some important additions have recently been made to the list. "Tabloid" sodium formate compound with "Tabloid" gold chloride is the first preparation to place a most valuable toning formula at the disposal of photographers. Every one who has met with difficulties in toning should try this bath. "Tabloid" pyro-soda developer (Ilford formula) provides users of Ilford plates with the official formula in a compact, portable and convenient form. "Tabloid" ammonium persulphate is a reliable preparation of the salt which has recently been so widely recommended for correcting density, particularly when there is excessive contrast due to under-exposure, or other cause.

IMPROVED XYLONITE FILMS.

Fitch and Co., Seldon House, Fulwood's Rents, Holborn, W.C.

Fitch's films have now been before the public for several years, and besides their being the first celluloid films prepared and offered commercially in this country, their reputation has been fully established by reason of their excellence of manufacture and the satisfaction derived from the use of them. The careful study of the very necessary requirements for the production of a perfect film and the manipulation of celluloid has enabled the manufacturers to overcome many technical difficulties, and by the concentration of every energy to this end they have succeeded in bringing celluloid films to a high state of perfection both as to reliability and uniformity. The particular emulsion with which these films are coated is the outcome of much practical experiment, and they are now able to be produced of a rapidity which will compare very favourably with the highest speed yet obtained with glass plates, thus rendering them suitable for the quickest exposures.

THE "APTUS" MAGAZINE CAMERAS.

Sharp and Hitchmough, Photographic Dealers, Liverpool.

This firm manufactures numerous photographic specialties, and does a general wholesale trade in photographic goods. Two goop lines are the "Up-to-Date Aptus" and the "Automatic Aptus" magazine cameras, sold at 30s. and 21s. respectively. Liberal terms are allowed to chemists.

Photographic Chemists ! ! !

THE NEW "ONYX"

HALF-CROWN CAMERA.

¼-plate size, *well made in Wood*, covered in imitation cloth, with nickel-plated lens, dark slide, focussing glass, plates, chemicals, and instructions.

TRADE PRICE 20/- DOZEN.

Sample Camera and Illustrated List of cheap Outfits sent on receipt of trade card and postal order for 2/-

B. LOWE & CO.,

2, WARSTONE PARADE, BIRMINGHAM.

SHEW'S PATENT REFLECTOR CAMERA.

J. F. Shew and Co., 87 and 88, Newman Street, W.

This camera, enabling the operator to view and focus the image in its entire size up to the moment of making the exposure, has much to recommend it to those who make figure studies, or photographing moving objects, a speciality. The composition and lighting of the picture can readily be seen, and the object secured with certainty in proper position on the plate; it is, in fact, the equivalent of a twin-lens camera at a considerable reduction in cost and of half the size. The main features of the camera are the full-sized view finder, with special folding hood. Rack and pinion focussing arranged to enable the picture to be composed immediately before exposure. Reversing frame for horizontal or vertical pictures without turning the camera. Roller-blind shutter with adjustable speeds. Magazine cartridge holder or double backs, removable focussing screen and tripod fittings for stand exposures. Price, quarter-plate covered in leather, with carrying handle and shoulder strap, three "Xit" pattern double backs, focussing screen and tripod fittings, rapid rectilinear lens, £4 4s. Extra rapid Euryscope lens, £4 17s. 6d. The camera is also made for 5 × 4 plates.

ENLARGING, DEVELOPING, PRINTING, ETC.

Myers and Frost, 46a, Market Street, Manchester.

The Manchester Photo Enlarging Company (Messrs. Myers and Frost) has been established over thirty years, during which time it has gained a good reputation as being competent to turn out satisfactory work in the special business of photographic enlargements. Chemists who are asked by customers to supply enlargements from small negatives should apply for the price list of the firm; special terms are given to dealers.

John Done and Co., Photographic Works, New Barnet.

This is a well-known and old-established house for printing, developing, retouching, enlarging, mounting, making lantern slides, copying, intensifying, and turn out the highest class work. A liberal discount is allowed to photographic chemists and dealers.

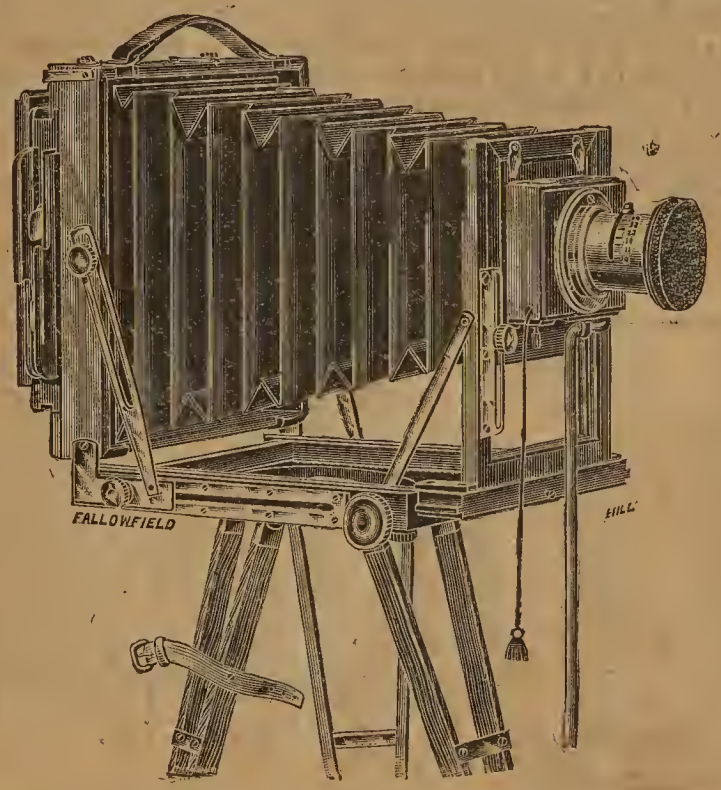
J. Martin and Co., New Southgate, London, N.

This firm has an extensive photographic works at the above address, and undertakes the work of enlarging, developing, copying, and printing for amateur photographers and others. The work done by Messrs. Martin and Co. gives every satisfaction, and their prices compare favourably with those of other firms.

THE CELERITY CAMERA SET.

Jonathan Fallowfield, 146, Charing Cross Road, W.C.

Until now, the cheapest half-plate set anything worthy of the name of serious apparatus was sold at about four guineas, but that included only a single lens, and the whole was of very rough workmanship. Even that was considered a marvel of cheapness. At a considerably less price Messrs. Fallowfield are now offering a camera set which even the most fastidious worshipper of good apparatus would find it difficult to find anything to complain about. The camera contains every movement and adjustment to be found in the highest-priced instruments of similar pattern,



reversing and swing back, rising front, forward motion of back for wide angle work, and is fitted with turntable to take the tripod legs. The wood is of good quality and well finished, and the brasswork exceptionally good. One of the new roller-blind shutters is fitted behind the lens, with adjustment for time and instantaneous exposures, speed regulator, and pneumatic release. The lens is a rapid rectilinear of good quality with iris diaphragm. The tripod is of ash, three-fold, with a sliding bottom section, and the dark slide is book-form. Price, ½-plate, 70s.; whole-plate, 105s.

"SPORTS" MOUNTS.

Jonathan Fallowfield, 146, Charing Cross Road, W.C.

This new series of mounts promises to become very popular. There are six designs appropriate to cycling, rowing, racing, lawn tennis, cricket, and sailing, which are blocked in somewhat high relief and are very tasteful. The mounts are made both to slip in or paste on the photographs, and suit prints of all sizes up to half-plate, including pocket Kodak, Frena, etc. The prices are very moderate.

J. E. LOCKYER

EXPORT CHEMIST &

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Lockyer's Hydroquinone Developer, 1/3.
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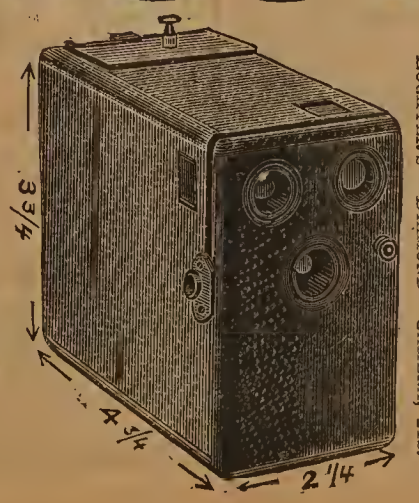
Directions for use of above in French, German and Spanish.

Lockyer's Toner and Fixer, 1/3.
Lockyer's Concentrated Toning Solution, 1/6.
Lockyer's Intensifier, 1/-.
Lockyer's Concentrated Toning Baths, 4½d. each; 4s. per dozen.

The "DIAMOND" CAMERA

Fine Photographic Chemicals,
87, EVELYN STREET,



Lockyer's "Diamond" Camera, 21s.

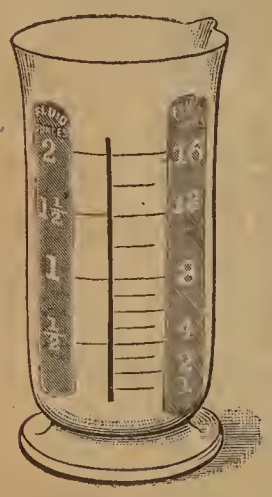
The "DIAMOND" CAMERA

Cameras, Lenses and all Photographic Sundries.
DEPTFORD, LONDON, S.E.

ROSS'S EXTRA RAPID SYMMETRICAL ANASTIGMAT.

Ross, Ltd., 111, New Bond Street, W.

The lens which was originally introduced by this firm under the title of "Universal" was of the Petzval type. It was intended for those who desired to perform all classes of work with the same lens, and although naturally it was not equal for any particular kind of work to a lens especially constructed for the purpose, as an all-round lens it became exceedingly popular. As photographic optics advanced it was found that a better instrument for general work could be constructed of the rectilinear type. With the still further advance in optical construction the second type of Universal has in its turn been superseded by an instrument to which the title may really be fitly applied. The new lens is anastigmatic, that is to say, it has a flat field free from astigmatism. Its aperture F/5·6 is sufficiently large for all classes of portraiture, and the definition is superb. It embraces a sufficiently wide angle (over 70°) for general landscape work, and from its rapidity of action it is especially useful for instantaneous work. For copying it is an extremely valuable instrument. The price works out at about £1 for each inch of focus from 6 to 12 inches. The larger sizes are rather more expensive.



GLASS GRADUATES.

Evans, Sons, and Co., Hanover Street, Liverpool.

Every photographer has experienced the annoyance of not being able to distinguish the scale markings on glass graduates of the usual kind in the dim light of the dark room. In this series the trouble from this source is distinctly lessened, without a corresponding increase in the price. The measures are of good shape, and are made of good glass. Prices: 1 dr., 4d.; 2 dr., 4½d.; 1 oz., 4d.; 2 oz., 5d.; 4 oz., 7d.; 10 oz., 10d.; 20 oz., 1s.

NELSON'S PHOTOGRAPHIC GELATINE.

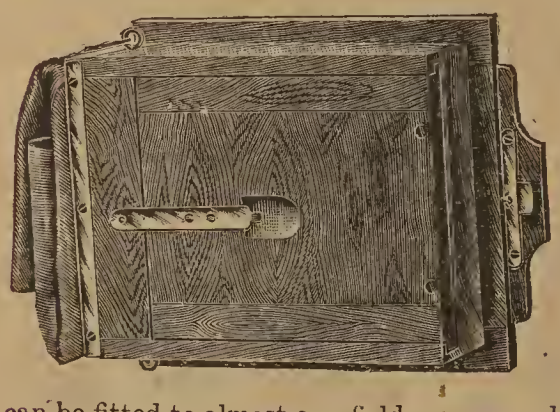
Geo. Nelson Dale and Co., Ltd., 14, Dowgate Hill, London, E.C.

A satisfactory gelatine is one of the necessary requisites for those photographers who desire to turn out good all-round work, and for this purpose Nelson's photographic gelatine has gained an excellent reputation, while Nelson's Special X Opaque Gelatine is considered by many to be the best for dry-plate and other work. It can be obtained wholesale from the manufacturers as above.

NEW "PRIMUS" DARK SLIDE.

W. Butcher and Son, Blackheath, S.E.

The "Primus" new dark slide is for using plates or cut films in stand or hand cameras, taking twelve plates or twenty-four films.

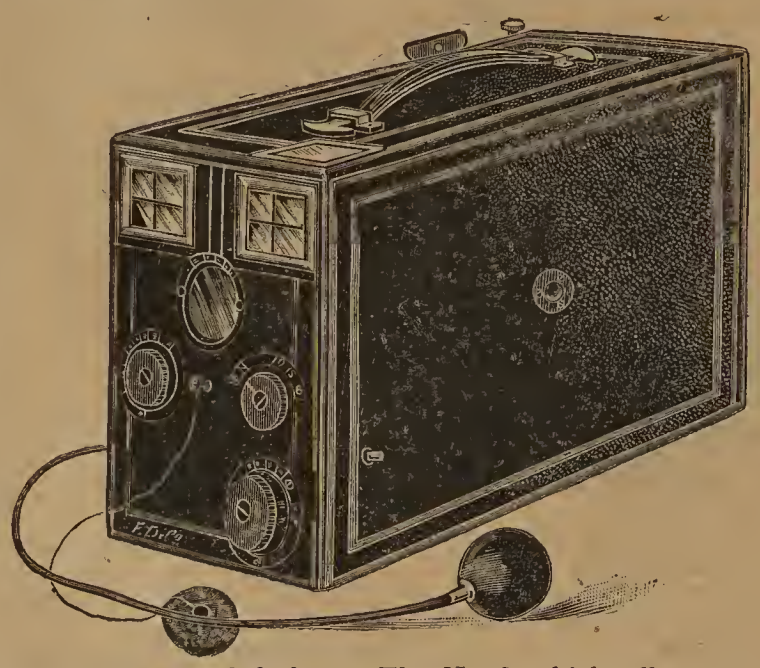


The object of this dark slide, holding as it does any number of plates from one to twelve (as required), is to replace the ordinary cumbersome dark slide holding only two plates. This slide occupies less space than three ordinary slides, only costs the price of one, and is manipulated with much less trouble. It can be fitted to almost any field camera and to most ordinary hand cameras without alteration, the register being $\frac{3}{16}$" as generally adopted. Price, quarter-plate, complete with twelve sheaths, 12s. 6d. Set of twenty-four film sheaths, 6s. Other sizes are in preparation.

THE "EXCEPTIONAL" HAND CAMERA.

F. Darton and Co., 142, St. John Street, E.C.

This seems like a valuable line, as it is undoubtedly good value. The simplest form, which sells at 31s. 6d., takes twelve plates, which are automatically changed. It has a good quality achromatic lens with iris diaphragm, an extra-rapid shutter with regulator for time and automatic exposures, plate register, and



horizontal and vertical finders. The No. 2, which sells at 40s., is a better-finished article, and has an improved form of plate register. In the best quality, which sells at 70s., a rapid rectilinear lens is fitted. The camera is adjustable for focus, and the shutter is fitted with a pneumatic release.

THE "PRIMUS" CAMERA RÜCKSACK,

W. Butcher and Son, Blackheath, S.E.

This is a means of carrying a camera which takes the form of an Alpine rücksack, and has proved itself to be the most comfortable way of carrying one's requirements whilst touring. The bag is perfectly waterproof, being lined with mackintosh, which is provided with strings, and ties up inside the outer covering. The whole is thoroughly well made in best mail cloth, with good leather fittings and web shoulder straps, very strong, and eminently suitable for the severe handling of a long tour. Price, 12s. 6d.

ALL CHEMISTS

DOING A PHOTOGRAPHIC TRADE

SHOULD COMMUNICATE WITH

DAWBARN & WARD, Ltd.

6, Farringdon Avenue, London, E.C.

Who stock and supply on the best terms nearly all photographic literature published in the English language, and obtain foreign publications for customers on the shortest possible notice.

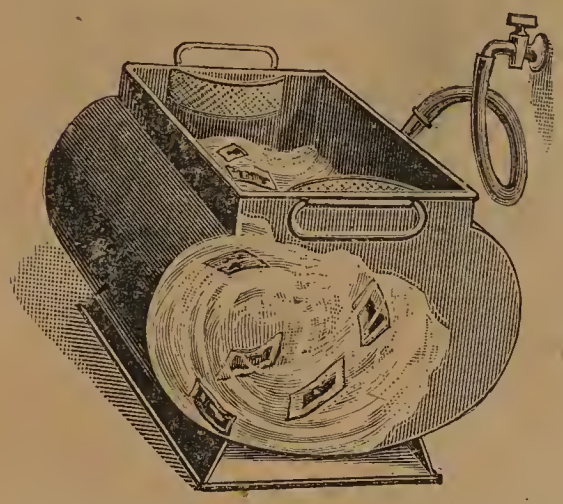
Lists and terms post free upon receipt of request with trade card.

WASHING APPARATUS.

W. Butcher and Son, Blackheath, S.E.

This firm are offering quite a new line, consisting of

a set of racks and tanks as illustrated to hold six plates each, either lantern or quarter-plates; price 3s. complete in box. They are also about to introduce a half-plate set corresponding with these which will retail at 4s. 6d. the three.—Another new line is a print washer of an entirely new pattern, which causes a constant revolution of the prints, and therefore ensures a thorough washing. The outlet is arranged from the surface of the water and does not draw the prints towards the same. The prices are:—Quarter-plate size, 4s.; half-plate, 6s.; $\frac{1}{1}$-plate, 10s.



A CHEAP HAND CAMERA.

J. Lizars, 20, High Holborn, W.C.

The No. 3 model magazine hand camera manufactured by J. Lizars strikes us as being a useful line for the dealer who wishes to run a hand camera at an extremely moderate price "on his own." This is a magazine camera for twelve plates, having a changing arrangement similar to that in the "convertible" film and plate camera. It has a good single lens, with rotating diaphragm, time and instantaneous "everset" shutter with speed regulator and two finders. It is covered with leather, and presents a very neat and taking appearance. The name of the maker does not appear on any part of it. The list retail price is 42s., but there is a very liberal discount off this to the trade, and it might be sold at a much lower figure and yet yield a substantial profit.

PHOTOGRAPHIC CHEMICALS.

Harrington Brothers, 4, Oliver's Yard, City Road, London, E.C.

This firm makes a specialty of pure photographic chemicals bottled ready for sale in all sizes, thus avoiding loss from deteriorated or dirty stock and loss of time in serving, being always ready to hand out. Messrs. Harrington Brothers also put up a special line of hyposulphite soda, alum, borax, etc., in 1-lb. patent boxes at special prices, and supply chemicals in bulk for either photographic, scientific, or technical purposes.

THE "HOLBORN" GUINEA HAND CAMERA.

G. Houghton and Son, 88 and 89, High Holborn, W.C.

We ought not to expect too much in the way of automatic hand cameras for a guinea. Nevertheless, in this we have an instrument which is well finished both inside and out, and which in appearance will favourably bear comparison with many of far greater cost. The lens is an achromatic meniscus and of good quality, with rotating stops adjustable from the outside. The shutter is for time and instantaneous exposures, and there are two finders. The plates are contained in Russian iron sheaths, and the changing mechanism is simple and not liable to get out of order. The exposed plates fall into the bottom of the camera, where they are held in position. The camera is a really useful one, with which good work could be done, and ought to be a very saleable article.

A HALF-CROWN CAMERA.

B. Lowe and Co., 2, Warstone Parade, Birmingham.

The new "Onyx" half-crown camera is of the $\frac{1}{4}$-plate size, well made in wood, covered in imitation cloth, with nickel-plated lens, dark slide, focussing, glass plates, chemicals, and instructions. This camera, although sold at a ridiculously low figure, appears to do its work well, and is certainly worth stocking, as it will doubtless frequently be the means of leading up to the sale of more expensive apparatus. The trade price is 20s. per dozen.

DALLMEYER'S POPULAR HAND CAMERA.

PRICE . . . £7 7s.

Twelve $\frac{1}{4}$-plates in sheaths, instantaneous changing, rack focussing, ever-set shutter with speed regulator, mahogany body, covered good leather, and fitted with a **STIGMATIC LENS**, working at *f*. 7·5.

Send for fully illustrated List of Lenses and Cameras.

J. H. DALLMEYER, Ltd. 25, Newman Street, LONDON, W.

"KALKO" BACKGROUND PAINT.

Vanguard Manufacturing Company, Maidenhead.

For those who wish to make a plain background or to whiten a lantern screen this is a very useful substance. It is made in various tints and in dead white. The directions for use are to place the contents of a tin in a pint of hot water, after stirring the paint is ready for use, and can be applied with a brush to paper, canvas, or almost any surface without any sizing or preparation. It gives a beautiful mat surface which does not seem liable to peel or crack. Sold in tins at 1s.

A NEW LONG FOCUS CAMERA.

J. H. Dallmeyer, Ltd., 25, Newman Street, W.

This camera is designed to combine the convenience of the American types of folding camera with the solidity and finish of the productions of the best English manufacturers. The general appearance is shown in the illustrations. The exterior is covered with strong morocco leather of hard surface and great durability, and when closed there are absolutely no projections or recesses. For use as a hand camera, or with lenses of ordinary focal length, the front baseboard is lowered and the bellows pulled out and clamped, as shown in Fig. 2. Fine focussing is effected by means of a short rack and pinion, and a scale for snap-shot work is also provided. The front carrying the lens and shutter rises, falls, and swings, thus obviating the necessity for a swing back. There is a removable door in the rear baseboard to allow of inspection of the image upon the focussing screen without having to lower the baseboard itself. The focussing screen is held in position by strong springs, and the slide is readily inserted between the screen and camera frame, the end of the slide being made and shaped for this purpose. The back reverses for horizontal and vertical pictures, and the openings through which the slide is inserted and the shutter withdrawn are provided with metal doors which effectively protect the slide when the shutter is drawn. When the camera is required for telephoto or other long focus work the rear baseboard is lowered and secured by means of a sliding frame, the back portion of the body is unclamped and fastened at any desired position on the baseboard, an extension of about three times the longest side of the plate being easily obtained. On the other hand, to provide for the employment of lenses of very short focus, the front baseboard is jointed so that it can be lowered out of the range of even the widest-angled objective. This camera seems to be an exceedingly handy instrument and to provide more facilities for the production of varied kinds of photographic work than most of its predecessors. Price with three double slides: ¼-plate, £6 12s. 6d.; 5 by 4, £7 10s.; ½-plate, £8 18s. 6d.

FIG. 1.

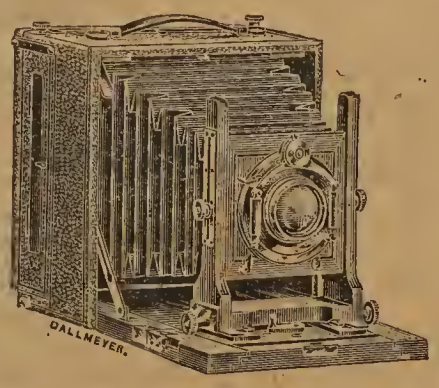


FIG. 2.

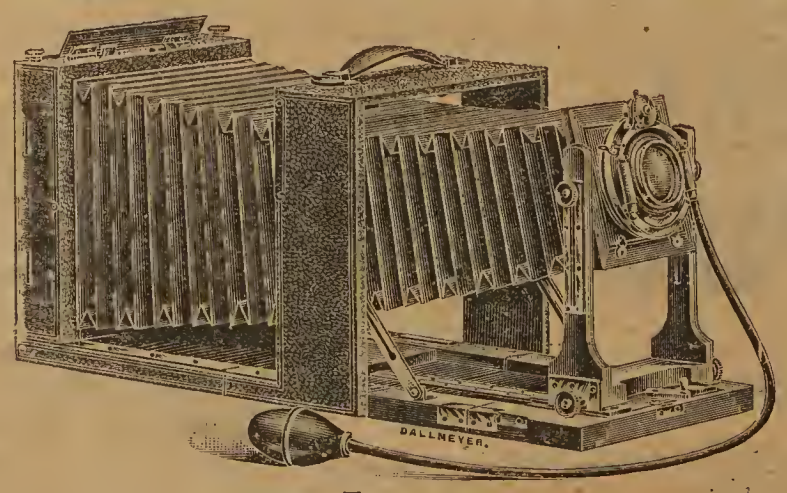


FIG. 3.

THE "REPEATER" HAND CAMERA.

W. Watson and Sons, 313, High Holborn, W.C.

This is a camera of the usual external appearance of box hand cameras, and is covered with good leather and well finished. There is an iris diaphragm to the lens, and the shutter is adjustable for time or instantaneous exposures. The two finders are of the "brilliant" description. The camera is constructed to take either rollable film or 12 quarter-plates. When used for the latter, the plates are put in sheaths, and the mechanism for changing in our hands was found to work without hitch. For films the sheaths are removed and a roll holder substituted. This is constructed to take Kodak No. 2 bullet spools for pictures 3¼ by 3. The camera sells at £3 3s., and seems an attractive line.

GRIFFIN S ACID-HYPO.

J. J. Griffin and Son, 20 to 26, Sardinia Street, Lincoln's Inn Fields, W.C.

In a turned wooden box we find a white powder and also a small glass vial of liquid. The directions are to dissolve the solid contents of the box in 20 oz. of water, and then to add the contents of the vial. Following the directions we found we had a perfectly clear solution, which we have used as a fixing bath both for paper and plates without its showing any sign of coloration. We are satisfied as to its utility, and there is no doubt as to the convenience of the method of packing. We should think it would be a saleable article. The retail price, 6d., is plainly marked on the package.

A USEFUL PRICE LIST.

W. Butcher and Son, Blackheath, S.E.

Messrs. Butcher publish a twenty-four page price list, which has been produced specially for chemists and small dealers, to issue with their own names and addresses printed thereon. They are supplied at £4 per 1000, or smaller quantities at the same rate. This gives chemists a good opportunity of publishing a useful price list to their customers at a small cost.

INCREASE YOUR BUSINESS!

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MYERS & FROST

The Manchester Photo Enlarging Company,

46a, MARKET STREET, MANCHESTER,

For Price List of

ENLARGEMENTS

Established over 30 years.

Telegraphic Address: "ENLARGING, MANCHESTER."

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WRITE FOR CATALOGUE. WE SEND IT POST FREE.

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Established **1852.**

TRADE "OPTIMUS" *MARK.*

Catalogue **POST FREE.**

FOR USE IN THE HAND

OR ON TRIPOD STAND.

"OPTIMUS" UBIQUE HAND OR STAND CAMERA.

SUITABLE FOR

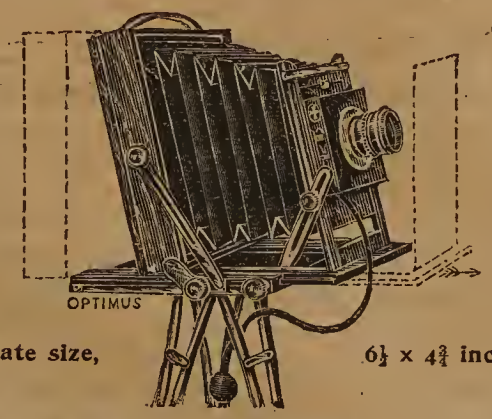
SNAP SHOTS, LANDSCAPES & PORTRAITS.

With "OPTIMUS" Rapid View LENS ..	£2	15 0
,, ,, ,, Rectilinear ..	£4	0 0
,, ,, Extra ,, Euryscope	£5	0 0

The above Camera fitted with RISING FRONT, Also with Horizontal and Vertical SWING BACK, } **15s. Extra.**

EXTRACT FROM *The British Journal Photographic Almanack*:—

"Since our last reference to this little instrument, two important improvements have been added to it, viz., an arraugement for swinging the back, in either the horizontal or the vertical positions, and a rising and falling front. This hand camera includes rack and pinion focussing adjustment (actuated from outside) and a ground glass screen, an 'Optimus' rapid lens, roller blind shutter, and three double dark slides. As all are enclosed within the camera, it is self-contained. The camera being so small—it may be conveniently held in the hand."



Half-plate size, 6½ × 4¾ inches.

"OPTIMUS" UNIVERSAL PHOTO OUTFIT.

£3 10s., with French R.R. lens, Iris diaphragm.

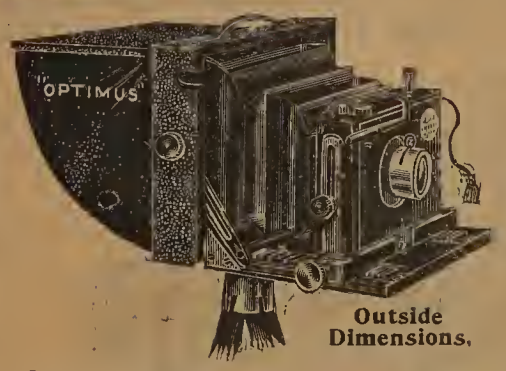
£5 15s, with 'OPTIMUS' R.R. lens, Iris diaphragm.

£7 10s., with 'OPTIMUS' extra rapid Euryscope, Iris do.

Includes superior well-seasoned Mahogany Camera, with leather bellows, rising front, swing arrangement, square reversing frame, rack and pinion focussing adjustment, double dark slide of book-form, achromatic rapid rectilinear lens fitted with Iris diaphragm, roller blind shutter, time and instantaneous exposures, and folding tripod stand.

UNEQUALLED for QUALITY & WORKMANSHIP at the PRICE.

Extra Double Dark Slides — — Each, 10/-



Outside Dimensions.

2½ × 4¾ × 5¼ inches.

"OPTIMUS" KOPIT HAND AND STAND CAMERA,

And Three Double Dark Slides,

4¼ × 3¼ INCHES, **£5 5s.** COMPLETE, WITH

"OPTIMUS" * EXTRA RAPID EURYSCOPE LENS (F 6) in aluminium mount, fitted with Iris Diaphragm.
,, * Roller Blind, Time and Instantaneous, Shutter.
,, * Rack and Pinion focussing Adjustment.
,, * Rising and Falling Front and Swing arrangement.
,, * Automatic Hood attached to Ground Glass, rendering focus cloth unnecessary.
,, * Well-seasoned Mahogany, covered with black leather of durable quality.
,, * Best workmanship throughout.

Eastman's Cartridge Roll Holder can be fitted, 20s.

Complete with three Dark Slides,

£5 5s.

"OPTIMUS" DE POCHE HAND & STAND CAMERA

Giving Pictures 4¼ by 3¼, Quarter-plate.

Horizontal and Vertical SWING BACK.

Covered with durable hard-grained leather; outside dimensions 3¾ by 4¾ by 5½ inches.

Great ingenuity has been displayed in devising the form of this instrument. It is at once the quickest to open and re-close.

Turning the milled button at the side is the only movement necessary to open out the instrument preparatory to taking a photograph, which movement at the same time includes the necessary adjustment of focus, ensuring absolutely sharp definition. To re-close the camera the milled head or button requires similar rotation, but in the opposite direction.

The shutter is one of the most modern, of the roller blind type, with adjustment for varying speed. The Lens covers very amply, and gives superb definition. It works with the aperture of F 6, and is of the EXTRA-RAPID Euryscope type. It is mounted in aluminium, and has an Iris diaphragm fitted.

Eastman's Cartridge Roll Holder can be fitted, 20s.

WE SUPPLY EVERY PHOTOGRAPHIC REQUISITE.

PERKEN, SON & RAYMENT 99, Hatton Garden, Holborn Viaduct, LONDON.

THE "VICTORIA" PHOTO OUTFITS.

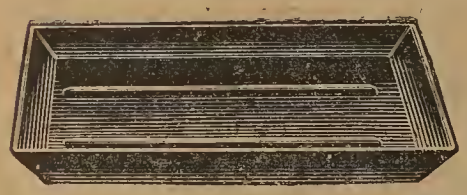
J. Woolley, Sons and Co., Limited, Victoria Bridge, Manchester.

These well-known outfits are splendid value, the workmanship is good, the material used is sound, and the general finish is excellent. They compare favourably with those by any other maker at similar prices. Commencing at the popular price of one guinea, they command a ready sale. The No. 3A half-plate outfit consists of a camera of polished mahogany, very compact, leather bellows, reversing and swing back, double extension, back slides to the front for wide-angle lenses, rising front, and handle for

carrying, turntable fitted in base-board. A dark slide of the book-form pattern of polished mahogany, with spring catches to the shutters. Rapid rectilinear, double achromatic lens, with iris diaphragm. A roller-blind, instantaneous shutter, fitted behind the lens, with speed indicator and pneumatic release, and a 3 fold, ash, rule-joint stand, fitted to turntable in the base-board. This outfit is splendid value at the retail selling price of £3 15s. The No. 4A and No. 5 outfits are also high-class cameras, fitted with superior lenses and with Thornton-Pickard time and instantaneous shutter.

NEW METAL DISHES.

W. Butcher and Son, Blackheath, S.E.



In addition to their well-known semi-porcelain and xylonite dishes, Messrs. Butcher and Son are offering a new and very inexpensive line of metal dishes as follows: ¼-plate, 3d.; ½-plate, 6d.; ¼-plate, 1s.

FALLOWFIELD'S P.O.P. MOUNTANT.

Jonathan Fallowfield, 146, Charing Cross Road, W.C.

In the days when albumin prints were in vogue the popular mountant was starch, but this requires considerable skill, both in the making and using when the prints are P.O.P., platinotype, bromide, or any of the stout papers now in general use. We find the specimen of this mountant which has been supplied to us to be admirably adapted for the purpose for which it is sold. It is cleanly and economical in use, and perfectly free from grit or other impurities. It is packed in glass jars with screw-metal tops to sell at 6d. and 1s. Each dozen jars is neatly packed in a cardboard box with hinged lid, convenient for counter or window display.

THE "VICTORIA" TWIN LENS MAGAZINE CAMERA.

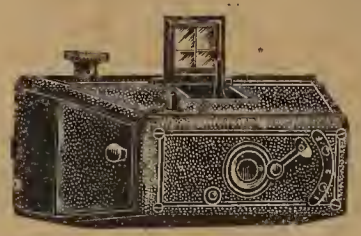
J. Woolley, Sons and Co., Limited, Victoria Bridge, Manchester.

This is a new line, and is a reliable camera, very little larger than many hand cameras, with the usual small-sized finders. It is very simple to work in every way, and as it possesses a full-sized finder, by which the object can be observed up to and including exposure, it has great advantages over the ordinary form. It carries twelve plates in sheaths, and an absolutely certain automatic changing arrangement. Every plate after exposure is held by a special mechanism, so that the camera can be held and used in any position without the plates moving or rattling. It is fitted with achromatic view lenses with adjustable diaphragms, ever-set time and instantaneous shutter, with speed regulator, and is well covered in morocco leather. Retail price complete 45s.

THE "JUMELLE" HAND CAMERA FOR "DAYLIGHT" FILMS.

W. Watson and Sons, 313, High Holborn, W.C.

This camera is made in two sizes—to take pictures 2 by 1½ inches, and to take pictures 3½ by 2½ inches, and from its lightness and portability and general convenience will commend itself to many. The ordinary Kodak spools of film are used, and as the exposed film can be removed and a new film substituted by daylight, the number of exposures that can be made without a visit to a dark room is practically unlimited. The camera can be attached to a tripod and the shutter allows either time or instantaneous exposures. The lens is fitted with a rotating diaphragm. The finder folds down when not in use, and by means of a pointer placed in front of the finder the camera can be correctly levelled and the centre of the view determined. The cameras weigh 1 lb. and 8 ozs. respectively, and the retail prices are 30s. and 14s. 6d.



THE SANDERSON POPULAR CAMERA SET.

G. Houghton and Son, 88 and 89, High Holborn, W.C.

The advantages of the "Sanderson" camera are now generally recognised, but hitherto the price has been too high to suit the average amateur's pocket. The present set is introduced to remedy this state of affairs, and will doubtless find a ready sale among those who are anxious to do serious work in photography. The camera has all the movements of the higher-priced instruments, that is to say, every movement required for the most difficult work. It has greater rise of front than possible with any other pattern camera. It does away with the tilting of the camera, dispenses with the swing back, and the greatest possible latitude between lens and plate is secured, and there is the power to swing the front and to compose the subject on the ground glass and roughly focus it by one and the same action. Far greater extension is given than usual, the half-plate extending to 20 in. The set consists of camera, double book form dark slide, achromatic R R lens with iris diaphragm, Thornton Pickard time and instantaneous shutter, and three-fold tripod stand. The prices are: ¼ plate, £4 10s.; ½ plate, £5 5s.; and ¼ plate, £7 12s. 6d. A turntable is fitted to the ½ and ¼ plate sizes for 5s. and 7s. 6d. extra respectively.

THE "PHŒNIX" CAMERA."

Reynolds and Branson, 14, Commercial Street, Leeds.

The "Phœnix" Camera is an excellent camera for the tourist, being very simple in construction, occupies very little space, and is very light, the half-plate size only weighing 2½ lbs. The back has reversing frame, and slides forward to allow of the use of short focus lenses. Price, with three double dark slides with improved spring catches, half-plate size, £4 17s. 6d.

VELOX MOUNTANT.

J. J. Griffin and Son, 20 to 26, Sardinia Street, Lincoln's Inn Fields.

This preparation has been introduced as a useful assistant to the users of Velox paper, and we find that it not only fulfils the purpose of securely fastening this paper to its mount, but is equally efficacious as an adhesive for platinotype and bromide papers, even of the stoutest descriptions. The paste is singularly smooth and entirely without grit. It can be applied with great ease. When dry the adhesion is perfect, and it causes very little cockling of the mount. It is very neatly put up in bottles with a well-finished screw, nickel-plated top, and also in collapsible tubes, a form which will be found very convenient for those who want to mount a print or two now and again.

THE "VEDETTE" FOLDING HAND CAMERA.

G. Houghton and Son, 88 and 89, High Holborn, W.C.

This camera is on the folding principle which has now become popular both in England and America, and which allows every

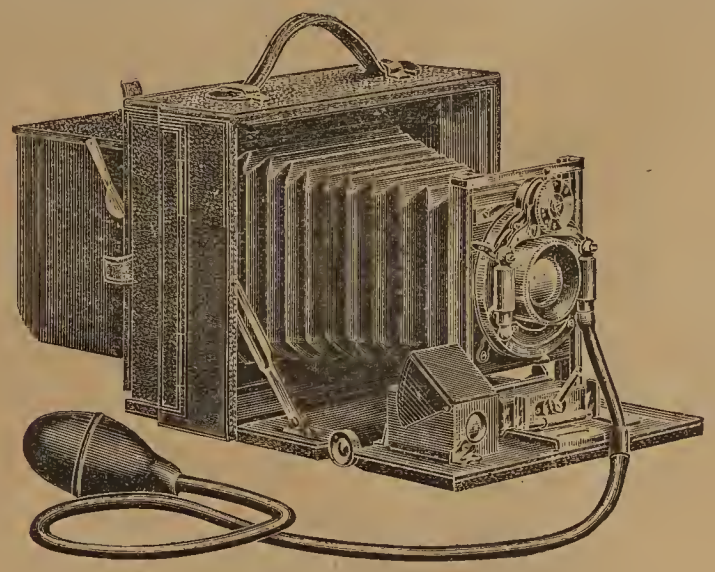


Fig. 1.—Open Ready for Use.

movement essential to a stand camera to be introduced in an instrument which is portable, and answers every purpose to which a hand camera can be put. The principal features of the camera are: Horizontal and vertical swing back; pivotted focussing screen, allowing of easy insertion of dark slide, and fitted with automatic focussing hood; patent clamping arrangement by which the lens can be rapidly drawn out and automatically fixed at any point; engraved focussing scale for snapshot work; rack and pinion for fine focussing; front with rising and lateral movement. The camera is of mahogany, polished inside and covered with fine grained leather. It measures, closed, $6\frac{1}{4}$ by 5 by $2\frac{1}{2}$ inches. The lens is a selected Rapid Rectilinear with iris diaphragm working at F 8. The shutter is the well-known "Bausch and Lomb," working between the lenses, and giving a varying exposure of from one second to 100th part of a second, either by hand or pneumatic release. Time or ball exposures are also obtainable, the shutter in the latter case remaining open as long as the ball is pressed. The finder is reversible, for taking either oblong or upright pictures. The double dark slides are light and compact, and are fitted with celluloid shutters, black one side and brown the other. Eastman cartridge roll holders can be easily adapted to these cameras, fitting into the same groove as the slides, and being in perfect register with them. In this case the camera is supplied with a removable focussing screen. The price of the camera with three double dark slides, $4\frac{1}{4}$ by $3\frac{1}{4}$, is £5 10s. Extra double dark slides 3s. 6d. each.

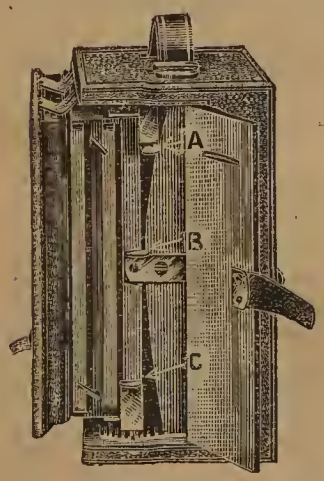
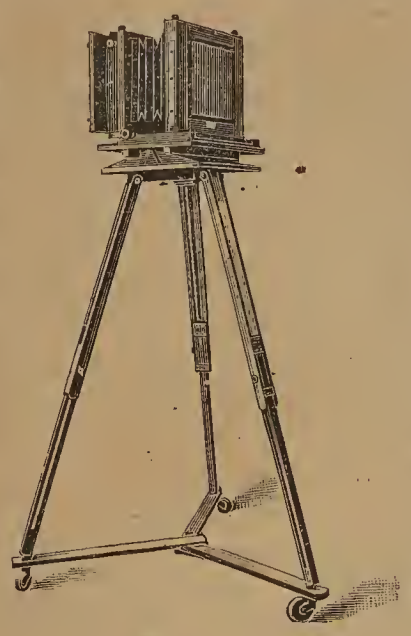


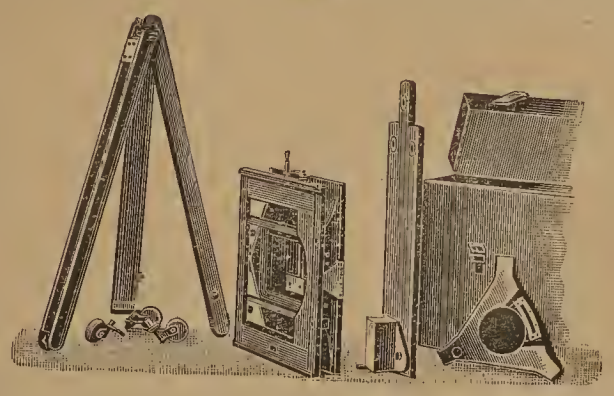
Fig. 2.—Closed, showing Slide inserted and how Back Swing is obtained.

THE "ELLIS" PORTABLE STUDIO STAND.

W. Watson and Sons, 313, High Holborn, W.C.

This valuable piece of apparatus, designed by Mr. Alfred Ellis, the well-known photographer, consists of a tripod of the usual kind and available for field work. In addition a studio table top is provided with a tilting arrangement. For use where a studio form of stand is desirable the legs are fixed to a base fitted with india-rubber-covered castors, upon which the whole structure moves. The legs having sliding adjustment, the height of the stand may be varied between 4 feet 6 inches and 2 feet 6 inches. The whole packs away neatly into a comparatively small-sized case and the weight is 13 lbs. The advantages of such a stand to the professional photographer who is often called upon to take portraits away from his studio are manifest, and the amateur who delights in doing all kinds of odd photographic work will quickly appreciate such a piece of apparatus. We must not omit to mention that the tripod top has its centre turned out for the purpose of allowing the camera to be placed upon it with the lens projected through pointed downwards, which will be found a very convenient way of photographing small objects or even of copying. The price of the stand is £5.





A FREE SHOW CASE.

W. Butcher and Son, Blackheath, S.E.

In connection with the "Primus" specialties, Messrs. Butcher and Son offer to supply a handsome show-case, with a £5 net order, to any dealer in photographic or lantern apparatus, who can make good use of the same. The ordinary cases are in polished mahogany, but where desired the case is supplied in walnut or ebonised to match shop fittings. The case is offered to dealers in the hope that it will be found of great advantage in handling Primus specialties. Many of them being small unless proper provision is made for storing them, soon become dirty and unsaleable. This case, besides being an ornament to the shop, forms an attractive advertisement and is a good storing place.

SOME USEFUL PHOTOGRAPHIC FORMULÆ.

THE average amateur photographer, whilst occasionally a strong disbeliever in ready-made solutions, can be induced to save himself the trouble if suitably prepared solutions are offered to him. The old style of preparation, the composition of which was in no way indicated, has gone out of fashion, and the tendency is to place on the market such things which, whilst the actual composition is not given, have at least some indication of their strength on the labels. Below we propose to suggest some preparations, and also suitable labels, and the approximate retail price.

10 per Cent. Pyro Solution.

Metabisulphite of Potash		½ oz.
Pyrogallic Acid		1 oz.
Potassium Bromide		100 Grs.
Distilled Water	to	9 oz.

Label: Ten per cent. pyro solution. Add 30 minims of this solution to ½ oz. of solution of common washing soda, made by dissolving 2 ozs. in a pint of water, and add sufficient water to make 1 oz. This solution will keep in good condition at least six months. Price 1s. 8d. If desired, the soda solution may be made up, and in that case it should be made at least of 25 per cent. strength, and the label altered.

Pyro-Ammonia 10 per cent. Solutions.

No. 1.	Liq. Ammonia (880)		1 oz.
	Distilled Water		9 ozs.
No. 2.	Ammonium Bromide		1 oz.
	Distilled Water	to	9 ozs.
No. 3.	Potassium Metabisulphite		½ oz.
	Pyrogallic Acid		1 oz.
	Distilled Water	to	9 ozs.

Label: Ten per cent. pyro-ammonia developer. For use take 80 minims of No. 1, 60 minims of No. 2, and 40 minims of No. 3, and make up to 2 ozs. with water. For over-exposure reduce the quantity of No. 1, and increase Nos. 2 and 3. For under-exposure reduce Nos. 2 and 3, and increase No. 1. Price 2s. 6d.

Ortol Developer.

No. 1.	Potassium Metabisulphite		40 Grs.
	Ortol		75 Grs.
	Distilled Water	to	10 ozs.
No. 2.	Potassium Carbonate		300 Grs.
	Sodium Sulphite		2 ozs.
	Potassium Bromide		5 Grs.
	Sodium Hyposulphite		1 Gr.
	Distilled Water	to	10 ozs.

Label: For use, mix equal parts of No. 1, No. 2, and water. This developer does not stain, and can be used repeatedly and keeps well, and is suitable for bromide papers and lantern plates. Price 2s.

Pyro-Metol Developer.

No. 1.	Metol		45 Grs.
	Potassium Metabisulphite		½ oz.
	Pyrogallic Acid		55 Grs.
	Potassium Bromide		20 Grs.
	Distilled Water	to	10 ozs.
No. 2.	Sodium Carbonate		4 ozs.
	Distilled Water	to	10 ozs.

Label: For use mix equal parts of each and add an equal quantity of water. This developer is extremely energetic, and is specially suitable for hand camera work. For over and under exposure double the quantity of water. Price 1s.

Metol-Hydroquinone Developer.

No. 1.	Metol		40 Grs.
	Hydroquinone		50 Grs.
	Potassium Metabisulphite		120 Grs.
	Potassium Bromide		15 Grs.
	Distilled Water	to	10 ozs.
No. 2.	Potassium Hydrate		180 Grs.
	Distilled Water	to	10 ozs.

Label: This developer will keep well, and is suitable for all plates and papers, and will not stain the negatives or hands. For negatives, mix ½ oz. of each and add 1 oz. of water. For papers, add 3 ozs. of water. It may be used four or five times without disadvantage. Price, 1s.

One-Solution Metol Hydro Developer.

Metol		50 Grs.
Hydroquinone		40 Grs.
Sodium Sulphite		500 Grs.
Potassium Bromide		25 Grs.
Sodium Carbonate		500 Grs.
Distilled Water	to	10 ozs.

Label: This developer will keep well, and will not stain hands or plates. For negative work mix with an equal quantity of water; for papers add double the quantity of water. It may be used four or five times in succession. Price 1s.

Glycin Developer.

No 1.	Glycin		200 Grs.
	Sodium Sulphite		2½ ozs.
	Distilled Water	to	10 ozs.
No. 2.	Potassium Carbonate		1 oz.
	Distilled Water	to	10 ozs.

Label: For use mix half an ounce of No. 1, three-quarters of an ounce No. 2, and 2 ozs. of water. This developer may be used four or five times in succession, and will not stain hands or plates. It is suitable also for bromide papers. Price 1s. 6d.

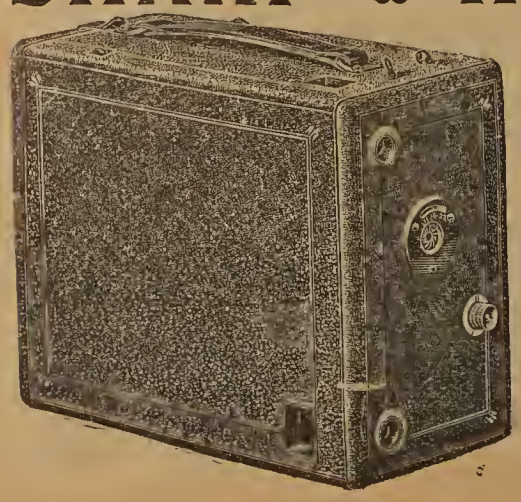
The above may be considered as the leading developers that are likely to be useful.

The Combined Reducer and Intensifier.

Potassium Bromide		120 Grs.
Cupric Sulphate		250 Grs.
Distilled Water	to	10 ozs.

Label: For intensification immerse the well-washed negative in the solution till bleached, then rinse well and re-develop. For reduction immerse the negative in the solution till bleached slightly and then refix; the longer the negative is allowed to remain in the solution the greater the reduction. Price 1s.

SHARP & HITCHMOUGH, LIVERPOOL



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GENERAL WHOLESALE DEALERS.

LIBERAL TERMS TO CHEMISTS.

THE APTUS
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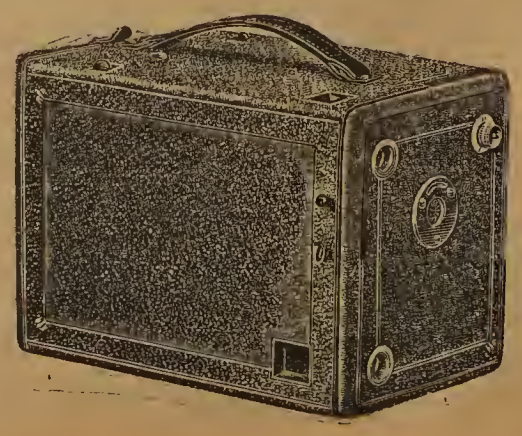
Magazine Camera.
12 Plates or 24 Films.
UP-TO-DATE.

THE APTUS
21/-
Magazine Camera.
AUTOMATIC.



SHARP & HITCHMOUGH, LIVERPOOL.

The Silver Intensifier.

No. 1.	Mercuric Chloride	100 Grs.
	Ammonium Chloride	100 Grs.
	Distilled Water to	10 ozs.
No. 2.	Silver Nitrate	100 Grs.
	Potassium Cyanide	q.s. or 100 Grs.
	Distilled Water to	10 ozs.

To make solution No. 2 dissolve the silver in half the water and the cyanide in the remainder; add the latter to the silver, gradually shaking between each addition until the white precipitate first formed is nearly all redissolved, and then make the total bulk to 10 ozs.

Label: Poison. The negative must be thoroughly freed from hypo. and then immersed in No. 1 till bleached right through, then well wash and immerse in No. 2 till blackened, and again wash. Price 2s. 6d.

One Solution Reducer.

Sodium Sulphite	180 Grs.
Potassium Ferric Oxalate	½ oz.
Distilled Water to	10 ozs.

Dissolve and add

Oxalic Acid (Crystals)	30 Grs.

Shake till the solution turns green, then pour off from any undissolved acid and add

Sodium Hyposulphite	2½ ozs.
Water q.s. to make	20 ozs. in all.

Label: Immerse the negative in the solution and remove just before the desired reduction is obtained, and then wash thoroughly. This solution must be kept in the dark, and can be repeatedly used, or until it turns yellow. Price 1s.

One Solution Reducer.

Potassium Iodide	40 Grs.
Sodium Hyposulphite	2 ozs.
Distilled Water to	10 ozs.

Label: This reducer acts slowly, and may be used for plates and papers. After use the negative should be well washed. Price, 1s.

Ordinary Negative Varnish.

Gum Sandarac	1 oz.
Orange Shellac	½ oz.
Castor Oil	90 Min.
Methyl Alcohol	1 pint.

Allow to stand with occasional agitation till dissolved, and then filter. Label: The negative should be heated before a fire till it can be comfortably borne on the back of the hand, and then the varnish flowed over, any excess being drained off, and the negative should then be again placed near the fire to dry. Price 2s. 6d.

Sulphocyanide Toning Bath (concentrated).

Potassium Sulphocyanide	1 oz.
Chloride of Gold	15 Grs.
Distilled Water to	30 drachms.

Dissolve the sulphocyanide in half the water and the gold in the remainder. Mix the two solutions.

Label: This solution must be kept in the dark. Every 2 drachms of this bath contains 1 Grn. of gold and should be diluted with 8 ozs. of water to make a normal bath that will tone about 340 sq. in. (equal to about twelve half-plates) of P.O.P. to a warm purple. The more prints the browner the tone. Price, 3s.

Concentrated Platinum Toner.

Potassium Chloroplatinite	15 Grs.
Dilute Phosphoric Acid	3⅓ ozs.

Label: Keep in the dark. Dilute half an ounce with half a pint of water. Immerse the prints in a 5 per cent. solution of salt and water for 5 minutes; wash for 5 minutes, and immerse in the toning bath, and then wash thoroughly and fix in

Hypo	3 ozs.
Sodium Sulphite	1 oz.
,, Carbonate	½ oz.
Water	30 ozs.

For black tones omit the salt bath, wash the prints for 15 minutes, tone till brown in a borax gold bath, wash well, and then tone in the platinum bath, and fix as directed above. Prite, 3s. 6d.

Uranium Intensifier.

Potassium Ferrioyanide (washed)	48 Grs.
Uranium Nitrato	48 Grs.
Sodium Acetatc	48 Grs.
Glacial Acetio Acid	1 oz.
Distilled Water to	10 ozs.

Label: Poison. Immerse the well-washed negative till the desired intensification is reached, rinse for five minutes, and dry. This intensifier acts very strongly and should not therefore be allowed to act too long. Price 1s.

Cold Varnish.

Pyroxylin	10 Grs.
Amyl Alcohol	1 oz.
Amyl Acetate	1 oz.

Allow to stand, shaking frequently till dissolved. Label: The negative should be thoroughly dry before this solution is applied, which may be done either by flowing it over the solution or with a flat brush. The negative should be placed in a warm place for at least twelve hours to thoroughly dry. Price 1s.

Another Cold Varnish.

Japanese Gold Size,	
Benzole aa	p. æq.

Label: In applying this varnish great care should be taken not to use it near a light or open fire. It can be flowed over or brushed on the negative. Price 1s. 6d. for 4 ozs.

Black Varnish.

Brunswick Black	1½ ozs.
Benzole	1 oz.

Label: The varnish should be applied with a brush, care being taken not to use it near a light or open fire. Price 1s.

Dead Black Varnish.

Borax	30 Grs.
Shellac	60 Grs.
Glycerin	30 Min.
Water	2 ozs.
Boil till dissolved, filter, and add Anilino Black	120 Grs.

Label: Apply the solution with a brush, and repeat when dry if necessary. Price 1s.

Combined Toning and Fixing Bath.

Sodium Hyposulphite	4 ozs.
Ammonium Sulphocyanide	½ oz.
Lead Nitrate	100 Grs.
Alum	200 Grs.
Distilled Water to	10 ozs.

Dissolve the hypo. and sulphocyanide in 8 ozs. of the water, then add the alum dissolved in 1 oz. of water, and then the lead dissolved in 1 oz. of water, boil for ten minutes, allow to cool and filter, then add 7½ Grs. of chloride of gold. Label: Mix the requisite quantity with an equal quantity of water. The prints should be rinsed in water for five minutes before toning. Price, 2s.

In all cases the prices suggested are approximate only, but are based on those of preparations already on the market.

Professor Lainer, of Vienna, strongly recommends the use of a mixture of equal parts of magnesium powder and ammonium nitrate for flash-light work. The great advantage of this mixture is that there is very little smoke—so little, indeed, that no less than five exposures may be made in a room one after the other without any inconvenience. The normal quantity of magnesium to obtain a well-exposed negative of a sitter at a distance of 2 metres with a lens working at F/7 and with the light only 1¾ metres away is 0·3 g. It is advisable to melt the ammonium nitrate and then finely powder it, and then mix it with an equal weight of the magnesium with a feather on a sheet of paper and keep it in an air-tight bottle. A small strip of nitre paper, one end of which is in contact with the flash powder, may be used, or else a little pyroxylin may be pulled out, the powder sprinkled over it, and then the pyroxylin fired with a long taper. From practical trial we think this is about the best formula for a flash powder that has yet been given, and we should advise its being put up for sale. If the nitrate and magnesium were packed in little bottles with screw nickel caps, the latter might be used as measures for the powders, and the customers could then mix the same just before using, and this would be preferable to keeping the two ready mixed.

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